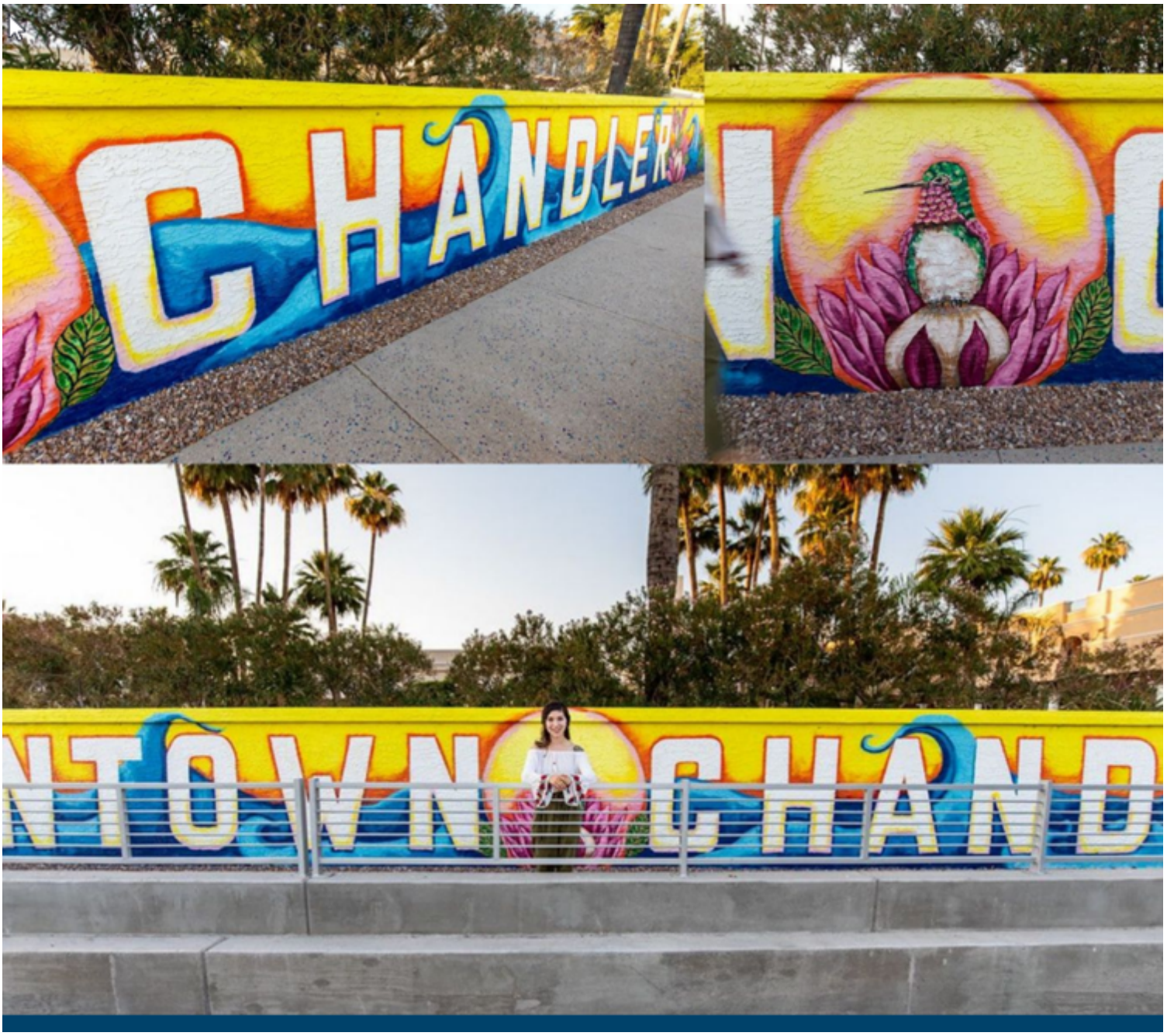


City Council Study Session

Monday, April 19, 2021
6:00 p.m.

Chandler City Council Chambers
88 E. Chicago St., Chandler, AZ

CHANDLER arizona
Community of Innovation


From left to right: Councilmember Matt Orlando, Councilmember Rene Lopez, Vice Mayor Mark Stewart, Mayor Kevin Hartke, Councilmember OD Harris, Councilmember Christine Ellis, Councilmember Terry Roe

Our Vision

We are a world-class City that provides an exceptional quality of life.

Our Brand

A safe community that connects people, chooses innovation and inspires excellence.

Our Goals

City Council Strategic Policy Goals

1. Being the most connected City
2. Being a leader in trust and transparency
3. Maintaining fiscal sustainability
4. Attracting a range of private sector businesses
5. Fostering a contemporary culture that embraces unity
6. Being safe and beautiful

Pursuant to Resolution No. 4464 of the City of Chandler and to A.R.S. 38-431.02, notice is hereby given to the members of the Chandler City Council and to the general public that the Chandler City Council will hold a STUDY SESSION open to the public on Monday, April 19, 2021, at 6:00 p.m., in the Chandler City Council Chambers, 88 E. Chicago Street, Chandler, Arizona. One or more members of the Chandler City Council may attend this meeting by telephone.

Persons with a disability may request a reasonable accommodation such as a sign language interpreter by contacting the City Clerk's office a 480-782-2181. Requests should be made as early as possible to allow time to arrange accommodation.

Agendas are available in the Office of the City Clerk, 175 S. Arizona Avenue.



Study Session Agenda

City Council Strategic Framework Focus Areas: Legend

Infill and Redevelopment | Mobility | Quality of Life

Innovation and Technology | Neighborhoods | General Governance

Call to Order

Roll Call

Scheduled Public Appearances

1. Proclamation - Police Week 2021
2. Proclamation - Building Safety Month
3. Proclamation - Arbor Day
4. Recognition - Arizona Water Association Environmental Stewardship Award
5. Recognition - Arizona Recycling Coalition Recycler of the Year

Consent Agenda

Items listed on the Consent Agenda may be enacted by one motion and one vote. If a discussion is required by members of the governing body, the item will be removed from the Consent Agenda for discussion and determination will be made if the item will be considered separately.



Airport

1. **Construction Contract No. AI2002.401 with Sunland Asphalt & Construction, LLC, for Taxiway C Rehabilitation**

   Move City Council award Contract No. AI2002.401 to Sunland Asphalt & Construction, LLC, for Taxiway C Rehabilitation, in an amount not to exceed $799,799.

   Council Focus Area(s):

2. **Project Agreement No. AI2101.401 with SDB, Inc., Pursuant to Job Order Contract No. JOC1912.401, for Airport Plumbing Renovation**

   Move City Council Award Project Agreement No. AI2101.401 to SDB, Inc., Pursant to Job Order Contract No. JOC1912.401, for Airport Plumbing Renovation, in an amount not to exceed $105,446.49.

   Council Focus Area(s):

3. **Resolution No. 5467 approving the Airport Master Plan Update for the Chandler Municipal Airport**

   Move City Council pass and adopt Resolution No. 5467 approving the Airport Master Plan Update for the Chandler Municipal Airport.

   Council Focus Area(s):



City Clerk

4. **March 4 and 5, 2021, and April 5 and 8, 2021, City Council Minutes**

   Move to approve the Council meeting minutes of the Special Meeting - Retreat of March 4 and 5, 2021, Study Session of April 5, 2021, and the Work Session, and Regular Meeting of April 8, 2021.

   Council Focus Area(s):

5. **Board and Commission Appointments**

   Move City Council approve the Board and Commission appointments as recommended.

   Council Focus Area(s):






Communications and Public Affairs

6. **Resolution No. 5468 Tribal Gaming Revenue Grant Application**

   Move City Council pass and adopt Resolution No. 5468 authorizing the submittal of a $106,275 Tribal Gaming Grant Application from the Chandler Fire Department to the Fort McDowell Yavapai Nation to replace a low acuity program vehicle.

   Council Focus Area(s):

7. **Resolution No. 5469 Authorizing the Submittal of a $10,000 Tribal Gaming Revenue Sharing Grant Application**

   Move City Council pass and adopt Resolution No. 5469 authorizing the submittal of a $10,000 Tribal Gaming Grant Application from the Chandler Police Department to the Fort McDowell Yavapai Nation for the purchase of residential security equipment to be distributed to crime victims by the Victim Services Unit as a preventative measure against future crime or violence.

   Council Focus Area(s):





Community Services

8. **Construction Manager at Risk Contract No. PR2004.401 with Hunter Contracting Co. for the Veterans Memorial Phase II**

   Move City Council award Construction Manager at Risk Contract No. PR2004.401 to Hunter Contracting Co., for the Veterans Memorial Phase II, in an amount not to exceed $3,513,861.76.

Council Focus Area(s):

9. **Professional Services Agreement No. PR2004.451 with Dibble CM, LLC (DE LLC), for Veterans Memorial Phase II**

Move City Council award Professional Services Agreement No. PR2004.451, to Dibble CM, LLC (DE LLC), for Veterans Memorial Phase II, in an amount not to exceed $122,400.00.

Council Focus Area(s):



Development Services

10. **Final Adoption of Ordinance No. 4967, PLH20-0052 Serene Estates Rezoning**

Move City Council adopt Ordinance No. 4967, approving PLH20-0052 Serene Estates, Rezoning from C-1 to PAD for single-family residential located northwest of the northwest corner of Galveston and Hartford streets, subject to the conditions as recommended by Planning and Zoning Commission.

Council Focus Area(s):



Fire Department

11. **Resolution No. 5465 authorizing an Intergovernmental Agreement with the Gila River Indian Community for the provision of mutual aid services**

Move City Council pass and adopt Resolution No. 5465, authorizing the City of Chandler to enter into an Intergovernmental Agreement with the Gila River Indian Community for the provision of mutual aid services, and authorizing the Fire Chief or designee to execute the agreement.

Council Focus Area(s):

12. **Professional Services Agreement No. FI2001.201 with HDA Architects, LLC, for Chandler Fire Station No. 282 Reconstruction**

Move City Council award Professional Services Agreement No. FI2001.201, to HDA Architects, LLC, for Chandler Fire Station No. 282 Reconstruction, in an amount not to exceed $559,279.00.

Council Focus Area(s):

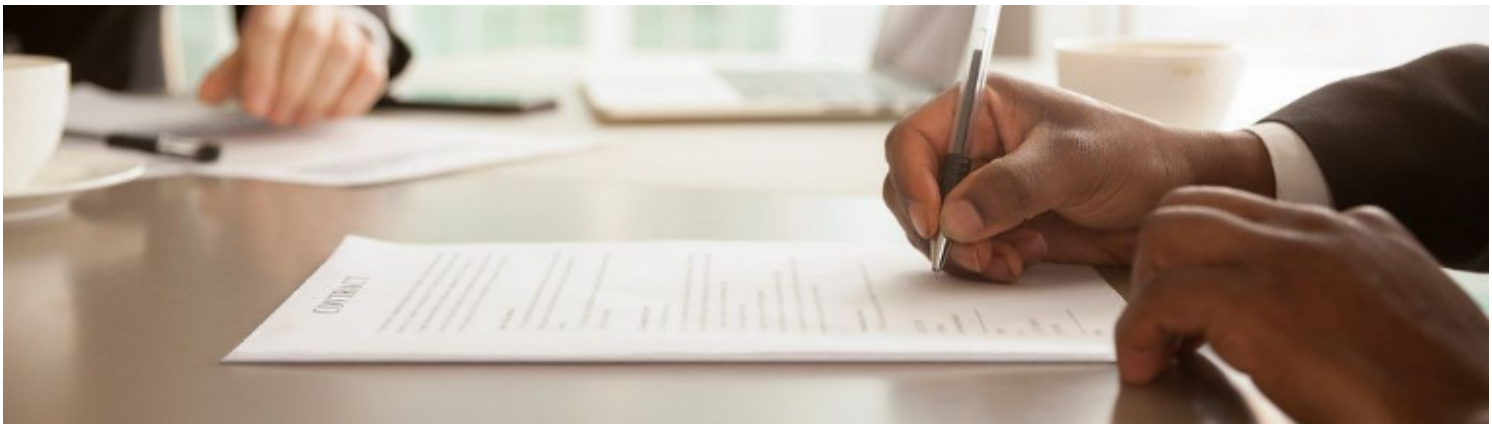


Information Technology

13. **Purchase of Webex Annual Subscription from NTT America, Inc.**

Move City Council approve the purchase of Webex annual subscription from NTT America, Inc., utilizing 1GPA Contract No. 16-11PV-05, in the amount of $212,415, for a three-year period beginning May 1, 2021, through April 30, 2024, payable on an annual basis, and authorize the City Manager or designee to sign a linking agreement with NTT America, Inc.

Council Focus Area(s):



Management Services

14. **Resolution No. 5466, Pension Funding Policy Update**

Move City Council pass and adopt Resolution No. 5466, adopting the updated Pension Funding Policy and accepting the City's share of assets and liabilities under the Public Safety Personnel Retirement System Actuarial Valuation Report.

Council Focus Area(s): 

15. **New License Series 7, Beer and Wine Bar Liquor License application for Blacksheep Wine LLC, dba Blacksheep Wine & Merchant**

Move for recommendation to the State Department of Liquor Licenses and Control for approval of State Liquor License No. 07070393, a Series 7, Beer and Wine Bar Liquor License, for Lauren Kay Merrett, Agent, Blacksheep Wine LLC, dba Blacksheep Wine & Merchant, located at 98 S. San Marcos Place, and approval of the City of Chandler, Series 7, Beer and Wine Bar Liquor License No. 300235 L7.

Council Focus Area(s): 

16. **New License Series 12, Restaurant Liquor License application for Chipotle Mexican Grill Inc., dba Chipotle Mexican Grill #3836**

Move for recommendation to the State Department of Liquor Licenses and Control for approval of the State Liquor Job No. 139220, a Series 12, Restaurant Liquor License, for H J Lewkowitz, Agent, Chipotle Mexican Grill Inc., dba Chipotle Mexican Grill #3836, located at 1055 W. Chandler Boulevard, and approval of the City of Chandler, Series 12, Restaurant Liquor License No. 300780 L12.

Council Focus Area(s): 

17. **Cooperative Agreement with JPMorgan Chase Bank, N.A., for Banking Services**

Move City Council approve a cooperative agreement with JPMorgan Chase Bank, N.A., for Banking Services for the period beginning May 1, 2021, through December 31, 2024, in an amount not to exceed $34,000 per year.

Council Focus Area(s): 

18. **Claims Report for the Quarter Ended March 31, 2021**

Move to accept the claims report for the quarter ending March 31, 2021, which is included with this memo as an attachment.

Council Focus Area(s):



Neighborhood Resources

19. **Resolution No. 5459 Authorizing the Submittal of the Community Development Block Grant Program Year 2021–2022 Annual Action Plan**

Move that City Council pass and adopt Resolution No. 5459 approving and authorizing the Acting City Manager or his designee to execute and submit the Community Development Block Grant (CDBG) Program Year 2021–2022 Annual Action Plan to the United States Department of Housing and Urban Development (HUD) and execute all subrecipient contracts.

Council Focus Area(s):

20. **Resolution No. 5460 Approving the Allocation of Program Year 2021–2022 HOME Investment Partnerships Funds from the Cranston-Gonzalez National Affordable Housing Act**

Move that City Council pass and adopt Resolution No. 5460 approving and authorizing the Acting City Manager or his designee to allocate Program Year 2021-2022 HOME funds from the Cranston-Gonzalez National Affordable Housing Act through the Maricopa HOME Consortium and execute all subrecipient contracts.

Council Focus Area(s):

21. **Resolution No. 5461 Authorizing the Amendment of the 2020-2025 Consolidated Plan and Submittal of Substantial Amendment No. 1 to the United States Department of Housing and Urban Development**

Move that City Council pass and adopt Resolution No. 5461 Amending the 2020-2025 Consolidated Plan and Submitting Substantial Amendment No. 1 to the United States Department of Housing and Urban Development (HUD) for Its Consideration in Order to Redirect the Planned Use of Anticipated Community Development Block Grant Funds; and Approving and Authorizing the Acting City Manager or His Designee to Submit Substantial Amendment No. 1 to HUD.

Council Focus Area(s):



Police Department

22. **Resolution No. 5454 Authorizing an Intergovernmental Agreement with Maricopa County for Animal Care and Control Services**

Move City Council adopt Resolution No. 5454 authorizing an Intergovernmental Agreement (IGA) with Maricopa County, through Maricopa County Animal Care and Control, for animal control services, in an amount not to exceed $221,431, for the period of July 1, 2021, through June 30, 2022; authorizing the Mayor to sign the Agreement; authorizing the City Manager or Designee to sign, administer, execute, and submit all documents and other necessary instruments in connection with such Agreement

Council Focus Area(s):

23. **Project Agreement No. PD1901.401 with Caliente Construction, Inc., for the Police Station Main Lobby and Records Renovations**

Move City Council award Project Agreement No. PD1901.401 to Caliente Construction, Inc., Pursuant to Job Order Contract No. JOC1910.401, for the Police Station Main Lobby and Records Renovations, in an amount not to exceed $1,321,730.47.

Council Focus Area(s):

24. **Professional Services Agreement No. PD1901.451 with Kitchell/CEM Inc., for the Police Station Main Lobby and Records Renovations**

Move City Council award Professional Services Agreement No. PD1901.451, to Kitchell/CEM Inc., for the Police Station Main Lobby and Records Renovations, in an amount not to exceed $198,540.

Council Focus Area(s):



Public Works and Utilities

25. **Resolution No. 5470, Authorizing a Reclaimed Water Agreement and Project Agreement No. 4 Under the Public Infrastructure Master Agreement Dated May 24, 2019, with Intel Corporation**

Move City Council pass and adopt Resolution No. 5470, authorizing a Reclaimed Water Agreement and Project Agreement No. 4 under the Public Infrastructure Master Agreement dated May 24, 2019, between the City of Chandler and Intel Corporation for the construction of a Reclaimed Water Interconnect Facility and related public infrastructure needed to serve Intel's campus at 4500 S. Dobson Road.

Council Focus Area(s):

26. **Agreement No. PW9-962-4035, Amendment No. 2, with Eurofins Testamerica Laboratories, Inc.; Legend Technical Services of Arizona, Inc.; and Radiation Safety Engineering, Inc., for Laboratory Testing Services**

Move City Council approve Agreement No. PW9-962-4035, Amendment No. 2 with Eurofins Testamerica Laboratories, Inc.; Legend Technical Services of Arizona, Inc.; and Radiation Safety Engineering, Inc., for laboratory testing services, in a combined amount not to exceed $379,000, for the period of May 1, 2021, through April 30, 2022.

Council Focus Area(s):

27. **Professional Services Agreement No. WW1901.203, with Wilson Engineers, LLC, for the Reclaimed Water Interconnect Facility Design Services**

Move City Council award Professional Services Agreement No. WW1901.203, to Wilson Engineers, LLC, for the Reclaimed Water Interconnect Facility Design Services, in an amount not to exceed $1,809,660.

Council Focus Area(s):

28. **Construction Contract No. WA1903.401 and WA1908.401, with Achen-Gardner Construction, LLC, for the Arrowhead Water Production Facility Rehabilitation and Pecos Surface Water Treatment Plant Surge System**

Move City Council award Construction Contract No. WA1903.401 and WA1908.401 to Achen-Gardner Construction, LLC, for the Arrowhead Water Production Facility Rehabilitation and Pecos Surface Water Treatment Plant Surge System, in an amount not to exceed $6,053,000.

Council Focus Area(s):

29. **Professional Services Agreement No. WA1903.451 and WA1908.451, with Wilson Engineers, LLC, for the Arrowhead Water Production Facility Rehabilitation and Pecos Surface Water Treatment Plant Surge System Construction Management Services**

Move City Council award Professional Services Agreement No. WA1903.451 and WA1908.451, to Wilson Engineers, LLC, for the Arrowhead Water Production Facility Rehabilitation and Pecos Surface Water Treatment Plant Surge System Construction Management Services, in an amount not to exceed $623,308.

Council Focus Area(s): 

30. **Purchase of Traffic Signal Maintenance Services from Roadway Electric, LLC**

Move City Council approve the purchase of traffic signal maintenance services from Roadway Electric, LLC, utilizing City of Mesa Contract No. 2017135, in an amount not to exceed $501,600, for the period of May 1, 2021, through April 30, 2022.

Council Focus Area(s): 

31. **Purchase of Pole Painting Services from OLS Restoration, Inc.**

Move City Council approve the purchase of pole painting services from OLS Restoration, Inc., utilizing City of Mesa Contract No. 2019012, in an amount not to exceed $120,000, for the period of May 1, 2021, through April 30, 2022.

Council Focus Area(s): 

32. **Professional Services Agreement No. WA1903.271, with Wilson Engineers, LLC, for the Arrowhead Water Production Facility Rehabilitation Post Design Services**

Move City Council award Professional Services Agreement No. WA1903.271, to Wilson Engineers, LLC, for the Arrowhead Water Production Facility Rehabilitation Post Design Services, in an amount not to exceed $198,222.

Council Focus Area(s): 

33. **Professional Services Agreement No. WA1908.271, with Black & Veatch Corporation, for the Pecos Surface Water Treatment Plant Surge System Post Design Services**

Move City Council award Professional Services Agreement No. WA1908.271, to Black & Veatch Corporation, for the Pecos Surface Water Treatment Plant Surge System Post Design Services, in an amount not to exceed $104,890.

Council Focus Area(s): 

34. **Professional Services Agreement No. ST2004.451, Amendment No. 1, with Ritoch-Powell & Associates Consulting Engineers, Inc., for the Alma School Road Improvements (Pecos Road to Germann Road)**

Move City Council award Professional Services Agreement No. ST2004.451, Amendment No. 1, to Ritoch-Powell & Associates Consulting Engineers, Inc., for the Alma School Road Improvements (Pecos Road to Germann Road), in the amount of $168,553, for a revised contract amount not to exceed $468,487.

Council Focus Area(s): 

35. **Construction Management at Risk Contract No. ST2004.401, Change Order No. 2, with Sunland Asphalt & Construction, Inc., for the Alma School Road Improvements**

Move City Council award Construction Management at Risk Contract No. ST2004.401, Change Order No. 2, to Sunland Asphalt & Construction, Inc., for the Alma School Road Improvements (Pecos Road to Germann Road), in the amount of $1,981,059, for a revised contract amount not to exceed $6,365,059.

Council Focus Area(s): 

36. **Agreement No. 4302, with KUV Consultants, LLC, for a Security and Emergency Preparedness Program**

Move City Council approve Agreement No. 4302, with KUV Consultants, LLC, for a security and emergency preparedness program, in an amount not to exceed $550,000, for a five-year term, July 1, 2021, through June 30, 2026.

Council Focus Area(s): 

37. **Sole Source Purchase of Blower Repair Services, Parts, and Equipment from Houston Service Industries**

Move City Council approve the sole source purchase of Houston Service Industries (HSI) blower repair services, parts, and equipment, from Atlas Copco Power Technique North America, LLC, in an amount not to exceed $190,000.

Council Focus Area(s): 

Action

38. **Agreement No. PD5-961-3521, Amendment No. 1, with American Traffic Solutions Inc., dba Verra Mobility, for Photo Enforcement**

Move City Council approve Agreement No. PD5-961-3521, Amendment No. 1, with American Traffic Solutions, Inc., dba Verra Mobility, for photo enforcement, in a combined amount not to exceed $2,500,000, for the period of five years beginning April 1, 2021 through March 31, 2026.

Council Focus Area(s): 

Adjourn

CHANDLER arizona
Community of Innovation

City Council Memorandum **Airport Memo No.** CP21-084

Date: April 19, 2021

To: Mayor and Council

Thru: Joshua H. Wright, Acting City Manager
Steven Turner, Assistant to the City Manager/Acting Airport Manager
Chris Andres, Airport Planning Administrator
Andrew Goh, Capital Projects Manager

From: Hafiz Noor, Engineering Project Manager

Subject: Construction Contract No. AI2002.401 with Sunland Asphalt & Construction, LLC, for Taxiway C Rehabilitation

---

Proposed Motion:

Move City Council award Contract No. AI2002.401 to Sunland Asphalt & Construction, LLC, for Taxiway C Rehabilitation, in an amount not to exceed $799,799.

Background/Discussion:

On December 12, 2019, City Council authorized a grant agreement with the Arizona Department of Transportation (ADOT) for the rehabilitation of Taxiway C at the Chandler Municipal Airport. Taxiway C is the southernmost taxiway and is parallel to the south runway. It is experiencing shrinkage, block cracking and oxidation throughout the pavement. This cracking indicates the pavement has exceeded its useful life and, in 2017, the pavement was rated by ADOT with a Pavement Condition Index (PCI) rating of 52. The last pavement rehabilitation was a mill and overlay completed in June 1992. The project area is approximately 5,100 feet by 60 feet and includes the entire length between taxiways H and Q and portions of connector taxiways H, L, N, P and Q.

The project scope of work consists of a 3-inch asphalt concrete mill and overlay with geotextile fabric for the entire length of Taxiway C between connector Taxiways H and Q. The project also provides a seal coat application for the existing taxiway shoulders and portions of connector Taxiways H, L, N, P and Q, along with new taxiway pavement markings that meet FAA standards. The contract completion time is 37 calendar days following Notice to Proceed.

Evaluation:

Four (4) bids were opened on March, 4, 2021. The bid results were as follows:

Contractor	Bid Total
Sunland Asphalt & Construction, LLC	$799,799.00
Nesbitt Contracting, Inc.	$876,014.80
Combs Construction	$884,382.32
J Banicki Construction, Inc.	$1,363,575.48

Financial Implications:

90% of project costs ($719,819) will be provided by a grant from the Arizona Department of Transportation. The remaining 10% of project costs ($79,980) will be provided by the City.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
417.4110.6910.6AI727	Capital Grants	Taxiway C Rehabilitation	$719,819.10	Y
635.4110.6910.6AI727	Airport Operating	Taxiway C Rehabilitation	$79,979.90	Y

Attachments

Construction Contract Sunland
Location Map

CHANDLER arizona
Community of Innovation

CITY OF CHANDLER, ARIZONA
PUBLIC WORKS & UTILITIES DEPARTMENT
CAPITAL PROJECTS DIVISION

CONSTRUCTION CONTRACT

TAXIWAY C REHABILITATION

CITY PROJECT NO.: AI2002.401

MAYOR
Kevin Hartke

VICE MAYOR
Mark Stewart

COUNCIL
Matt Orlando **OD Harris**
Christine Ellis **René Lopez** **Terry Roe**

Andrew Goh, P.E.
CIP City Engineer

CITY OF CHANDLER, ARIZONA

TAXIWAY C REHABILITATION

CITY PROJECT NO.: AI2002.401

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EXHIBIT A – PROJECT SPECIFIC SPECIAL PROVISIONS SP-1
EXHIBIT B – GENERAL CONDITIONS GC-1
EXHIBIT C – TECHNICAL SPECIFICATIONS TS-1
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EXHIBIT E – FEDERAL PROVISIONS (IF APPLICABLE) FP-1

CONSTRUCTION SERVICES CONTRACT
PROJECT NO.: AI2002.401

THIS CONTRACT is made and entered into on the _____ day of _____, 2021 by and between City of Chandler, an Arizona municipal corporation, hereinafter called "City" and the "Contractor" designated below (City and Contractor may individually be referred to as "Party" and collectively referred to as "Parties").

City and Contractor agree as follows:

ARTICLE 1 - PARTICIPANTS AND PROJECT

CITY: **City of Chandler**
CIP City Engineer: Andrew Goh
Phone: 480-782-3343
Email: andrew.goh@chandleraz.gov

CITY: **City of Chandler**
Construction Project Manager: Paul Ahlas
Phone: 480-782-3328
Email: paul.ahlas@chandleraz.gov

CONTRACTOR: **Sunland Asphalt & Construction, LLC**
775 W. Elwood Street, Phoenix, AZ 85041
Arizona ROC No.: 111922
Federal Tax ID No.: 86-0455988
Business Organization: limited liability company
State Where Organized: Arizona
Contractor Representative: Mr. Alex DeClusin
Phone: 602-323-2800
Email: alexd@sunlandasphalt.com

DESIGN PROFESSIONAL: **Dibble Engineering**
7878 North 16th St., Ste. 300
Design Professional Representative: Mr. Ryan Toner
Phone: 602-957-1155
Email: Ryan.toner@dibblecorp.com

PROJECT DESCRIPTION:

The Taxiway C Rehabilitation project includes a 3-inch asphalt concrete mill and overlay with geotextile fabric for the entire length of Taxiway C between connector Taxiways H and Q. The project also provides a seal coat application for the existing taxiway shoulders and portions of connector Taxiways H, L, N, P and Q, along with new taxiway pavement markings that meet FAA standards.

PROJECT LOCATION:

CHANDLER MUNICIPAL AIRPORT, 2380 S STINSON WAY CHANDLER, AZ 85286

ARTICLE 2 - CONTRACT DOCUMENTS

2.1 CONTRACT DOCUMENTS

The Contract between City and Contractor will consist of the following Contract Documents:

1. This Construction Services Contract and all of its Exhibits, including Project Plans and Technical Specifications.
2. General Conditions and General Conditions Appendices, incorporated by reference.
3. Project Specific Special Provisions as set forth in Exhibit A, incorporated by reference.
4. Project Bid Proposal.

2.2 In the event of any inconsistency, conflict, or ambiguity between or among the Contract Documents, the Contract Documents will take precedence as described in Section 14.1.4 of the General Conditions.

2.3 DEFINITIONS

The definitions in Section 2 of the General Conditions apply to all the Contract Documents, including this Agreement. Additional definitions or defined terms applicable to all the Contract Documents for this Project, if any, include the following:

n/a

ARTICLE 3 - CONSTRUCTION SERVICES

3.1 GENERAL

3.1.1 Scope of Work. All terms and conditions are set forth in the Contract. Any terms and conditions and exceptions noted in the Contractor's proposal or other documents do not apply unless agreed to in this Contract or an approved addendum.

3.1.2 Contractor agrees this is a Unit Price Contract. Contractor agrees at its own cost and expense, to do all Work necessary required to fully, timely and properly complete the construction of the Project in strict accordance with the Contract Documents in a good and workmanlike manner, free and clear of all claims, liens, and charges whatsoever, in the manner and under the conditions specified, within the Contract time.

3.1.3 Contractor must provide all of the labor and materials, and perform the Work in accordance with Section 4 of the General Conditions. Some, but not all, of the major

components of the Construction Services and the corresponding subsections of Section 4 of the General Conditions are set forth below.

3.1.4 At all times relevant to this Contract and performance of the Work, the Contactor must fully comply with all Laws, Regulations, or Legal Requirements applicable to City, the Project and the Contract, including, without limitation, those set forth on attached Exhibit A.

3.1.5 Contractor must perform the Work under this Contract using only those firms, team members and individuals designated by Contractor consistent with Contractor's accepted Bid, or otherwise, approved by City pursuant to the General Conditions. No other entities or individuals may be used without the prior written approval of the Project Manager.

3.1.6 Contractor must comply with all terms and conditions of the General Conditions.

3.1.7 In the event of a conflict between this Contract and the General Conditions or an exhibit hereto or appendix thereto, the terms of this Contract will control.

3.1.8 Ownership of Work Product. Notwithstanding anything to the contrary in this Contract, all Work Product prepared or otherwise created in connection with the performance of this Contract, including the Work, are to be and remain the property of City. For purposes of this provision, "Work Product" will include all designs, drawings, plans, specifications, ideas, renderings and other information or matter, in whatever form created (e.g., electronic or printed) and in all media now known or hereinafter created. All Work Product will be considered Work Made for Hire as defined in the United States Copyright Act 17 U.S.C. § 101 (Copyright Act). If for any reason, any such Work is found not to be a Work Made for Hire, Contractor hereby transfers and assigns ownership of the copyright in such Work to City. The rights in this Section are exclusive to City in perpetuity.

3.2 CONTRACTOR'S PRE-CONTRACT AND PRE-WORK DELIVERABLES

3.2.1 The Contractor must provide the Deliverables in accordance with Section 4.2 of the General Conditions.

3.2.2 Any additional items which Contractor must deliver to City prior to commencing the Work on this Project, if any, include the following:

n/a

3.3 PRE-CONSTRUCTION CONFERENCE

Contractor must attend the Pre-Construction Conference in accordance with Section 4.3 of the General Conditions.

3.4 **PERFORMANCE OF THE WORK (INCLUDING FIELD MEASUREMENTS, SUBCONTRACTORS, AND SUPPLIERS)**

Contractor must perform the Work in accordance with Section 4.4 of the General Conditions.

3.5 **CONTROL OF THE PROJECT SITE**

Contractor must control and maintain the Project Site in accordance with Section 4.5 of the General Conditions.

3.6 **PROJECT SAFETY**

Contractor must implement and enforce Project safety in accordance with Section 4.6 of the General Conditions.

3.7 **MATERIALS QUALITY, SUBSTITUTIONS AND SHOP DRAWINGS**

Contractor must provide materials testing and submit substitute materials and Shop Drawings in accordance with Section 4.7 of the General Conditions.

3.8 **PROJECT RECORD DOCUMENTS**

Contractor must maintain and make available the Project Record Documents in accordance with Section 4.8 of the General Conditions.

3.9 **WARRANTY AND CORRECTION OF DEFECTIVE WORK**

Contractor must provide warranties and correct defective Work in accordance with Section 4.9 of the General Conditions.

ARTICLE 4 - CITY RESPONSIBILITIES

4.1 City will have the responsibilities, and provide the information specified in, and subject to the conditions set forth in, Section 5 of the General Conditions.

4.2 Additional services to be provided or responsibilities assumed, by City, if any, are listed below:

n/a

4.3 Additional information to be provided by City, if any, is listed below:

n/a

ARTICLE 5 - CONTRACT TIME

5.1 **GENERAL**

5.1.1 The total Contract Duration is **37** Calendar Days (including Substantial Completion by **30** Calendars Days and Final Acceptance by **7** Calendar Days).

5.1.2 The Contract Time will start with the Notice to Proceed (NTP) and end with Final Acceptance, as set forth in Article 5.4 below.

5.1.3 The Contract Time will be as set forth in the Project Schedule. Contractor agrees that it will commence performance of the Work and complete the Project through Final Acceptance within the Contract Time.

5.1.4 Time is of the essence of this Contract for the Project, and for each phase and designated Milestone thereof.

5.1.5 Failure on the part of Contractor to adhere to the approved Project Schedule will be deemed a material breach and sufficient grounds for termination of this Contract by City.

5.2 PROJECT SCHEDULE

5.2.1 The Project Schedule will be updated and maintained throughout Contractor's performance under this Contract in accordance with Section 6.2 of the General Conditions.

5.2.2 Work must be completed to meet the following milestones after the Notice to Proceed:

	Milestone		Time	Liquidated damages for delay	
1.	n/a	within	days	$	per calendar day

5.3 SUBSTANTIAL COMPLETION

Substantial Completion must be achieved no later than the Substantial Completion Date set forth in the Project Schedule. Substantial Completion will be determined in accordance with Section 6.3 of the General Conditions.

5.4 FINAL ACCEPTANCE

5.4.1 Final Acceptance will be obtained within the time period set forth in the Project Schedule.

5.4.2 Final Acceptance will be issued pursuant to Section 6.5 of the General Conditions.

5.5 LIQUIDATED DAMAGES

5.5.1 Substantial Completion Liquidated Damages. Contractor acknowledges and agrees that if Contractor fails to obtain Substantial Completion of the Work within the Contract Time, City will sustain extensive damages and serious loss as a result of such failure. The exact amount of such damages will be extremely difficult to ascertain. Therefore, City and Contractor agree that if Contractor fails to achieve Substantial Completion of the Work within the Contract Time, City will be entitled to retain or recover from Contractor, as liquidated damages and not as a penalty, the sum per calendar day as indicated in MAG § 108.9.

5.5.2 Final Acceptance Liquidated Damages. For the same reasons set forth in Article 5.5.1 above, City and Contractor further agree that if Contractor fails to achieve Final Acceptance of the Work within the Contract Time, City will be entitled to retain or recover from Contractor, as liquidated damages and not as a penalty, the sum per calendar day as indicated in MAG § 108.9 commencing from the actual date of Substantial Completion or Final Acceptance as required under the Contract.

5.5.3 MAG Liquidated Damages. Liquidated damages provisions in MAG § 108.9 will apply.

5.5.4 City may deduct liquidated damages described in this Article 5.5 from any unpaid amounts then or thereafter due Contractor under this Agreement. Any liquidated damages not so deducted from any unpaid amounts due Contractor will be payable to City at the demand of City, together with interest from the date of the demand at the highest lawful rate of interest payable by Contractor.

5.6 MUTUAL WAIVER OF CONSEQUENTIAL DAMAGES ONLY

5.6.1 Contractor and City waive claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes.

1. Damages incurred by City for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

2. Damages incurred by Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

5.6.2 This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination of this Contract. Nothing contained in this Article 5.6 will be deemed to preclude an award of liquidated damages, when applicable, in accordance with Article 5.5 above.

5.6.3 Nothing herein will be deemed to constitute a waiver of any other remedy available to City in the event of Contractor's default under this Contract prior to full performance of the Work including, as applicable, specific performance or completion of the Work on behalf of Contractor, the cost and expense of which will be offset against any monies then or thereafter due to Contractor (if any) and otherwise immediately reimbursed to City by Contractor.

ARTICLE 6 - CONTRACT PRICE

6.1 CONTRACT PRICE

6.1.1 In exchange for Contractor's full, timely, and acceptable performances and construction of the Work under this Contract, and subject to all of the terms of this Contract, City will pay Contractor the "Contract Price," which is **$799,799**.

6.1.2 The Contract Price is all-inclusive and specifically includes all fees, cost, insurance and bond premiums, and taxes of any type necessary to fully, properly and timely perform and construct Work.

6.2 COSTS

For any portion of the Work which, either through this Contract, Change Order or otherwise, is performed and paid for on a cost, or time and materials basis, the costs which may be reimbursed to Contractor and chargeable against the Contract Price will be determined as set forth in MAG § 109.5.

ARTICLE 7 - PAYMENT

Payments will be made to Contractor in accordance with Section 8 of the General Conditions.

ARTICLE 8 - CHANGES TO THE CONTRACT

Changes to the Contract may be made in strict accordance with Section 9 of the General Conditions.

ARTICLE 9 - SUSPENSION AND TERMINATION

This Contract may be suspended or terminated in accordance with Section 10 of the General Conditions.

ARTICLE 10 - INSURANCE AND BONDS

10.1 Contractor must provide insurance in accordance with Sections 11.1 through 11.3 of the General Conditions. Contractor must provide proof of such insurance and all

required endorsements in forms acceptable to City prior to commencing any Work under this Contract.

10.2 Contractor must provide performance and payment bonds to City in Accordance with Section 11.4 of the General Conditions and A.R.S. § 34-222.

10.3 Failure to provide proof of insurance and the required endorsements, or the required bonds, in forms acceptable to City, will be a material breach and grounds for termination for cause of this Contract.

ARTICLE 11 - INDEMNIFICATION

Contractor must have and assume the indemnity obligations set forth in Section 12 of the General Conditions.

ARTICLE 12 - DISPUTE RESOLUTION

Any claims or disputes relating to this Contract will be resolved according to the dispute resolution process set forth in Section 13 of, and Appendix 6 to, the General Conditions.

SIGNATURE PAGE TO FOLLOW

IN WITNESS WHEREOF, the Parties hereto have executed this Contract through their duly authorized representatives and bind their respective entitles as of the effective date.

"CITY"
CITY OF CHANDLER

MAYOR Date

Recommended By:

Andrew Goh, P.E. Date
CIP City Engineer

APPROVED AS TO FORM:

City Attorney

ATTEST:

City Clerk Seal

"CONTRACTOR"
Sunland Asphalt & Construction, LLC

3/12/2021
Signature Date

Alex DeClusin
Name

Vice President
Title

ATTEST: If Corporation

N/A
Secretary

SUNLAND ASPHALT CORPORATE SEAL JANUARY 25, 1983 ARIZONA

STATE OF ARIZONA)
)ss.
County of Maricopa)

SUBSCRIBED AND SWORN TO before me, the undersigned notary public, by Alex DeClusin who was identified as the Vice President of Sunland Asphalt & Construction, LLC on this 12th day of March, 20 21.

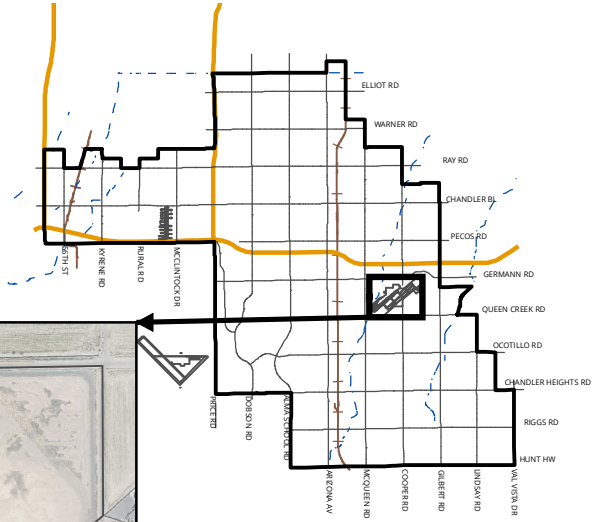
My commission expires:
August 27, 2022

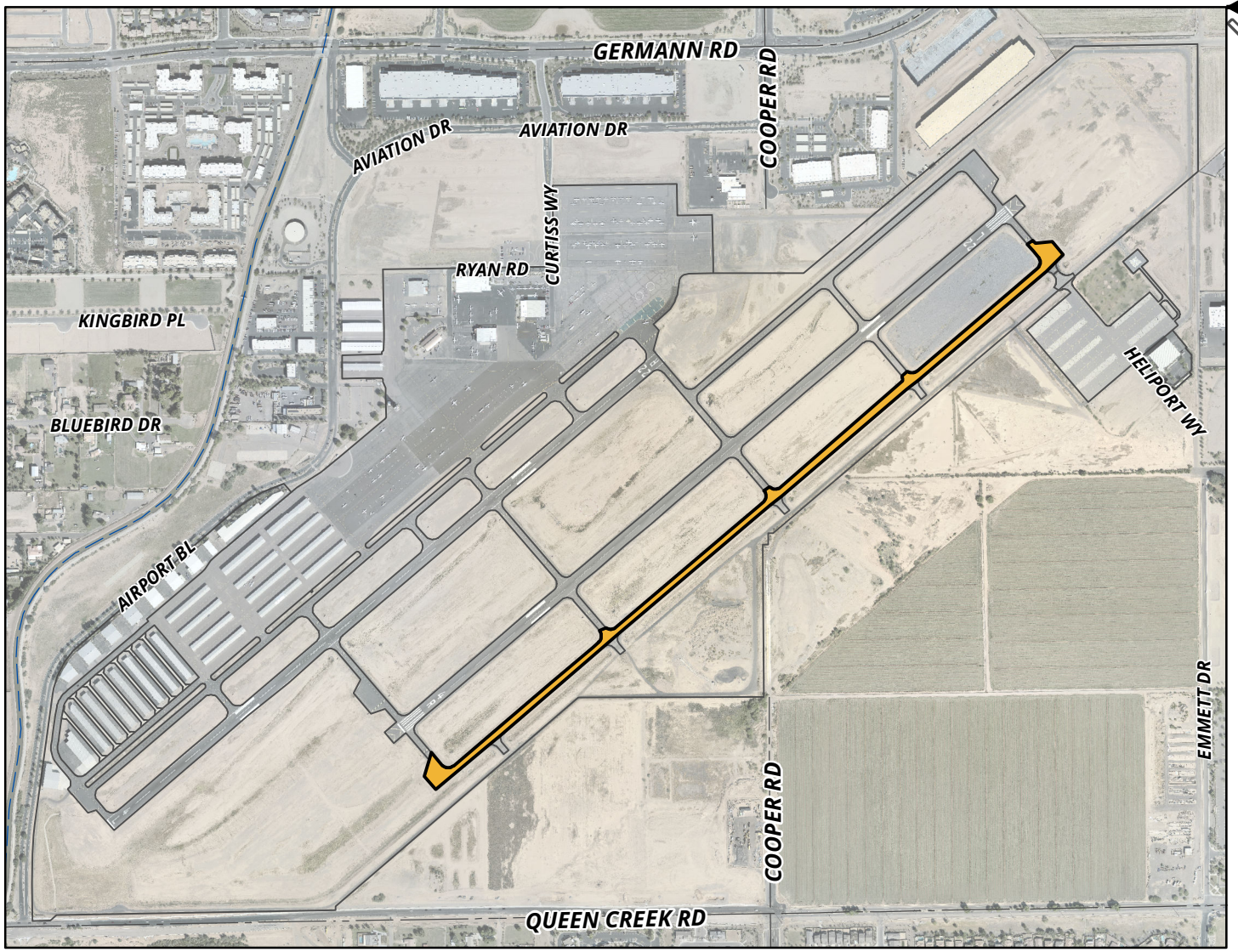
Stephanie McLaughlin
Notary Public

STEPHANIE MCLAUGHLIN
Notary Public - Arizona
Maricopa County
My Commission Expires
August 27, 2022
Commission # 552178

CHANDLER arizona

TAXIWAY C REHABILITATION
PROJECT NO. AI2002.401





MEMO NO. CP21-084

PROJECT SITE

NTS

ChanGIS

F:\ENGINEER\GENSERV_ArcMap_Shared\Map Requests\Capital Projects\CP21-084 TAXIWAY C REHABILITATION\CP21-084.mxd 1/25/2021 MARICELAH

ITEM 2

CHANDLER arizona
Community of Innovation

City Council Memorandum **Airport Memo No.** CP21-111

Date: April 19, 2021

To: Mayor and Council

Thru: Joshua H. Wright, Acting City Manager
Steven Turner, Assistant to the City Manager/Acting Airport Manager
Chris Andres, Airport Planning Administrator
Andrew Goh, Capital Projects Manager

From: Hafiz Noor, Engineering Project Manager

Subject: Project Agreement No. AI2101.401 with SDB, Inc., Pursuant to Job Order Contract No. JOC1912.401, for Airport Plumbing Renovation

---

Proposed Motion:

Move City Council Award Project Agreement No. AI2101.401 to SDB, Inc., Pursant to Job Order Contract No. JOC1912.401, for Airport Plumbing Renovation, in an amount not to exceed $105,446.49.

Background/Discussion:

The Airport Terminal Building is located at 2380 South Stinson Way on the north side of the Chandler Municipal Airport. The existing sewer lines serving the facility have settled to a flat grade and, in certain sections, are partially collapsed and cause frequent backups. The condition of this aging infrastructure causes frequent plumbing service call-outs for line purging.

The project scope of work consists of design and installation of a new 8" PVC sewer main from the Airport Terminal Building to an existing sewer main nearby, as well as installation of a touchless water fountain, tile and drywall restoration, asphalt patch and repair, and camera of the existing plumbing system to determine the condition. The contract completion time is 120 calendar days following Notice to Proceed.

Evaluation:

The selection process was conducted in accordance with City policy and procedure and State law. The costs proposed for this project have been evaluated by staff and determined to be reasonable.

Financial Implications:

This project will reduce costs related to building plumbing maintenance, including the frequency and extent of service call-outs.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N

635.4110.6210.6AI745	Airport Operating	Airport Plumbing Renovation	$105,446.49	Y

Attachments

AI2101.401 Initialed Contract
Location Map

CITY OF CHANDLER
JOB ORDER PROJECT AGREEMENT

Project Name: **AIRPORT PLUMBING RENOVATION**

Project No. **AI2101.401**

This JOB ORDER PROJECT AGREEMENT ("Job Order") is made this _____ day of _____ 2021 ("Effective Date"), by and between the City of Chandler, an Arizona municipal corporation, ("City") and **SDB, Inc.**, an Arizona corporation, ("JOC Contractor") and is entered into pursuant to Job Order Master Agreement No. JOC1912.401 ("JOC Master Agreement"). City and JOC Contractor may be referred to individually as "Party" or collectively as "Parties").

City and JOC Contractor, in consideration of the mutual covenants herein set forth, agree as follows:

RECITALS

A. On or about January 28, 2020, the Parties entered into the JOC Master Agreement, which terms and conditions are made a part of and incorporated into this Job Order Project Agreement by this reference.

B. City proposes to engage JOC Contractor to renovate Airport terminal building sewer lines, re-routing, design and construction as more fully described in **Exhibit "A"**, which is attached to and made a part of this Job Order by this reference.

C. JOC Contractor is ready, willing, and able to provide the services described in **Exhibit "A"** for the compensation and fees set forth and as described in **Exhibit "B"**, which is attached to and made a part of this Agreement by this reference.

ARTICLE 1. DESCRIPTION OF WORK

The Parties enter into this Job Order Project Agreement for the **AIRPORT PLUMBING RENOVATION**, Project Number **AI2101.401**. The scope of work consists of renovating the Airport plumbing, all as more particularly set forth in **Exhibit "A"** attached hereto and incorporated herein by reference.

The JOC Contractor will not accept any change of scope, or change in contract provisions, unless issued in writing, as a contract amendment or change order and signed by the authorized signatories for each party.

Performance and Payment Bonds, as set forth in **Exhibit "C"** and **Exhibit "D"** respectively attached hereto and incorporated herein by reference, will be due prior to execution of each Job Order Project Agreement in the full amount of each Job Order.

At project completion, JOC Contractor must complete Contractor's Affidavit Regarding Settlement of Claims and Certificate of Completion, as set forth in **Exhibit "E"** and **Exhibit "F"** respectively attached hereto and incorporated herein by reference.

ARTICLE 2. PROJECT PRICE

City will pay JOC Contractor for completion of the Work in accordance with the JOC Master Agreement a fee not to exceed the Guaranteed Maximum Price of **$105,446.49** Dollars determined and payable as set forth in JOC Master Agreement and **Exhibit "B"** attached hereto and made a part hereof by reference.

ARTICLE 3. CONTRACT TIME & SCHEDULE

JOC Contractor agrees to complete all Construction within **120** calendar days from the Notice to Proceed (NTP) Date.

ARTICLE 4. PARTICIPANTS

CITY:	Project Manager: Hafiz Noor	
	Phone:	480-782-3324
	Email:	Hafiz.noor@chandleraz.gov
JOC CONTRACTOR:	SDB, Inc.	
	1001 S. Edward Dr. Tempe, AZ 85281	
	JOC Contractor Representative: Craig Schmidt	
	Phone:	480-967-5810 x243
	Email:	Craig.schmidt@sdb.com

SIGNATURE PAGE TO FOLLOW

IN WITNESS WHEREOF, the Parties have executed this Job Order as of the Effective Date.

"CITY"
CITY OF CHANDLER:

MAYOR Date

Recommended By:

Andrew Goh, P.E.
CIP City Engineer

APPROVED AS TO FORM:

City Attorney

By: MW3

ATTEST:

City Clerk SEAL

ADDRESS FOR NOTICE
City of Chandler
P.O. Box 4008, Mail Stop 407
Chandler, AZ 85244-4008

"JOC CONTRACTOR"
SDB, Inc.:

Signature Date

Print Name

Title

ATTEST: If Corporation

Secretary

ADDRESS FOR NOTICE

SDB, Inc.

1001 S. Edward Dr.

Tempe, AZ 85281

EXHIBIT A
SCOPE OF WORK

SDB, Inc.
1001 S Edward Drive
Tempe, AZ 85281
(480) 967-5810 Fax (480) 967-5841

PROPOSAL

Attachment "A"

CUSTOMER:	**City of Chandler**	BID DATE:	**1/20/2021**
ADDRESS:	250 E Chicago Street	PROPOSAL NO.:	20-14-0001
	Chandler AZ 85225	PROPOSAL TYPE.:	**LS**
JOB DESC.:	**Airport Sewer Replacement**		0
CONTACT:	Hafiz Noor		
Via email:	hafiz.noor@chandleraz.gov		

Scope of Work: The proposed work includes work to be performed per the scope below for the project known as Airport Sewer Replacement located at 2380 S Stinson Way, Chandler, AZ 85286.

1 Proposal is based on information provided by and walkthrough with owner.
2 Includes technical site review, final design, civil improvement permit, and engineering construction services.
3 Includes due diligence, civil design and documents, plumbing design and documents.
4 Remove concrete, tile, asphalt, and landscaping in order to install new sewer from restrooms to street main.
5 Cut, cap, and abandon sewer in place.
6 Install new 8" PVC sewer main from building to existing sewer main per attached schematic design.
7 Supply and install touchless water fountain per attached spec sheet.
8 Replace approximately 300 square foot of tile at restroom floor, patch and repair all drywall. Paint as necessary.
9 Supply trench plates and traffic control as necessary to maintain access to airport terminal.
10 Patch and repair asphalt per City of Chandler specifications.
11 All work to be performed during normal business hours with available access.
12 All sales tax is included.
13 Full time site supervision and associated contract administration is included.

We have attached Exhibit B-1 Fee Schedule and Exhibit B-2 Task - Hourly breakdowns and a milestone schedule for your review.

In submitting this long lead material proposal, we agree:
- To hold the proposal open for thirty (30) days after the date of this proposal.
- To commence with the construction within ten (10) days upon written notice to proceed.
-

To accomplish the work in accordance with the JOC contract documents and the following clarifications, qualifications and exclusions listed below.

Clarifications:

1 All work to be performed on straight time (7:00 am-3:30 pm). Shift work and overtime work excluded.
2 All work will be performed according to the General contractor's safety program.
3 Pricing is based on preliminary design.
4 Contractor to verify design with City of Chandler Engineering and Traffic departments.
5 Owner allowance has been included: **$ 12,000.00** **Allowance includes pricing to add second sewer tie in if necessary.**
6 **Project Duration** **4 Months** **Design and permit 2 months, construction 2 months.**

Exclusions:

1 Any additional scope not stated in the scope above are hereby excluded
2 Any market fluctuations that result in material Increases more than 3%.
3 Allowances unless specifically noted in this proposal.
4 All permits and utility fees.
5 Bonding.
6 Seismic engineering or special support system.
7 Expediting.

Proposed Cost: SDB, Inc hereby proposes to complete the above mentioned project for the lump sum price of: **$ 105,446.49**

EXHIBIT B
FEE SCHEDULE

SDB, Inc.
1001 S Edward Drive
Tempe, AZ 85281
(480) 967-5810 Fax (480) 967-5841

JOC PROPOSAL

CUSTOMER:	**City of Chandler**	BID DATE:	**1/20/2021**
ADDRESS:	250 E Chicago Street	PROPOSAL NO.:	**20-14-0001**
	Chandler AZ 85225	PROPOSAL TYPE.:	**LS**
JOB DESC.:	**Airport Sewer Replacement**		
CONTACT:	Hafiz Noor		

We are pleased to propose the following:

See attachment A

Sub-Total	$	81,546.60
Coefficient	$	9,354.66
Sales Tax Percentage (Current Tax Rate)	$	-
General Liability Insurance Percentage (Actual Cost per Job Order)	$	909.01
Builder's Risk Insurance Percentage (Actual Cost per Job Order)	$	727.21
Payment Bond (Actual Cost per Job Order)	$	454.51
Performance Bond (Actual Cost per Job Order)	$	454.51
Owner Allowance	$	12,000.00
TOTAL	**$**	**105,446.49**

CLARIFICATIONS

1) Work and Installation during normal business hours.
2) Quote good for 30 days
3) **Owner Allowance includes budgetary cost to add second sewer line in the event the existing connections is abandoned.**

EXCLUSIONS

1) Permits, architectural, engineering, drawings, as-builts, special inspections, materials testing. ADA compliance
2) Premium time unless otherwise indicated. Moving/relocating furniture/equipment unless otherwise indicated.
3) Any unforeseen conditions.
4) Any items/work not identified in the attached scope of work .
5)

Thank you,

SDB, Inc.

Lucas Rogers
Prepared by

Reviewed by

Accepted by:

City of Chandler

SDB, Inc.
1001 S Edward Drive, Tempe, AZ 85281
Phone 480-967-5810

City of Chandler - JOC Estimate

Job Name: **Airport Sewer Replacement**
COC Job #:
Location: 2380 S Stinson Way, Chandler, AZ 85286

Date Submitted: **01/20/21**
SDB Est #: **20-14-0001**
SDB Job #: **--**
JOC 1912-401

CSI	Description	Cost
01	Division 1 - General Requirements	$ 28,333.76
02	Division 2 - Existing Conditions	$ 1,578.00
03	Division 3 - Concrete	$ 1,788.89
09	Division 9 - Finishes	$ 5,030.00
22	Division 22 - Plumbing	$ 3,920.00
33	Division 33 - Utilities	$ 40,895.95
01	Owner Allowance - Includes price to add second sewer connection if necessary.	$ 12,000.00

Sub Total		**$ 93,546.60**
Coefficient	**10%**	**$ 9,354.66**
Sales Tax	**MRRA**	**$ -**
General Liability Insurance Percentage (Actual Cost per Job Order)		**$ 909.01**
Builder's Risk Insurance Percentage (Actual Cost per Job Order)		**$ 727.21**
Payment Bond (Actual Cost per Job Order)		**$ 454.51**
Performance Bond (Actual Cost per Job Order)		**$ 454.51**
Owner Contingency		**$ 12,000.00**
Total		**$ 105,446.49**

DIVISION BREAKDOWN

QUAN	CSI	Description	Unit	$ per Unit	Total
	Division 1 - General Requirements				
8.0	01-3105	Project Manager	EA	$ 98.14	$ 785.12
80.0	01-0120	Superintendent	EA	$ 87.39	$ 6,991.20
12.0	01-3125	Project Coordinator/Engineer	EA	$ 52.57	$ 630.84
0.0	01-3130	Foreman	EA	$ 58.24	$ -
40.0	01-3135	Journeyman	EA	$ 54.39	$ 2,175.60
1.0	01-1130	Engineering	EA	$ 15,751.00	$ 15,751.00
12.0	01-3530	Safety	EA	$ 62.50	$ 750.00
0.0	01-7418	Project Housekeeping	Mo	$ 850.00	$ -
1.0	01-9999	Misc. Materials	Mo	$ 1,250.00	$ 1,250.00
1.0	01-2115	Owner Allowance - Includes price to add second sewer connection if necessary.	EA	$ 12,000.00	$ 12,000.00
	Total - Division 1 - General Requirements				**$ 40,333.76**
	Division 2 - Existing Conditions				
1.0		Camera		$ 750.00	$ 750.00
1.0		Concrete Demo		$ 828.00	$ 828.00
	Total - Division 2 - Existing Conditions				**$ 1,578.00**
	Division 3 - Concrete			$ -	
1.0		Pourback		$ 1,788.89	$ 1,788.89
	Total - Division 3 - Concrete				**$ 1,788.89**
	Division 9 - Finishes				
0.0				$ -	$ -
1.0	09-6210	Flooring, Drywall and Paint Touchup	ea	$ 1,880.00	$ 1,880.00
1.0	09-3013	Tile	ea	$ 3,150.00	$ 3,150.00
	Total - Division 9 - Finishes				**$ 5,030.00**
	Division 22 - Plumbing				
1.0	22-0105	Connect existing drains and sewer to new sewer and add fountain.		3,920	$ 3,920.00
	Total - Division 22 - Plumbing				**$ 3,920.00**
	Division 33 - Utilities				
1.0		Run approximately 261 lineal foot of 8" PVC sewer line		$ 40,895.95	$ 40,895.95
0.0				$ -	$ -
0.0					
	Total - Division 33 - Utilities				**$ 40,895.95**

SDB CONTRACTING SERVICES

SDB, Inc.
1001 S Edward Drive, Tempe, AZ 85281
Phone 480-967-5810

City of Chandler - JOC Estimate

Job Name: **Airport Sewer Replacement**
COC Job #:
Location: 2380 S Stinson Way, Chandler, AZ 85286
-

Date Submitted: **01/20/21**
SDB Est #: **20-14-0001**
SDB Job #: **--**
JOC 1912-401

EXHIBIT "B"

JOB ORDER COST PROPOSAL
SUMMARY SHEET

Negotiated Prices			
Price of Subcontractor(s)		$	53,212.84
Price of Subconsultant(s)		$	15,751.00
General Conditions		$	12,582.76
Preconstruction Labor (if applicable)		$	-
Construction Labor (if applicable)		$	-
SUBTOTAL (NEGOTIATED PRICES):		**$**	**81,546.60**
Overhead and Profit (Coefficient per Job Order Master Agreement)	**10.00%**	**$**	**9,354.66**
TOTAL (NEGOTIATED PRICES + OVERHEAD & PROFIT):		**$**	**90,901.26**
Insurance, Bonds, & Taxes			
Sales Tax Percentage (Current Tax Rate) *MRRA*	**0.00%**	$	-
General Liability Insurance Percentage (Actual Cost per Job Order)		$	909.01
Builder's Risk Insurance Percentage (Actual Cost per Job Order)		$	727.21
Payment Bond (Actual Cost per Job Order)		$	454.51
Performance Bond (Actual Cost per Job Order)		$	454.51
SUBTOTAL (INSURANCE, BONDS, & TAXES):		**$**	**2,545.24**
COMBINED TOTAL (TOTAL + INSURANCE, BONDS, & TAXES):		**$**	**93,446.49**
City's Allowance		**$**	**12,000.00**
TOTAL JOB ORDER:		**$**	**105,446.49**

Per the Job Order Master Agreement - This Fee Table includes all fees, costs, insurance and bond premiums, allowances, construction contingency, and taxes of any type necessary to fully, properly and timely perform and construct the Work. Also per the Job Order Master Agreement - For any portion of the Work which, either through this Contract, Change Order or otherwise, is performed and paid for on a cost, or time and materials basis, the costs may be reimbursed to JOC Contractor and chargeable against the Contract Price will be determined as set forth in MAG 109.5.

Exhibit B-2

SDB CONTRACTING SERVICES

1001 S Edward Drive Tempe, AZ 85281

Task No.	Task Description	PM	Super	Journeyman	Apprentice	Safety	PE/PC (Admin)	Total Hrs
		$ 98.14	$ 87.39	$ 54.39	$ 52.47	$ 62.50	$ 52.57	
1	General Requirements	8	80	40	1	12	12	153
2	Existing Conditions	0	0	0	0	0	0	0
3	Concrete	0	0	0	0	0	0	0
4	Steel	0	0	0	0	0	0	0
5	Woods and Plastics	0	0	0	0	0	0	0
6	Thermal & Moisture Protection	0	0	0	0	0	0	0
7	Doors and Windows	0	0	0	0	0	0	0
8	Finishes	0	0	0	0	0	0	0
9	Specialties	0	0	0	0	0	0	0
10	HVAC	0	0	0	0	0	0	0
11	Electrical	0	0	0	0	0	0	0
12		$ 785.12	$ 6,991.20	$ 2,175.60	$ 52.47	$ 750.00	$ 630.84	
		8	80	40	1	12	12	153

ELKAY®
SPECIFICATIONS

Elkay EZH2O Bottle Filling Station Surface Mount Filtered Non-Refrigerated Stainless **Model LZWSSM**

PRODUCT SPECIFICATIONS

Elkay EZH2O® Bottle Filling Station Surface Mount, Filtered Non-Refrigerated Stainless. Features shall include Hands Free, Visual Filter Monitor, Filtered, Green Ticker™, Laminar Flow, Antimicrobial, Real Drain. Electronic Bottle Filler Sensor activation. Product shall be Wall Mount (On Wall), for Indoor applications, serving 1 station(s). Unit shall be certified to UL 399 and CAN/CSA C22.2 No. 120. Unit shall be lead-free design which is certified to NSF/ANSI 61 & 372 (lead free) and meets Federal and State low-lead requirements.

Special Features:	Hands Free, Visual Filter Monitor, Filtered, Green Ticker™, Laminar Flow, Antimicrobial, Real Drain
Finish:	Stainless Steel
Power:	115V/60Hz
Bubbler Style:	No Bubbler
Activation by:	Electronic Bottle Filler Sensor
Mounting Type:	Wall Mount (On Wall)
Chilling Option:	Non-refrigerated
Full Load Amps	1
Rated Watts:	15
Dimensions (L x W x H):	17-15/16" x 8-3/16" x 25-7/16"
Approx. Shipping Weight:	35 lbs.
Installation Location:	Indoor
No. of Stations Served:	1

Special Note: Coming soon: Elkay's ezH2O is getting a new look. The model you receive may have an updated logo, different from what is shown here.

- Visual Filter Monitor: LED Filter Status Indicator for when filter change is necessary.
- Filter is certified to NSF 42 and 53 for lead, particulate, chlorine, taste and odor reduction. 3,000 gal. capacity.
- Green Ticker: Informs user of number of 20 oz. plastic water bottles saved from waste.
- Laminar flow provides clean fill with minimal splash.
- Silver Ion Antimicrobial protection on key plastic components to inhibit the growth of mold and mildew.
- Real Drain System eliminates standing water.



AMERICAN PRIDE. A LIFETIME TRADITION.
Like your family, the Elkay family has values and traditions that endure. For almost a century, Elkay has been a family-owned and operated company, providing thousands of jobs that support our families and communities.

BUILT IN USA OF DOMESTIC AND FOREIGN PARTS

Included with Product: **Bottle Filler, Filter**

PRODUCT COMPLIANCE

ADA & ICC A117.1

Buy American Act

CAN/CSA C22.2 No. 120

GreenSpec®

NSF/ANSI 42, 53, 61, & 372 (lead free)

UL 399

Intertek C US

GreenSpec® LISTED www.GreenSpec.com

Complies with ADA & ICC A117.1 accessibility requirements when installed according to the requirements outlined in these standards. Installation may require additional components and/or construction features to be fully compliant. Consult the local Authority Having Jurisdiction if necessary.

Installation Instructions (PDF)

Electrical components and water system are warranted for 12 months from date of installation. **Warranty pertains to drinking water applications only. Non-drinking water applications are not covered under warranty.**

Warranty (PDF)

OPTIONAL ACCESSORIES

51300C - Elkay WaterSentry Plus Replacement Filter (Bottle Fillers)
ECH8 - Elkay Remote Chiller, Non-Filtered 8 GPH
WSF6000R-2PK - WaterSentry Fresh 6000 CTO Replacement Filter (2pack)

PART:_____QTY: _____

PROJECT:_____

CONTACT:_____

DATE:_____

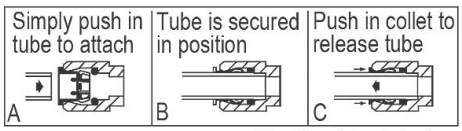
NOTES:_____

APPROVAL:_____

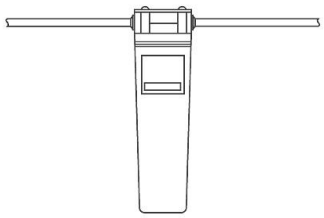
In keeping with our policy of continuing product improvement, Elkay reserves the right to change product specifications without notice. Please visit elkay.com for the most current version of Elkay product specification sheets. This specification describes an Elkay product with design, quality, and functional benefits to the user. When making a comparison of other producers' offerings, be certain these features are not overlooked.

Elkay EZH2O Bottle Filling Station Surface Mount Filtered Non-Refrigerated Stainless
Model LZWSSM

OPERATION OF QUICK CONNECT FITTINGS



Pushing tube in before pulling it out helps to release tube

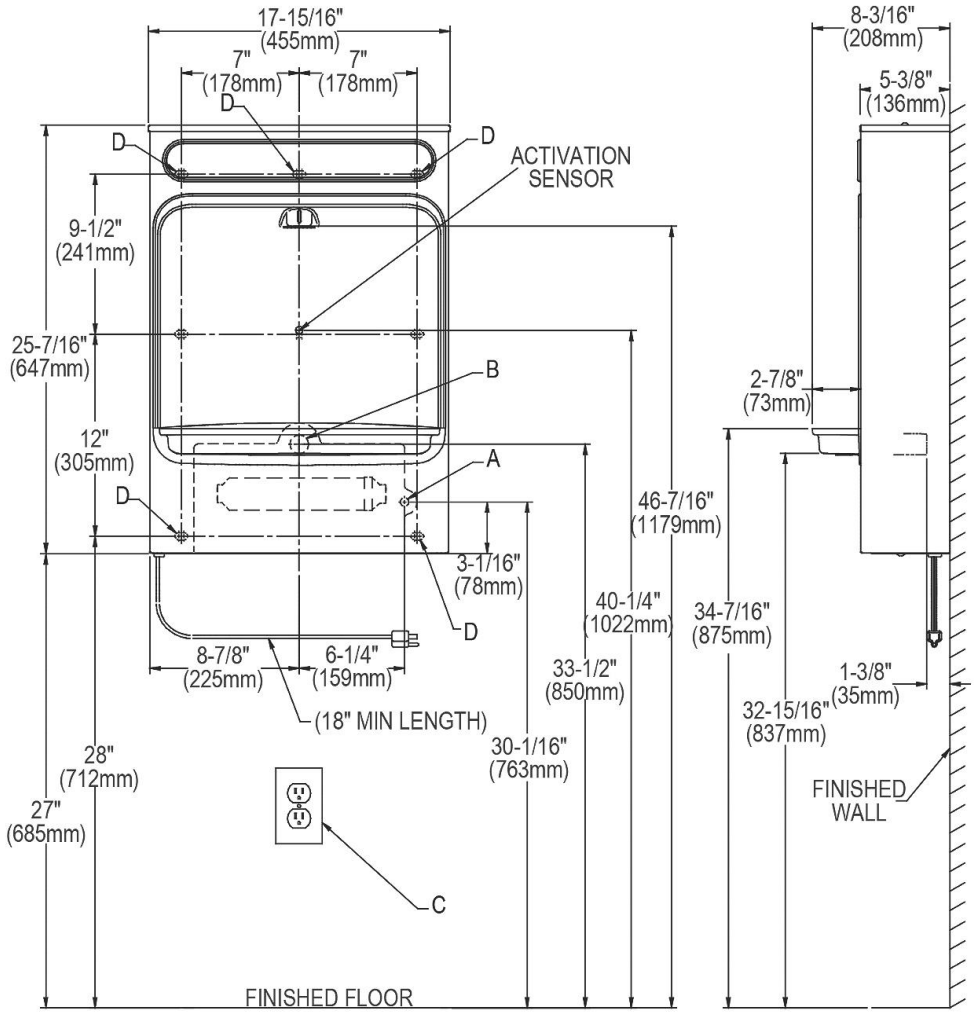


WaterSentry® Plus Filter System

IMPORTANT!
INSTALLATION NOTES :
Ensure wall is structurally sound to bear the loads imparted by the surface mount bottle filler.

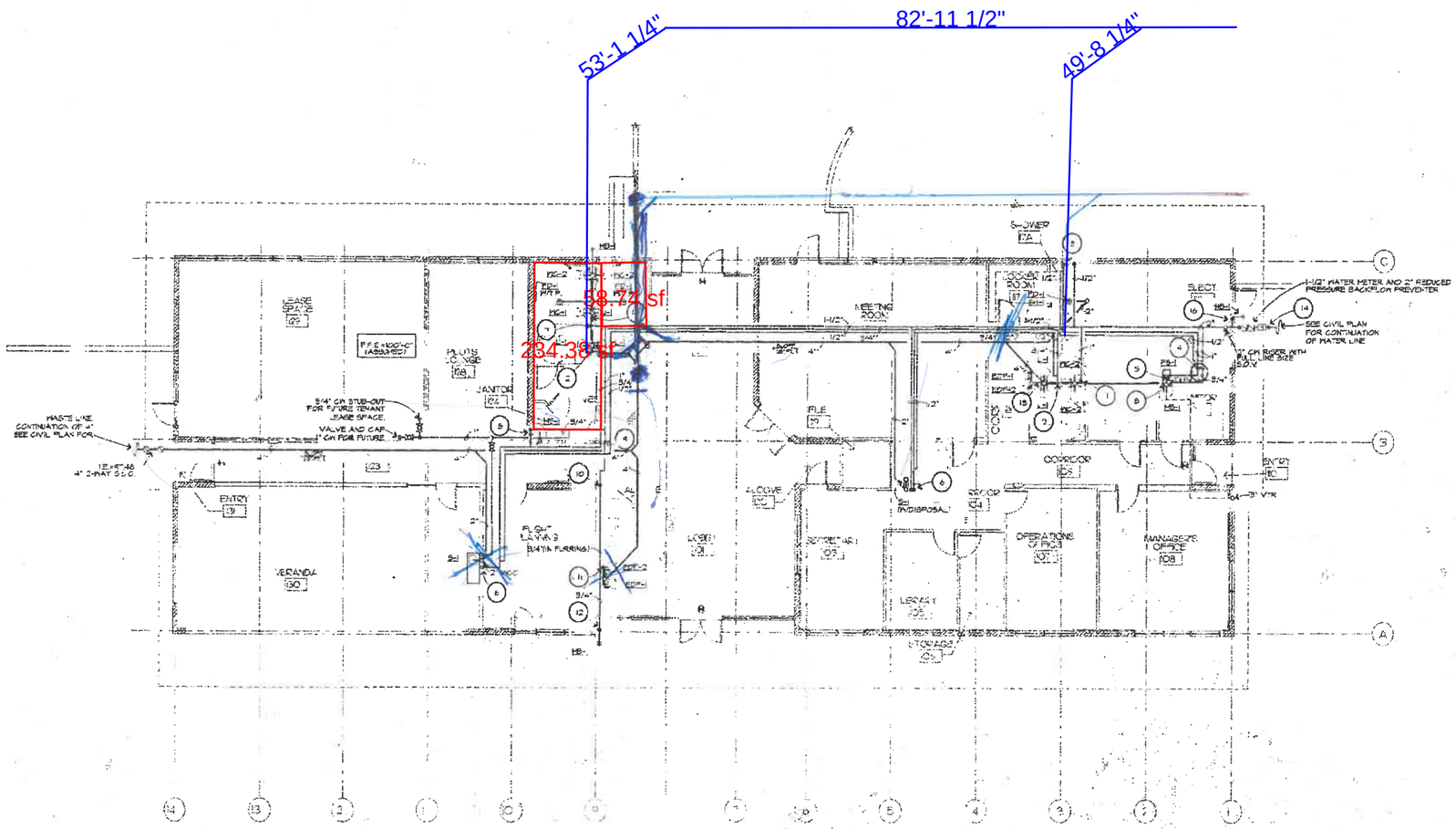
ELECTRICAL
Equipped with electrical cord and three-prong molded rubber plug for use with 15-amp minimum receptacle. Rated at 115V/60Hz, single phase.

These products are designed to operate on 20 psi to 105 psi supply line pressure.



LEGEND :
A = Recommended water supply location; 1/2" I.P.S. maximum pipe size. Service stop valve not furnished.
B = Recommended location for waste outlet 1-1/4" O.D. maximum pipe size.
C = Electrical outlet, three (3) conductor grounded. Locate within safe reach of power cord.
D = 7/16" X 3/4" orbound mounting holes for fastening backplate to wall.
NOTE : New Installations Must Use Ground Fault Circuit Interrupter (GFCI). It is highly recommended that the circuit be dedicated and the load protection be sized for 20 amps.

In keeping with our policy of continuing product improvement, Elkay reserves the right to change product specifications without notice. Please visit elkay.com for the most current version of Elkay product specification sheets. This specification describes an Elkay product with design, quality, and functional benefits to the user. When making a comparison of other producers' offerings, be certain these features are not overlooked.



PLUMBING FLOOR PLAN
SCALE: 1/8"=1'-0"

KEYNOTES:

1. ROUTE 1" CW DOWN IN WALL TO FULL SIZE HEADER SERVING FIXTURES.
2. ROUTE 3/4" HW DOWN IN WALL TO SERVE LAVATORIES.
3. ROUTE 1/2" HW AND CW DOWN IN WALL TO SERVE SHOWER.
4. 1" HW AND CW AND 1/2" HWR DOWN TO WATER HEATER (WH-1). SEE DETAIL ON SHT. P-2.
5. FULL LINE SIZE T AND P RELIEF LINE OVER TO FLOOR SINK AND ELBOW DOWN W/2" AIR GAP.
6. ROUTE 1/2" HW AND CW DOWN IN WALL TO SERVE SINK, S-1.
7. ROUTE 1-1/2" CW DOWN IN WALL TO FULL SIZE HEADER SERVING FIXTURES.
8. ROUTE 3/4" HW AND CW DOWN IN WALL TO SERVE MOP SINK.
9. ROUTE 3/4" CW IN FURRED SPACE OVER TO LOCATION SHOWN.
10. ROUTE 3/4" CW DOWN ALONG SLOPE FROM FURRED SPACE.
11. ROUTE 1/2" CW DOWN IN WALL TO SERVE ELECTRIC DRINKING FOUNTAINS.
12. ROUTE 3/4" CW DOWN IN WALL TO SERVE HOSE BIBB.
13. ROUTE 1/2" CW OVER IN WALL TO SERVE ELECTRIC DRINKING FOUNTAINS.
14. 2" CW DOWN TO UNDER GROUND.
15. INSTALL "WADE" OR APPROVED EQUAL SHOCK ABSORBER ON CW LINE PER MANUFACTURER'S INSTRUCTIONS.
16. ROUTE 3/4" CW OVER IN WALL TO SERVE HOSE BIBB.

* RIGHT SIDE FLUSH HANDLE

Completed
9-96 R.B.

PETERSON ASSOCIATES
CONSULTING ENGINEERS INC.
7227 North 16th Street
Suite #260
Phoenix, Arizona 85020
(602) 443-4[illegible]
Fax (602) 443-2501
Job No. 95637

ALL CONCEPTS, DESIGNS, AND DATA INDICATED ON THESE DOCUMENTS ARE THE SOLE PROPERTY OF THE PETERSON ASSOC. ENGINEERS, INC. AND SHALL NOT BE USED FOR ANY OTHER PURPOSE THAN ORIGINALLY INTENDED WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER.

Revised:
Date: 9-18-95
Drawn By: GJJ
Project: 95637

Cullen / Burr Associates

CHANDLER AIRPORT TERMINAL

PLUMBING FLOOR PLAN

P-1

1 of 2

1-2840

N 11800

N 11600

STA 5+00 MATCHLINE

E 12800

E 13000

E 13200

CONSTRUCTION NOTES

1. CONSTRUCT AC PAVEMENT FOR APRON PER SECTION ON SHEET 5.
2. CONSTRUCT AC PAVEMENT FOR DRIVEWAY PER SECTION ON SHEET 5.
3. CONSTRUCT AC PAVEMENT FOR AUTO PARKING PER SECTION ON SHEET 5.
4. CONSTRUCT SINGLE CURB PER M.A.G. STD. DETAIL 222, TYPE "A".
5. CONSTRUCT EXTRUDED CURB PER DETAIL ON SHEET 5.
6. CONSTRUCT CONCRETE SIDEWALK PER M.A.G. STD. DETAIL 230.
7. CONSTRUCT CONCRETE SCUPPER PER DETAIL ON SHEET 5.
8. CONSTRUCT 6' CHAIN LINK SECURITY FENCE PER M.A.G. STD. DETAIL 160 (NO BARB WIRE).
9. CONSTRUCT 24' DOUBLE SWING GATE IN SECURITY FENCE.
10. CONSTRUCT 3' PEDESTRIAN GATE IN SECURITY FENCE.
11. ADJUST VALVE BOX TO GRADE PER C.O.C. STD DETAIL 51.
12. CONSTRUCT CURB TRANSITION PER DETAIL ON SHEET 5.
13. CONSTRUCT SIDEWALK RAMP PER C.O.C. STD. DETAIL 48.
14. CONSTRUCT 6' CONCRETE VALLEY GUTTER PER DETAIL ON SHEET 5.
15. SAWCUT EXISTING EDGE OF PAVEMENT TO NEAT EDGE FOR PAVEMENT MATCHING.
16. REMOVE EXISTING ASPHALT AND BASE MATERIAL.
17. REMOVE EXISTING AIRCRAFT TIE DOWN ANCHORS.
18. SAWCUT & REMOVE EXISTING VALLEY GUTTER.
19. SAWCUT & REMOVE EXISTING CURB.
20. REMOVE & REINSTALL EXISTING SECURITY FENCE.
21. ADJUST EXISTING ELECTRICAL HANDHOLE TO GRADE.
22. REMOVE, SALVAGE, & REINSTALL EXISTING BUMPER CURBS.
23. REMOVE 1 JOINT OF EXISTING CONCRETE PIPE & PLUG.
24. CONSTRUCT 3' VALLEY GUTTER PER DETAIL ON SHEET 5.
25. CONSTRUCT 6" VERTICAL CURB & GUTTER PER M.A.G. STD. DETAIL 220, TYPE "A".

CHANDLER AVIATION
FF 1232.98

FF 1232.50
PAD 1231.80

STINSON WAY

EX. CONCRETE VALLEY GUTTER

CONNECT TO EXISTING

STA 7+48.17

STA 4+05.77

LIMITS OF ASPHALT RECONSTRUCTION

LIMITS OF ASPHALT CONSTRUCTION

EX 24" RCP

N 00°25'16" E 285.00'

S 89°07'16" W 260.00'

N 89°07'16" E 260.00'

SECTION A-A
HORIZONTAL 1"=20'
VERTICAL 1"=10'

FF 1232.50

AS-BUILT

AS-BUILT

SCALE: 1" = 20'

△REVISED 11-30-95 ADDENDUM NO. 1

GILBERTSON ASSOCIATES, INC.
CONSULTING CIVIL ENGINEERS AND SURVEYORS
23733 N. SCOTTSDALE RD., SUITE B
SCOTTSDALE, ARIZONA 85255
(602) 585-6464

CHANDLER MUNICIPAL AIRPORT

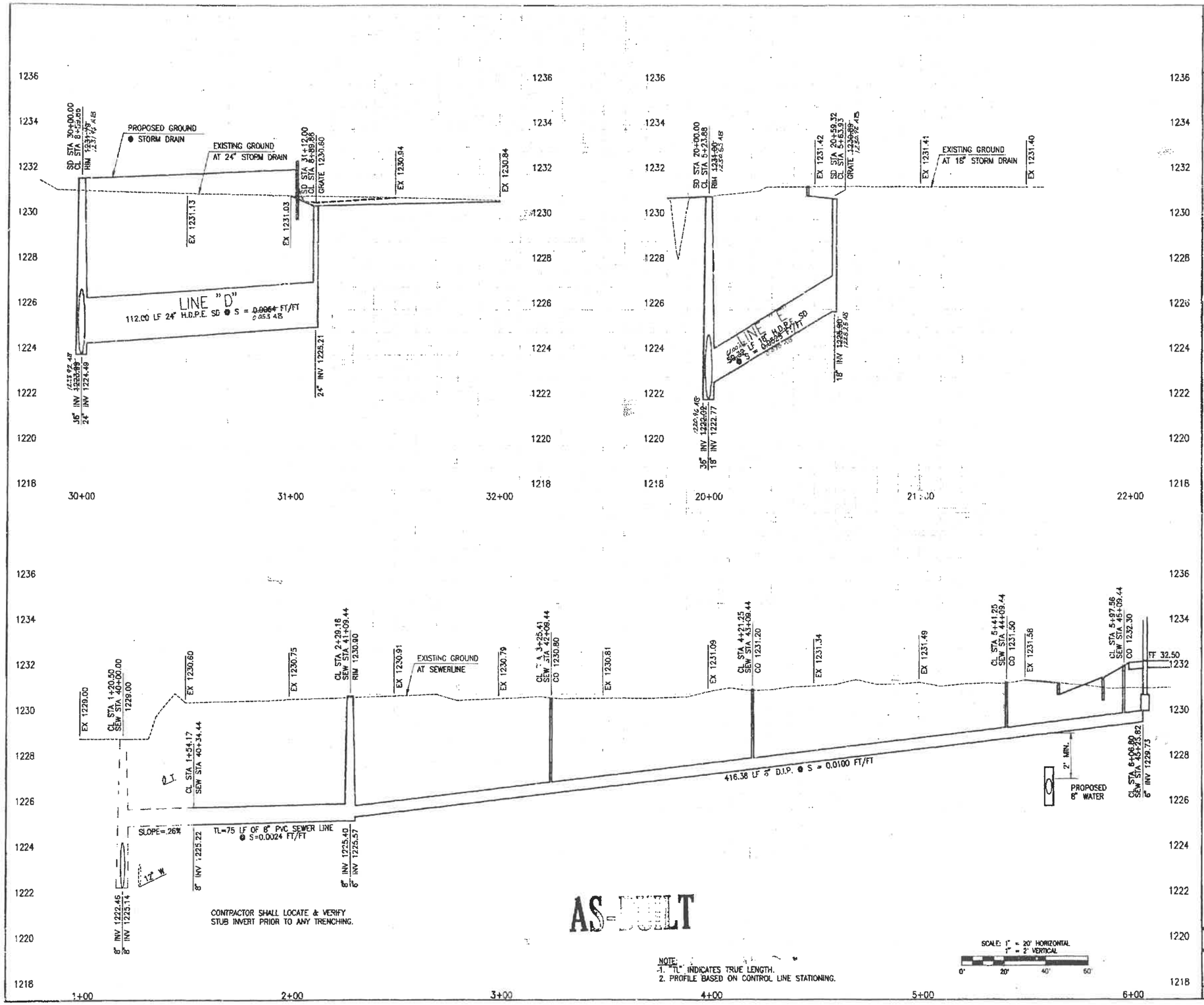
TERMINAL BUILDING
GRADING & PAVING

Date NOVEMBER 30, 1995 | Job No. 32304 | Sheet C7 of 5

49502-401

1-2735

FILE NAME: 49502MG2.DWG
ARCHITECT:
DATE PLOTTED: 11/30/95



GILBERTSON ASSOCIATES, INC.
CONSULTING CIVIL ENGINEERS AND SURVEYORS
23733 N. SCOTTSDALE RD., SUITE B
SCOTTSDALE, ARIZONA 85255
(602) 585-6464

AS-BUILT

10277
DAVID A.
GILBERTSON

CHANDLER MUNICIPAL AIRPORT

STORM DRAIN
AND SEWER PROFILES 10

Date OCTOBER 11,1995 Job No. 32304 Sheet C7 of 7

I-2735

DRAWING NAME: D:\323\0457.DWG
MACHINE NUMBER 12
DATE PLOTTED: 10/11/95

CONSTRUCTION NOTES

SEWER

4 CONSTRUCT 48" DIAMETER MANHOLE PER M.A.G. STD. DETAIL 420-1 WITH 24" RING AND COVER PER C.O.C. STD. DETAILS C-400 AND C-401.

6 INSTALL 4" SDR 35 P.V.C. SEWER SERVICE LINE PER M.A.G. STD. DETAIL 440-1.

14 SAWCUT REMOVE AND REPLACE EXISTING PAVEMENT FOR SEWER CONSTRUCTION. REPLACE WITH TEMP. PAVEMENT PER C.O.C. STD. DETAIL C-110 AND M.A.G. SPEC. 336.

16 INSTALL 8" P.V.C. SEWER LINE PER C.O.C. STD. DETAIL C-402.

AIRPORT TERMINAL

VENTURE AVIATION

134'-1 1/4"

STINSON WAY

SEWER "D"

N00° 49' 22"W

N00° 59' 31"W

10+00 11+00 12+00 13+00 14+00 14+40

MATCHLINE STA 13+76.60 SEE SHEET CU-17

MATCHLINE STA 13+76.97 SEE SHEET CU-17

CL STA 10+11.00

MH #D1 SL STA 0+03.00 CL STA 10+17.00 9.68' RT PHASE 1 ADDITIVE ALTERNATE #7

CL STA 10+17.06 29.68' RT PHASE 1 ADDITIVE ALTERNATE #7

PHASE 1 ADDITIVE ALTERNATE #7

MH #D2 SL STA 2+05.00 CL STA 12+22.00 9.02' RT PHASE 1 ADDITIVE ALTERNATE #7

APN: 303-32-003 CITY OF CHANDLER MUNICIPAL AIRPORT

APN: 303-32-014C CITY OF CHANDLER MUNICIPAL AIRPORT

RYAN RD.

ESMT

MH #C2 SL STA 14+10.00 8.46' RT STINSON WAY = CL STA 706+73.78 CL STA 17+19.14 XX.XX' LT RYAN ROAD PHASE 1 ADDITIVE ALTERNATE #7

CHANDLER AVIATION

CHANDLER AIR SERVICE

STINSON WAY (PHASE I ADDITIVE ALTERNATE #7)

SCALE:1"=20'

CAUTION:
ALL EXISTING UNDERGROUND UTILITIES TO REMAIN. CONTRACTOR TO CONFIRM LOCATION & PROTECT IN PLACE.

Mark	Description	Date	By	Appr.

Mark	Description	Date	By	Appr.

Wilcox Professional Services

Designed by: AEA	Date: 10/20/10	Rev. -
Dwn by: AEA / Ckd by: TB	Design file no. 31278-00001CU121CURL.DWG	
Reviewed by: TB	Scale: 1" = 20'	
WPS Project #: 31278.00001	Client Project #: AI0805-201	

Project information: CHANDLER MUNICIPAL AIRPORT
APRON CONSTRUCT: AIRCRAFT PARKING CAPACITY PROJECT
(PHASE 1 OF 3), AIRPORT BLVD. RE-ALIGNMENT
FINAL (100%) SUBMITTAL

Sheet Title: SEWER PLAN AND PROFILE
STINSON WAY SOUTH
STA 10+00 TO 14+40

Sheet reference number: CU-27

REGISTERED PROFESSIONAL ENGINEER (CIVIL) CERTIFICATE NO. 18245 THOMAS P. BECK 10-20-10 Date Signed ARIZONA U.S.A.

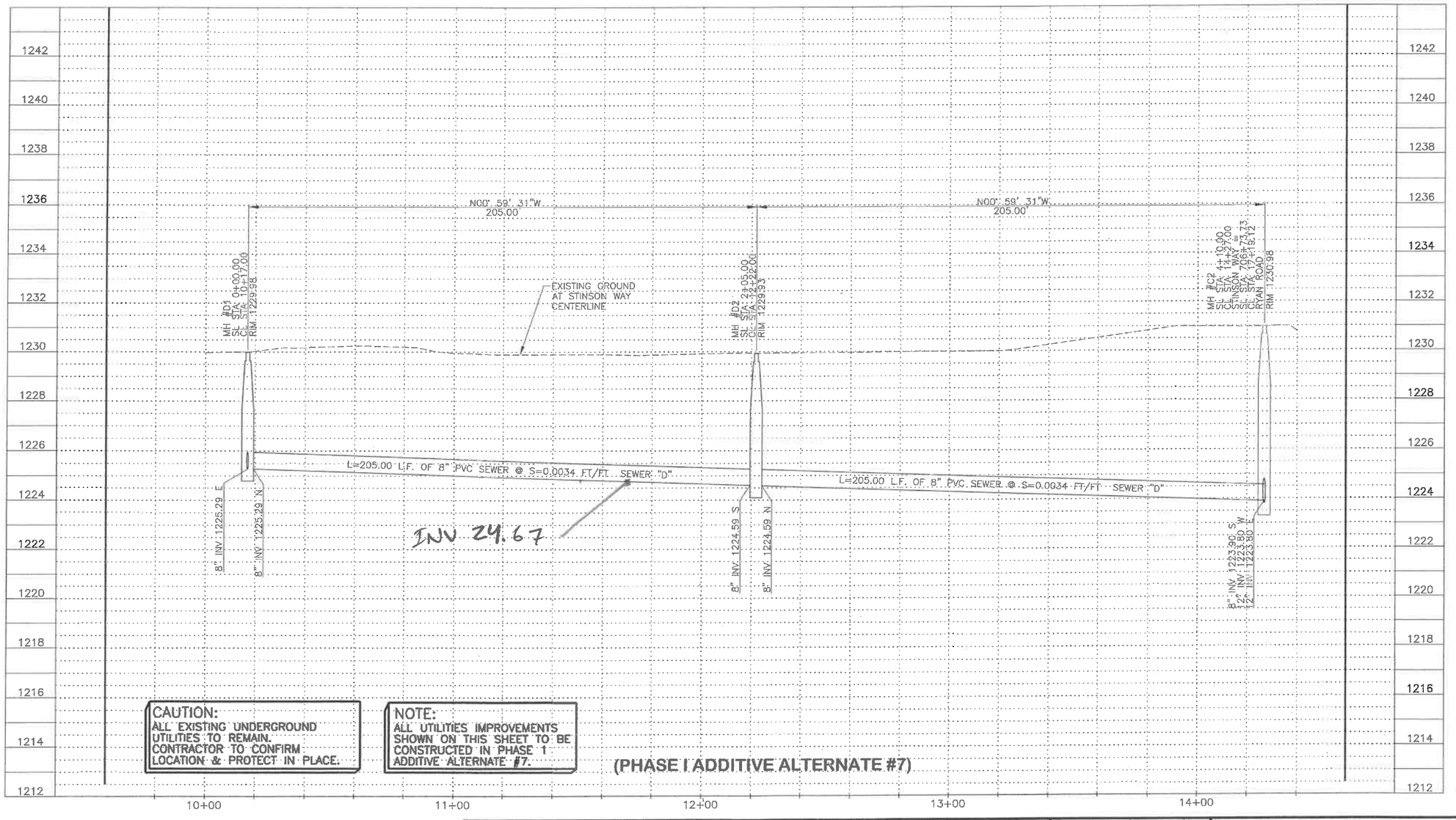
EXPIRES: 3/31/2011

CALL TWO WORKING DAYS BEFORE YOU DIG 602-263-1100 1-800-STAKE-IT BLUE STAKE CENTER

C.O.C. PROJECT # AI0805-201 ADOT GRANT #E7S86 BID SET

P:\PROJECTS\31278 - CHANDLER AIRPORT\00001\DADD\100% SUBMITTAL\31278-00001CU135SEW.DWG

1-5034



CAUTION:
ALL EXISTING UNDERGROUND UTILITIES TO REMAIN. CONTRACTOR TO CONFIRM LOCATION & PROTECT IN PLACE.

NOTE:
ALL UTILITIES IMPROVEMENTS SHOWN ON THIS SHEET TO BE CONSTRUCTED IN PHASE 1 ADDITIVE ALTERNATE #7.

(PHASE I ADDITIVE ALTERNATE #7)

FOR PLAN VIEW
SEE SHEET CU27.

0 10' 20' 40'
SCALE: 1"=20' HORIZONTAL
1"=2' VERTICAL

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
BLUE STAKE CENTER

Mark	Description	Date	By	Appr.	Mark	Description	Date	By	Appr.

Wilcox Professional Services

Designed by: A.E.A.		Date: 10/20/10	Rev.
Dwn by: A.E.A.	Ckd by: T.B.	Design file no. 31278-00001CU136SEW.DWG	
Reviewed by: T.B.		Scale: 1"=20' H, 1"=2' V	
WPS Project #: 31278.00001		Client Project #: AI0805-201	

Project Information: CHANDLER MUNICIPAL AIRPORT
APRON CONSTRUCT: AIRCRAFT PARKING CAPACITY PROJECT
(PHASE 1 OF 3), AIRPORT BLVD. RE-ALIGNMENT
FINAL (100%) SUBMITTAL

Sheet Title: SEWER PLAN AND PROFILE
STINSON WAY SOUTH
STA 10+00 TO 14+40

Sheet reference number: CU-28

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO. 18045
THOMAS P. BECK
10-20-10
ARIZONA U.S.A.

EXPIRES: 3/31/2011

C.O.C. PROJECT # AI0805-201 ADOT GRANT #E7S86 BID SET

P:\PROJECTS\31278 - CHANDLER AIRPORT\00001\CADD\100% SUBMITTAL\31278-00001CU136SEW.DWG

1-5034

EXHIBIT C

PERFORMANCE BOND

ARIZONA STATUTORY PERFORMANCE BOND
PURSUANT TO TITLES 28, 34, AND 41, ARIZONA REVISED STATUTES
(Penalty of this bond must be 100% of the Contract amount)

KNOW ALL MEN BY THESE PRESENTS THAT:_____
(hereinafter "Principal"), and _____ (hereinafter "Surety"), a corporation organized and existing under the laws of the State of _____ with its principal office in the City of _____, holding a certificate of authority to transact surety business in Arizona issued by the Director of Insurance pursuant to Title 20, Chapter 2, Article 1, as Surety, are held and firmly bound unto _____(hereinafter "Obligee") in the amount of _____ (Dollars) ($_____), for the payment whereof, Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Obligee, dated

the _____ day of _____, 20___ for construction of **AIRPORT PLUMBING RENOVATION**, **AI2101.401** which contract is hereby referred to and made a part hereof as fully and to the same extent as if copies at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal faithfully performs and fulfills all the undertakings, covenants, terms, conditions and agreements of the contract during the original term of the contract and any extension of the contract, with or without notice of the Surety, and during the life of any guaranty required under the contract, and also performs and fulfills all the undertakings, covenants, terms, conditions, and agreements of all duly authorized modifications of the contract that may hereafter be made, notice of which modifications to the Surety being hereby waived, the above obligation is void. Otherwise it remains in full force and effect.

PROVIDED, HOWEVER that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, and all liabilities on this bond will be determined in accordance with the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the same extent as if it were copied at length in this Contract.

The prevailing party in a suit on this bond may recover as part of the judgment reasonable attorney fees that may be fixed by a judge of the court.

Witness our hands this _____ day of _____, 20__.

_____
PRINCIPAL SEAL

_____
AGENT OF RECORD

By _____

_____
SURETY SEAL

_____
AGENT ADDRESS

EXHIBIT D

PAYMENT BOND

ARIZONA STATUTORY PAYMENT BOND
PURSUANT TO TITLES 28, 34, AND 41, OF THE ARIZONA REVISED STATUTES
(Penalty of this Bond must be 100% of the Contract amount)

KNOW ALL MEN BY THESE PRESENTS THAT:_____

(hereinafter "Principal"), as Principal, and _____(hereinafter "Surety"), a corporation organized and existing under the laws of the State of _____ with its principal office in the City of _____, holding a certificate of authority to transact surety business in Arizona issued by the Director of the Department of Insurance pursuant to Title 20, Chapter 2, Article 1, as Surety, are held and firmly bound unto _____ (hereinafter "Obligee") in the amount of _____ (Dollars) ($_____), for the payment whereof, the Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Obligee, dated the _____ day of _____, 20___ for construction of **AIRPORT PLUMBING RENOVATION**, **AI2101.401** which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal promptly pays all moneys due to all persons supplying labor or materials to the Principal or the Principal's subcontractors in the prosecution of the work provided for in said contract, this obligation is void. Otherwise it remains in full force and effect.

PROVIDED, HOWEVER that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2 Arizona Revised Statutes, and all liabilities on this bond will be determined in accordance with the provisions, conditions and limitations of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the same extent as if it were copied at length in this Contract.

The prevailing party in a suit on this bond may recover as part of the judgment reasonable attorney fees that may be fixed by a judge of the court.

Witness our hands this _____ day of _____, 20__.

_____
PRINCIPAL SEAL

_____
AGENT OF RECORD

By _____

_____
SURETY SEAL

_____
AGENT ADDRESS

EXHIBIT E

CONTRACTOR'S AFFIDAVIT REGARDING SETTLEMENT OF CLAIMS

_____, Arizona

Date _____

Project Name: **AIRPORT PLUMBING RENOVATION**
Project No.: **AI2101.401**

To the City of Chandler, Arizona

Gentlemen:

This is to certify that all lawful claims for materials, rental of equipment and labor used in connection with the construction of the above project, whether by subcontractor or claimant in person, have been duly discharged.

The undersigned, for the consideration of $_____, as set out in the final pay estimate, as full and complete payment under the terms of the contract, hereby waives and relinquishes any and all further claims or right of lien under, in connection with, or as a result of the above described project. The undersigned further agrees to indemnify and save harmless the City of Chandler against any and all liens, claims or liens, suits, actions, damages, charges and expenses whatsoever, which said City may suffer arising out of the failure of the undersigned to pay for all labor performances and materials furnished for the performance of said installation.

Signed and dated at _____, this _____ day of _____ 20____.

_____
CONTRACTOR

By _____

STATE OF ARIZONA)
) SS
COUNTY OF MARICOPA)

The foregoing instrument was subscribed and sworn to before me this _____ day of _____ 20 _____.

_____
Notary Public

_____
My Commission Expires

EXHIBIT F

CERTIFICATE OF COMPLETION

Project: **AIRPORT PLUMBING RENOVATION**
Project No.: **AI2101.401**

(TO BE COMPLETED BY CONTRACTOR)

I HEREBY CERTIFY THAT ALL GOODS AND/OR SERVICES REQUIRED BY CITY OF CHANDLER PROJECT NO. **AI2101.401** HAVE BEEN DELIVERED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND BID SPECIFICATIONS AND ALL ACTIVITIES REQUIRED BY THE CONTRACTOR UNDER THE CONTRACT HAVE BEEN COMPLETED AS OF _____.
(Date)

FIRM NAME: _____

PRINCIPAL: _____
(Name)

_____
(Signature)

_____ DATE: _____
(Title)

CERTIFIED BY ENGINEER/CONSULTANT (*IF APPLICABLE*):

_____ DATE: _____
(Signature)

_____
(Firm Name)

PROJECT ACCEPTED BY USER DEPARTMENT

_____ DATE: _____
(Signature)

_____
(Dept. /Div.)

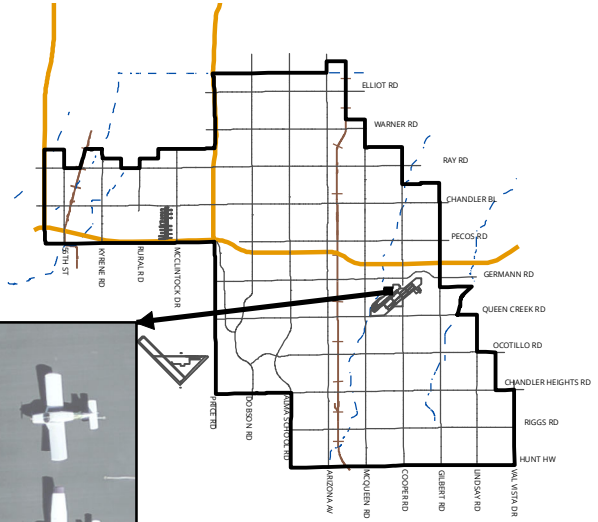
_____ Date of Final Walk-Through

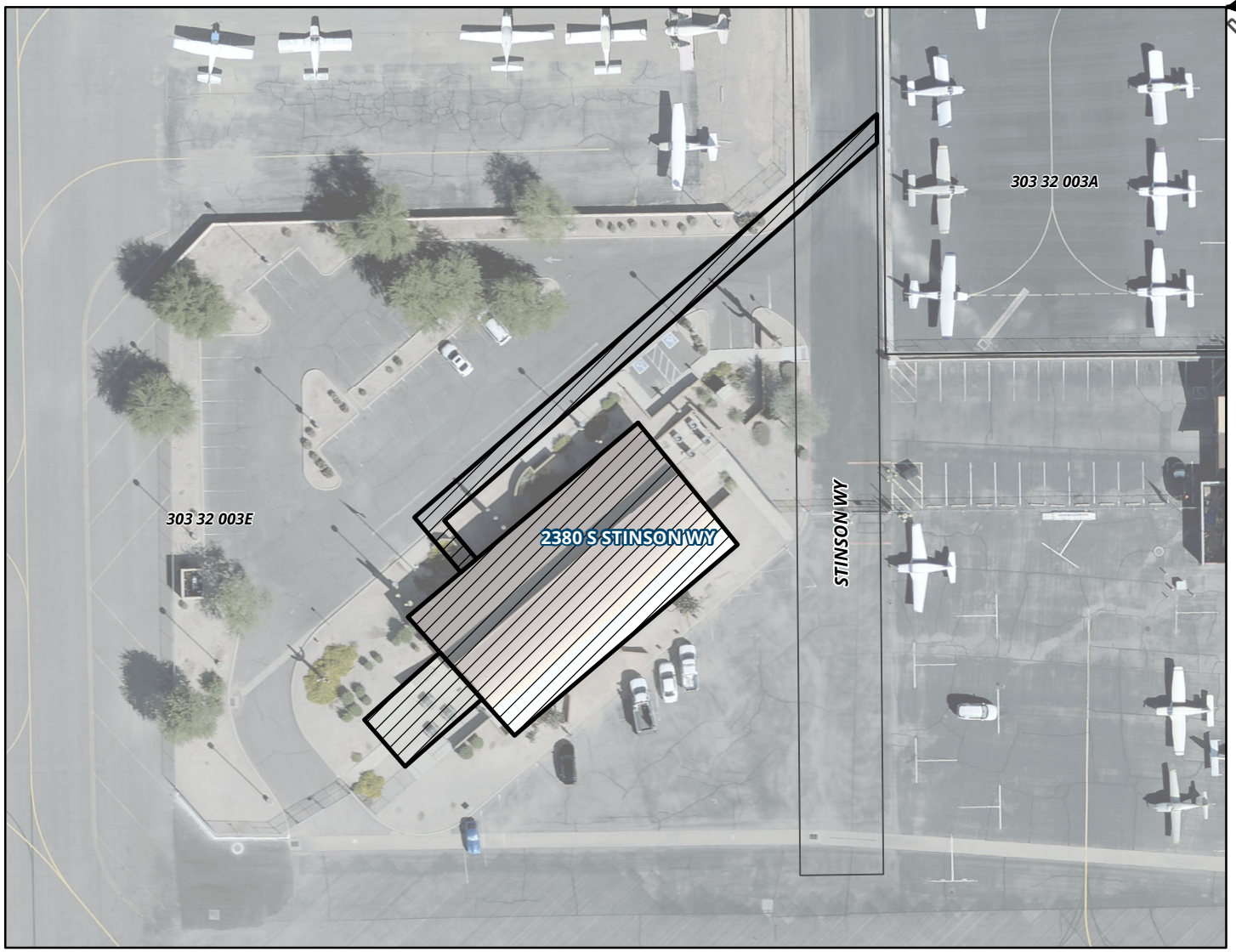
_____ Date As-Built Received

_____ City As-Built Number

CHANDLER
arizona

AIRPORT PLUMBING RENOVATION
PROJECT NO. AI2101.401





MEMO NO. CP21-111

PROJECT SITE

NTS

ChanGIS

F:\ENGINEER\GENSERV_ArcMap_Shared\Map Requests\Capital Projects\CP21-111 AIRPORT PLUMBING RENOVATION\CP21-111.mxd 3/9/2021 MARICELAH

CHANDLER arizona
Community of Innovation

City Council Memorandum Airport Memo No.

Date: April 19, 2021
To: Mayor and Council
Thru: Joshua H. Wright, Acting City Manager
Steven Turner, Acting Airport Manager
From: Chris Andres, Airport Planning Administrator
Subject: Move City Council pass and adopt Resolution No. 5467 approving the Airport Master Plan Update for the Chandler Municipal Airport

---

Proposed Motion:

Move City Council pass and adopt Resolution No. 5467 approving the Airport Master Plan Update for the Chandler Municipal Airport.

Background:

As a general aviation airport that is designated by the Federal Aviation Administration (FAA) as a regional reliever airport, the Chandler Municipal Airport serves an important role in the national air system and the regional economy. The Airport regularly receives federal and state capital grants for infrastructure projects to ensure a safe and viable transportation facility. The FAA recommends that airport master plans be revisited every seven to ten years to ensure those plans remain current. The last master planning effort was completed in 2007 with the FAA accepting the plan in 2010.

This master plan effort was funded through matching grants from the FAA and the Arizona Department of Transportation totaling $573,180, or 95.53% of project costs. The remaining $26,820 of local funding represents 4.47% of project costs.

The process began in the fall of 2019 and was periodically reviewed by a Council-appointed Planning Advisory Committee of 23 individuals representing Chandler residents and businesses, the Airport Commission, airport businesses, aviation industry representatives, the Town of Gilbert, the FAA, the Arizona Department of Transportation (ADOT) and City staff.

Four public meetings were held to gather input and present findings, including one in-person open house prior to the pandemic. The remaining public meetings were held virtually and over 200 individual comments were received. Each public meeting was promoted via social media, the City's water bills, and the monthly newsletter. Additionally, all documents were posted to the chandler.airportstudy.com website for public review and input.

The Airport Master Plan Update makes recommendations for airfield and landside improvements. The key feature for airfield improvements is a potential extension of the south runway (Runway 4R/22L) by 680 feet from the current 4,870 feet to 5,550 feet. This improvement would allow the same size and type of aircraft currently using the Airport in cooler months to use the Airport year-round.

The key feature for the landside improvements are designated areas for aeronautical and non-aeronautical development. Aeronautical categories include land for additional hangar development, fixed-base operators, and specialized aeronautical service operators. Non-aeronautical areas will permit the Airport to develop revenue, employment, and additional capital investment opportunities to support airport operating and infrastructure costs.

The plan includes an update to the Airport Layout Plan (ALP), which will be submitted to the FAA for final approval. A project must be depicted on an approved ALP to be eligible for federal grant funding approval, but is not a guarantee of funding.

Discussion:

On March 18, 2021, the Airport Commission voted unanimously to recommend City Council approval of the Airport Master Plan Update.

Financial Implications:

The Master Plan Update findings include a Capital Improvement Program of approximately $100 million in public and private investment for development over the next 20 years. Approximately 44% of these costs are planned for grant funding participation from the Federal Aviation Administration and ADOT. Approximately 8 percent of these costs are anticipated to be provided through local matching funds. The remaining 48% is anticipated to be private investment in new aviation facilities.

Attachments

Resolution No. 5467
Master Plan Intro
Master Plan Cover -TOC
Master Plan Ch1
Master Plan Ch2
Master Plan Ch3
Master Plan Ch4
Master Plan Ch5
Master Plan Ch6
Master Plan Appendix A
Master Plan Appendix B
Master Plan Appendix C
Master Plan Appendix D

RESOLUTION NO. 5467

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CHANDLER, ARIZONA, APPROVING THE AIRPORT MASTER PLAN FOR THE CHANDLER MUNICIPAL AIRPORT

WHEREAS, the City of Chandler desires to have an Airport Master Plan for guidance in airport development; and

WHEREAS, the City of Chandler desires to improve the airport for economic benefits to the community, convenience and safety to general aviation aircraft users on a year round basis.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Chandler, Arizona, as follows:

Section 1. Approves and adopts that certain document entitled "Chandler Municipal Airport Master Plan" for the Chandler Municipal Airport which includes the Airport Layout Plan.

Section 2. Authorizes the Mayor of the City of Chandler to sign the Airport Layout Plan.

PASSED AND ADOPTED by the City Council of the City of Chandler, Arizona, this _____ day of April, 2021.

ATTEST:

_____ _____

CITY CLERK MAYOR

CERTIFICATION

I HEREBY CERTIFY that the above and foregoing Resolution No. 4036 was duly passed and adopted by the City Council of the City of Chandler, Arizona, at a regular meeting held on the _____ day of April, 2021, and that a quorum was present thereat.

_____

CITY CLERK

APPROVED AS TO FORM:

_____

CITY ATTORNEY



INTRODUCTION AND SUMMARY

WHAT IS A MASTER PLAN?

The Federal Aviation Administration (FAA) recommends that airports update their long-term planning documents every seven to 10 years, or as necessary to address local changes at the airport. The last master plan update for Chandler Municipal Airport (CHD) was completed in 2007. The City of Chandler (City), the sponsor of the airport, received a grant from the FAA to update the Airport Master Plan.

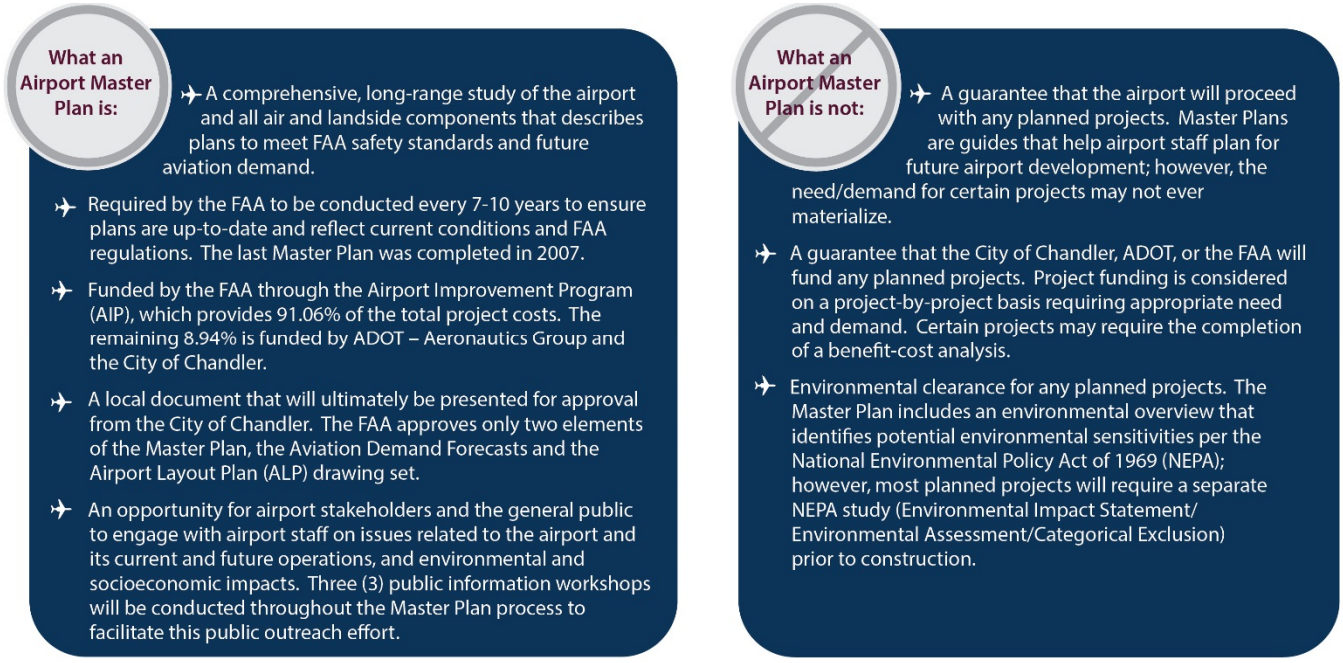
The City is responsible for funding capital improvements at the airport, as well as obtaining FAA and Arizona Department of Transportation (ADOT) – Aeronautics Group development grants. In addition, the City oversees facility enhancements and infrastructure development conducted by private entities at the airport. The Master Plan provides guidance for future development and justification for projects for which the airport may receive funding through an updated capital improvement program (CIP) to demonstrate the future investment required by the City, as well as the FAA and ADOT – Aeronautics Group.

The Airport Master Plan follows a systematic approach outlined by the FAA to identify airport needs in advance of the actual need for improvements. This is done to ensure that the City can coordinate environmental reviews, project approvals, design, financing, and construction to minimize the negative effects of maintaining and operating inadequate or insufficient facilities. An important outcome of the Master Plan process is a recommended development plan, which reserves sufficient areas for future facility needs. Such planning will protect development areas and ensure they will be readily available when

required to meet future needs. The intended outcome of this study is a detailed on-airport land use concept which outlines specific uses for all areas of airport property, including strategies for revenue enhancement.

The preparation of this Master Plan is evidence that the City recognizes the importance of the airport to the surrounding region and the associated challenges inherent in providing for its unique operating and improvement needs. The cost of maintaining an airport is an investment which yields impressive benefits to the local community. With a sound and realistic Master Plan, the airport can maintain its role as an important link to the regional, state, and national air transportation systems. Moreover, the plan will aid in supporting decisions for directing limited and valuable City resources for future airport development. Ultimately, the continued investments in the airport will allow the City to reap the economic benefits generated by historical investments.

Some common questions regarding what a master plan is / is not are answered in the graphic below.



WHO IS PREPARING THE MASTER PLAN?

The City has contracted with the airport planning firm Coffman Associates, Inc. to undertake the Airport Master Plan. Coffman Associates is an airport consulting firm that specializes in master planning and environmental studies. Coffman Associates will lead the planning team, with support from the following firms:

- Dibble Engineering | Engineering support primarily to offer insights into development alternatives and estimates of probable costs;
- MakPro Services | Community outreach and involvement support;

- Quest Energy | Evaluating the airport in terms of its energy use and efficiency;
- SWCA | Conducting field surveys in support of the environmental elements of the plan; and,
- Woolpert | Aerial photography, ground survey, and Geographic Information System (GIS) products to meet FAA 5300-18B requirements for Airports GIS data submittal.

The Airport Master Plan Update has been prepared in accordance with FAA requirements, including Advisory Circular (AC) 150/5300-13A, *Airport Design* (as amended), and AC 150/5070-6C, *Airport Master Plans* (as amended). The plan will be closely coordinated with other planning studies relevant to the area and with aviation plans developed by the FAA and ADOT – Aeronautics Group. The plan will also be coordinated with the City of Chandler, as well as other local and regional agencies as appropriate.

GOALS AND OBJECTIVES

The primary goal of this Master Plan is to develop and maintain a financially feasible, long-term development program, which will satisfy aviation demand of the region; be compatible with community development, other transportation modes, and the environment; and enhance employment and revenue for the local area. Accomplishing this goal requires an evaluation of the existing airport to decide what actions should be taken to maintain a safe, adequate, and reliable facility.

Specific objectives of the study include the following:

- Document the issues that proposed development will address.
- Justify the proposed development through the technical, economic, and environmental investigation of concepts and alternatives.
- Provide an effective graphic presentation of the development of the airport and anticipated land uses in the vicinity of the airport.
- Establish a realistic schedule for the implementation of the development proposed in the plan, particularly the short-term capital improvement program.
- Propose an achievable financial plan to support the implementation schedule.
- Provide sufficient project definition and detail for subsequent environmental evaluations that may be required before the project is approved.
- Present a plan that adequately addresses the issues and satisfies local, state, and federal regulations.
- Document policies and future aeronautical demand to support municipal or local deliberations on spending, debt, land use controls, and other policies necessary to preserve the integrity of the airport and its surroundings.

- Set the stage and establish the framework for a continuing planning process. Such a process should monitor key conditions and permit changes in plan recommendations as required.

- To enhance/expand general aviation services to accommodate tenants/users, thus increasing the socioeconomic benefits to the community.

BASELINE ASSUMPTIONS

A long-range planning study requires several baseline assumptions that will be used throughout this analysis. The baseline assumptions for this study are as follows:

- CHD will continue to operate as a regional general aviation reliever airport through the 20-year planning period;

- CHD will continue to accommodate general aviation tenants, as well as itinerant and/or local aircraft operations by air taxi, general aviation, and military operators;

- The aviation industry will develop through the planning period as projected by the FAA. Specifics of projected changes in national aviation industries are described in Chapter Two – Forecasts;

- The socioeconomic characteristics of the region will generally change as forecast (see Chapter Two); and,

- A federal and state airport improvement program will be in place through the planning period to assist in funding future capital development needs.

MASTER PLAN ELEMENTS AND PROCESS

The Master Plan has 11 elements that are intended to assist in the evaluation of future facility needs and provide the supporting rationale for their implementation. **Exhibit IA** provides a graphical depiction of the process involved with the study.

Element 1 – Initiation includes the development of the scope of services, schedule, and study website. Study material will be assembled in a workbook format. General background information will be established that includes outlining the goals and objectives to be accomplished during the Master Plan.

Element 2 – Inventory is focused on collecting and assembling relevant data pertaining to the airport and the area it serves. Information is collected on existing facilities and operations. Local economic and demographic data is collected to define the local growth trends, and environmental information is gathered to identify potential environmental sensitivities that might affect future improvements. Planning studies which may have relevance to the Master Plan are also collected.

INITIATION
- Goals and Objectives
- Establish Advisory Committee

AC #1

INVENTORY
- Airport Facilities
- Airspace and Air Traffic Activity
- Airport Access and Parking, Utilities, and Aerial Photography
- Area Socioeconomic Data
- Local Planning and Land Use
- AGIS Survey

FORECASTS
- Based Aircraft and Fleet Mix
- Annual Operations
- Peaking Characteristics
- Critical Aircraft Analysis

FACILITY REQUIREMENTS
- Design Categories
- Runway Length and Strength
- Support Facilities
- Taxiways
- Airfield Capacity
- Hangar Facilities
- Terminal Building
- Aprons
- Navigational Aids

AC #2

Working Papers

OH #1

AIRPORT ALTERNATIVES
- Evaluate Development Scenarios
  - Airside
  - Landside
  - Support

AC #3

Working Papers

OH#2

RECOMMENDED MASTER PLAN CONCEPT AND CAPITAL FINANCIAL PLAN
- Detailed Master Plan Facility and Land Use Plans
- Cost Estimates
- Funding Sources
- Airport Capital Improvement Plan

ENVIRONMENTAL CONSIDERATIONS/ SUSTAINABILITY PLAN/
- Noise Exposure
- Recycling Plan
- Review/Evaluation of NEPA Environmental Categories
- Energy Assessment

AC #4

Working Papers

OH #3

AIRPORT LAYOUT PLANS
- Airport Layout Plan
- Landside Drawing
- Airspace/Approach Drawings
- On-Airport Land Use Plan
- Property Map
- Land Use Plans







AC: Advisory Committee
OH: Open House

Element 3 – Forecasts examines the potential aviation demand at the airport. The analysis utilizes local socioeconomic information, as well as national air transportation trends to quantify the levels of aviation activity which can reasonably be expected to occur at CHD over a 20-year period. An existing and ultimate critical design aircraft, based upon AC 150/5000-17, *Critical Aircraft and Regular Use Determination,* is also established to determine future planning design standards. The results of this effort are used to determine the types and sizes of facilities which will be required to meet the projected aviation demand at the airport through the planning period. This element is one of two elements that are submitted to the FAA for approval.

Element 4 – Facility Requirements determines the available capacities of various facilities at the airport, whether they conform with FAA standards, and what facility updates or new facilities will be needed to comply with FAA requirements and/or projected 20-year demand.

Element 5 – Airport Alternatives considers a variety of solutions to accommodate projected airside and landside facility needs through the long-term planning period. An analysis is completed to identify the strengths and weaknesses of each proposed development alternative, with the intention of determining a single direction for development.

Element 6 – Recommended Master Plan Concept and Capital Financial Plan provides both a graphic and narrative description of the recommended plan for the use, development, and operation of the airport. A capital improvement program (CIP) is established to define the schedules, costs, and funding sources for the recommended development projects.

Element 7 – Airport Layout Plans is the preparation of the official Airport Layout Plan (ALP) drawings based on the recommended development concept. The ALP set is used by the FAA and ADOT – Aeronautics Group in determining grant eligibility. This element is the second element of the study that is submitted to the FAA for approval.

Element 8 – Environmental Considerations involves providing environmental information to assist in the evaluation of airport development alternatives and to provide information that will help expedite subsequent environmental review under NEPA.

Element 9 – Sustainability Plan consists of two tasks, a recycling plan and an energy assessment. These tasks are intended to help the airport reduce its operating costs and its environmental impacts.

Element 10 – Public Coordination and Communication includes tasks related to the establishment of a Planning Advisory Committee (Committee) for the Master Plan, as well as conducting periodic public information workshops with the aim of engaging the community in the study process. A study website is also developed for the purpose of distributing study materials and notices of public meetings.

Element 11 – Final Reports and Approvals provide documents which depict the findings of the study effort and present the study and its recommendations to appropriate local organizations. The final document incorporates the revisions to previous working papers prepared under earlier elements into a usable Master Plan document.

COORDINATION AND OUTREACH

The CHD Master Plan is of interest to many within the local community and region. This includes local citizens, local businesses, community organizations, City officials, airport users/tenants, and aviation organizations. As a component of the regional, state, and national aviation systems, CHD is of importance to both state and federal agencies responsible for overseeing the air transportation system.

To assist in the development of the Master Plan, a Master Plan Committee was established to act in an advisory role in the development of the Master Plan. Committee members met four times at designated points during the study to review study materials and provide comments to help ensure that a realistic, viable plan was developed.

Draft working paper materials were prepared at various milestones in the planning process. The working paper process allows for timely input and review during each step within the Master Plan to ensure that all issues are fully addressed as the recommended program develops.

A series of three open-house public information workshops were also conducted as part of the study coordination and outreach efforts. Workshops are designed to allow all interested persons to become informed and provide input concerning the Master Plan process. Notices of meeting times and locations were advertised through local media outlets. All draft reports, meeting notices, and materials were made available to the public on a website: www.chandler.airportstudy.com.

SWOT ANALYSIS

A SWOT analysis is a strategic business planning technique used to identify **S**trengths, **W**eaknesses, **O**pportunities, and **T**hreats associated with an action or plan. The SWOT analysis involves identifying an action, objective, or element, and then identifying the internal and external forces that are positively and negatively impacting that action, objective, or element in a given environment. A SWOT analysis will be conducted at the first Advisory Committee meeting.

SWOT DEFINITIONS

This SWOT analysis groups information into two categories:

- **Internal –** attributes of the airport and market area that may be considered strengths or weaknesses to the action, objective, or element.
- **External –** attributes of the aviation industry that may pose as opportunities or threats to the action, objective, or element.

The SWOT further categorizes information into one of the following:

- **Strengths –** internal attributes of the airport that are helpful to achieving the action, objective, or element.
- **Weaknesses –** internal attributes of the airport that are harmful to achieving the action, objective, or element.
- **Opportunities –** external attributes of the industry that are helpful to achieving the action, objective, or element.
- **Threats –** external attributes of the industry that are harmful to achieving the action, objective, or element.

SWOT ANALYSIS EXERCISE

The SWOT analysis for CHD is based upon information gathered, including a kick-off Master Plan Committee meeting that was conducted in October 2019. As previously discussed, the Committee is a diversified group of stakeholders, community leaders, and governmental agencies that represent several interests in the airport. A SWOT analysis was conducted with this group to identify key factors that might be addressed in the Master Plan. A summary of the results from the SWOT analysis exercise is shown in **Table IA**. These results were used to frame the subjective or judgmental processing of the data presented in the Master Plan.

TABLE IA
SWOT Analysis Results
Chandler Municipal Airport

Strengths	
Strong humanitarian segment	Fast growing community drives demand
Various demand segments operating at CHD	Attracts national/global business
Economic impact of airport on local community	Fully developed airfield/lack of delays
Opportunities it provides to economic climate of the community and wider area	FBOs available providing full range of GA services
Good climate (weather)	Infrastructure in place to support future development
Location/accessibility from highway	Flexibility of airspace/cooperation with regional airspace controllers
Interest in local entities in airport activities	Great airport staff
On-site airport traffic control tower	Large engineering schools in area
Available property for development	Runway length; Can be extended, but only so long
Underutilized large helipad	Flight testing areas close
Close to Phoenix but not too close - away from the worst of land and air congestion	Encroachment on the airfield (at this point) has not restricted operations. Current city administration intent on keeping it that way.
Favorable city government	New fueling capability
Population familiar with unmanned motor vehicles - receptive to UAVs	Expansion areas around the airfield for airport related infrastructure. (Especially since Wingspan fell out.)
Strong business development benefits from CHD's role as a GA reliever	Proximity to Tucson in relation to the other airfields in the Valley
Large industrial base in area	Hangar Cafe
City finances solid - can provide grant matches	

TABLE IA (continued)
SWOT Analysis Results
Chandler Municipal Airport

Weaknesses	
Aging infrastructure/pavements	City owned hangars are nearing end of life/poor condition
Climate	Accessibility to south side of airport/deters development
Available runway length/aircraft insurance restrictions	Low airport staffing levels
Difficult political history/lack of political support	Organizational structure of airport within City departments (airport moves from one department to another leads to confusion)
Land lease renewals have not been renewed	Lack adequate dust control for larger military helicopters
Hangar availability	Environmental issues
All existing instrument approaches cross	Runway length; Can be extended, but only so long
Runway length and ordinance	Land locked - limited areas
Opportunities	
Fast growing community drives demand	Potential for revenue generation
City is visioning to support future development of the community	Sustainability component/considerations
Better cooperation with current mayor and city council	Airpark area development/surrounding land use development
Preparing this master plan to educate/engage local elected officials and public	Available amenities near airport to support businesses/industry
Aircraft hangar waiting list/demand for new hangars	Expanded services/hotels/rental cars to support airport growth
Utilizing data gathered in master plan to supplement economic development tools	Capitalizing on city's welcoming of innovation and startups provides opportunity to airport
Local businesses that supply aviation industry	Attract new aircraft maintenance/rehab (upholstery/aircraft painting) service operators
Attracting new business aviation operators	New staff to attract business aviation
Hangar for experimental aircraft final assembly	Develop a consistent marketing strategy for the airport (business/tourism/educational)
City transportation department is updating its master plan and has a dedicated section on airport	Educate youth in community - next generation - integrate local schools
Engaging with youth	Funding availability from FAA/ADOT
Unmanned aerial vehicles (UAVs)	More hangar space - more comfortable for tenants
Lengthened runway increases fuel sales & business travelers	Strategic partnerships with technology companies
ALP shows longer runway	Update Airpark Area Plan
Favorable political climate to consider runway length	Additional revenue generation for airport = more improvements
Pilot training - next generation	Connection to Intel and all the corporate structure that has grown up around it.
Longer runway = more options	As a somewhat underutilized airfield, opportunity to become the one airfield which can service a new player in the Valley (Especially if the runway is extended)
Building more of a community at the airport / sense of legacy and belonging	
Threats	
Encroachment of surrounding development	Multi-family housing development near airport/residential encroachment
Difficult political history	Pilot shortage/aging pilot population
Potential future constraints of regional airspace	Drop in aircraft ownership among pilots/less investing in aircraft
Lack of hotel accommodations in area/losing tax dollars to other communities	Economic downturns/impact of worldwide events

TABLE IA (continued)
SWOT Analysis Results
Chandler Municipal Airport

Very strong/committed local/regional competition for business aviation operators	Funding availability/uncertainty
Voters/lack of knowledge of airport activities	Cyber security/threats
Public perception - history from longtime residents	Climate change - summer temperatures
Strong competition from other airports	Demographic changes - aging GA pilot population
Traditional airport/aviation businesses will change	Pressure on traditional airport revenue streams
Threat of economic downturn	Legislation (fed, state, local)
Election can change climate/support	Future city administration that values the land more than they value the economic impact of the airport
Change in pilots - more drone pilots, more single pilot aircraft	Chandler City is in late stages of buildout - land around the airport will get more and more premium
Change in air traffic - busier with UAVs	Increasing noise aversion as the population fills in

SUMMARY

Planned development at CHD is focused on accommodating projected growth in activity and meeting FAA airfield design standards. The capital improvement program (CIP) that has been developed identifies both airside (runways, taxiways, navigational aids, etc.) and landside (aprons, access roads, vehicle parking, etc.) facility needs.

To properly plan for future demand that may occur, aviation demand forecasts were prepared. Because of the cyclical nature of the economy, it is virtually impossible to predict with certainty year-to-year fluctuations in activity when looking five, ten, and twenty years into the future. Recognizing this reality, the Master Plan is keyed toward potential demand "horizon" levels rather than future dates in time. These "planning horizons" were established as levels of activity that will call for consideration of the implementation of the next step in the Airport Master Plan program. By developing the Airport to meet the aviation demand levels instead of specific points in time, the Airport will serve as a safe and efficient aviation facility which will meet the operational demands of its users while being developed in a cost-efficient manner. This program allows the City of Chandler to change specific development in response to unanticipated needs or demand.

The forecast approach utilized historical and forecasted general aviation and economic trends resulting in modest growth projections for CHD through the planning period of the Master Plan. The forecast planning horizons are summarized in **Table IB**. These forecasts were reviewed and approved by the FAA on May 5, 2020 (see **Appendix C**).

TABLE IB
Aviation Demand Planning Horizons
Chandler Municipal Airport

	Base Year (2019)	Short Term (1-5 Years)	Intermediate Term (6-10 Years)	Long Term (11-20 Years)
BASED AIRCRAFT				
Single Engine	379	424	469	552
Multi-Engine	26	24	20	15
Turboprop	6	7	9	13
Jet	8	10	13	20
Helicopter	22	25	29	40
TOTAL BASED AIRCRAFT	441	490	540	640
ANNUAL OPERATIONS				
Itinerant				
Air Taxi	2,990	3,900	4,400	5,100
General Aviation	67,647	72,500	77,300	87,400
Military	199	213	213	213
Total Itinerant	70,836	76,613	81,913	92,713
Local				
General Aviation	149,754	158,300	165,800	181,900
Military	72	62	62	62
Total Local	149,826	158,362	165,862	181,962
TOTAL OPERATIONS	220,662	234,975	247,775	274,675

Source: Coffman Associates analysis

It should be noted that aviation activity can be affected by numerous outside influences that may occur locally, regionally, or nationally. At the time of this writing in March 2021, the biggest factor currently influencing the aviation industry is the COVID-19 pandemic that has resulted in a significant reduction in air travel. While general aviation and business aviation operations have been returning to pre-COVID levels, there is still much uncertainty as to how this health crisis will affect airports in the coming months, or the lasting impacts it may have on the industry as a whole. With that in mind, it is important to note that aviation demand forecasts should be used for advisory purposes only. It is recommended that planning strategies remain flexible to accommodate unforeseen events, and that airport decision-makers be prepared to adapt plans as necessary.

MASTER PLAN CONCEPT

The Master Plan concept includes improvements to the airfield and landside area to satisfy FAA design and safety standards and to meet current and forecast needs. Runway design standards are based upon the characteristics of each runway's critical design aircraft, which is the most physically demanding aircraft that uses each runway for at least 500 operations annually.

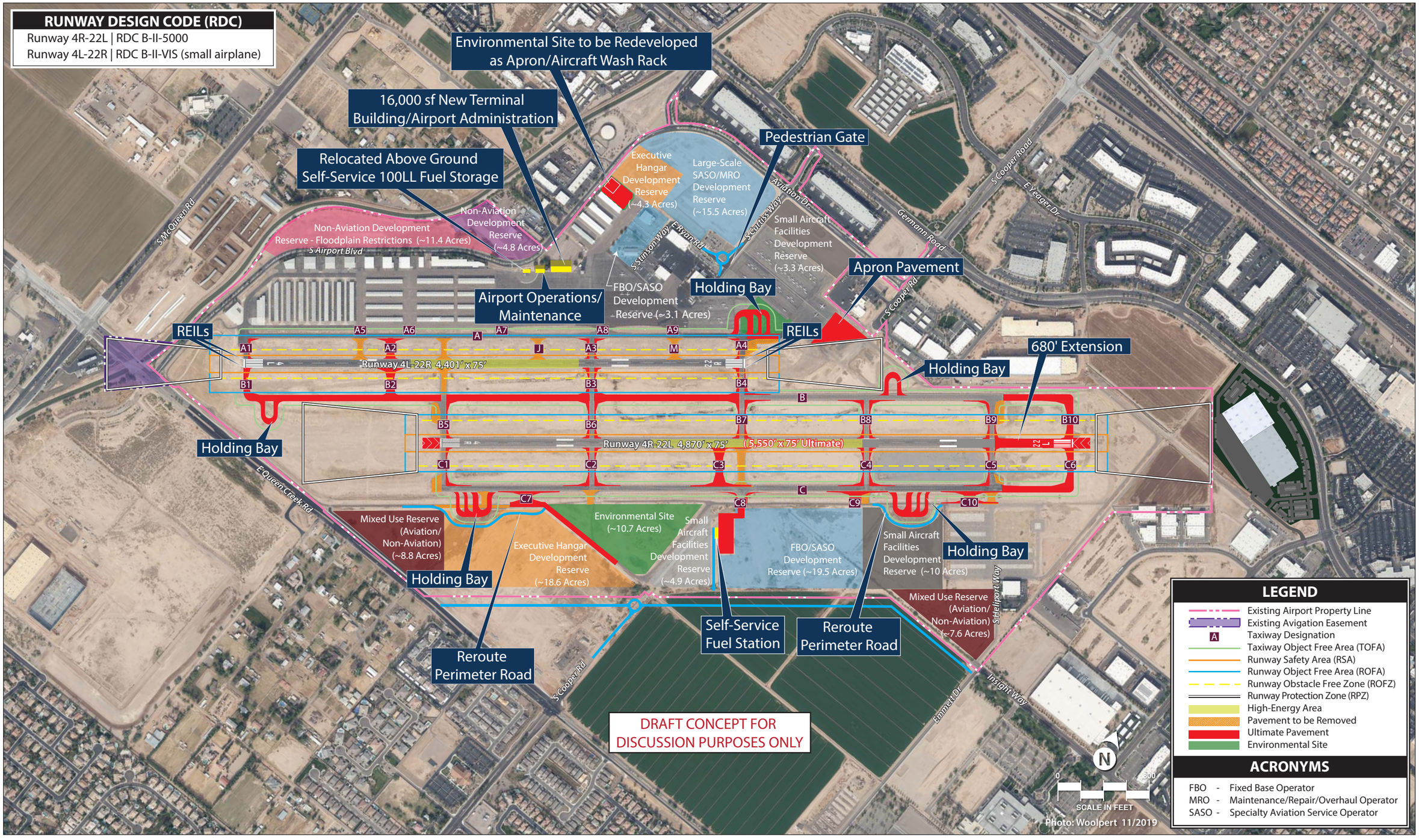
Airside Summary

CHD is classified in the FAA's National Plan of Integrated Airports System (NPIAS) as a general aviation reliever airport of regional importance. In this role, CHD is meant to relieve the commercial service airports in the Phoenix Metropolitan Area (Phoenix Sky Harbor and Phoenix-Mesa Gateway) of general aviation

traffic including small single-engine aircraft up to mid-sized business jets. The existing airfield, which consists of two runways, is well situated to serve in its role. However, improvements are necessary to meet FAA design standards and the needs of a new generation of aircraft and the businesses that support airport activities. **Table IC** provides a summary of airside improvements, which are depicted on **Exhibit IB**. A more detailed discussion of recommendations can be found in Chapter Five of the Master Plan.

TABLE IC
Airside Summary
Chandler Airport

	EXISTING CONDITION	ULTIMATE CONDITION
RUNWAY 4R-22L (Primary Runway)		
Runway Design Code (RDC)	RDC B-II-5000	RDC B-II-5000
Critical Design Aircraft	Beechcraft King Air 200/300/350	Cessna Citation CRJ4/Citation X
Runway Dimensions (l x w) (in feet)	4,870' x 75'	Extend to 5,550 feet to increase utility for mid-sized business jets
Runway Pavement Strength	30,000 lbs. Single Wheel Loading	Maintain
Safety Areas	Standard RSA, ROFA, and ROFZ	Maintain
Runway Protection Zones (RPZs)	RPZs are contained entirely on airport property	The Runway 22L RPZ will shift with the runway extension but will remain on airport property.
RUNWAY 4L-22R (Parallel Runway)		
Runway Design Code (RDC)	RDC B-II-VIS (small)	RDC B-II-5000 (small)
Critical Design Aircraft	Beechcraft King Air 90	Beechcraft King Air 90
Runway Dimensions (l x w) (in feet)	4,401' x 75'	Maintain
Runway Pavement Strength	30,000 lbs. Single Wheel Loading	Maintain
Safety Areas	Standard RSA, ROFA, and ROFZ	Maintain
Runway Protection Zones (RPZs)	RPZs are contained entirely on airport property or on property controlled by avigation easements	Maintain
TAXIWAYS		
Taxiway Design Group (TDG)	TDG-2	TDG-2
Taxiway Width	All taxiways at least 35' wide	Maintain
Taxiway Geometry Issues	Taxiway fillets throughout airfield do not meet design standards	Modify taxiway fillets to meet design standards
	Direct access points: Taxiways F, M, and Q	Relocate Taxiway F and Q and eliminate a portion of Taxiway M
	High-energy area intersections: Taxiways H and N	Eliminate Taxiway H intersection with Runway 4L-22R and shift a portion of Taxiway N outside the Runway 4R-22L high-energy area
	Holding aprons near the ends of both runways are non-standard design	Replace holding aprons with holding bays that meet new FAA design
NAVIGATIONAL AND APPROACH AIDS		
Instrument Approach Procedures	2 published approach procedures including GPS and VOR to Runway 4R	Establish GPS-based instrument approaches with 1-mile or greater visibility minimums to all runway ends
Weather Reporting Station	Automated Weather Observation System (AWOS)	Maintain
Airport Traffic Control Tower	ATCT on north side of airfield	Maintain
Visual Approach Aids	PAPI-4s – all runways	Maintain
	REILs - Runways 4R, 22L	Install REILs on Runway 4L, 22R
LIGHTING, MARKING, AND SIGNAGE		
Lighting	Rotating Beacon	Maintain
	MIRL – both runways	Consider gradual replacement with LED technology
	MITL – all taxiways	Consider gradual replacement with LED technology
Marking	Non-Precision Markings - Runway 4R-22L	Maintain
	Basic Markings – Runway 4L-22R	Potential upgrade to non-precision markings to support instrument approaches
	Runway 4R-22L - Holding position markings 200' from runway centerline	Maintain
	Runway 4L-22R - Holding position markings 125' from runway centerline	Maintain
Signage	Lighted airfield location and directional signage	Consider gradual replacement with LED technology


RUNWAY DESIGN CODE (RDC)
Runway 4R-22L | RDC B-II-5000
Runway 4L-22R | RDC B-II-VIS (small airplane)
Environmental Site to be Redeveloped as Apron/Aircraft Wash Rack
16,000 sf New Terminal Building/Airport Administration
Relocated Above Ground Self-Service 100LL Fuel Storage
Pedestrian Gate
Executive Hangar Development Reserve (~4.3 Acres)
Large-Scale SASO/MRO Development Reserve (~15.5 Acres)
Non-Aviation Development Reserve - Floodplain Restrictions (~11.4 Acres)
Non-Aviation Development Reserve (~4.8 Acres)
Small Aircraft Facilities Development Reserve (~3.3 Acres)
Apron Pavement
Airport Operations/ Maintenance
FBO/SASO Development Reserve (~3.1 Acres)
Holding Bay
REILs
680' Extension
Runway 4L-22R 4,401' x 75'
Runway 4R-22L 4,870' x 75' (5,550' x 75' Ultimate)
Holding Bay
Holding Bay
Mixed Use Reserve (Aviation/ Non-Aviation) (~8.8 Acres)
Environmental Site (~10.7 Acres)
Small Aircraft Facilities Development Reserve (~4.9 Acres)
Executive Hangar Development Reserve (~18.6 Acres)
FBO/SASO Development Reserve (~19.5 Acres)
Small Aircraft Facilities Development Reserve (~10 Acres)
Holding Bay
Mixed Use Reserve (Aviation/ Non-Aviation) (~7.6 Acres)
Reroute Perimeter Road
Self-Service Fuel Station
Reroute Perimeter Road
DRAFT CONCEPT FOR DISCUSSION PURPOSES ONLY
S McQueen Rd
E Queen Creek Rd
S Airport Blvd
S Stinson Way
E Ryan Rd
S Curtiss Way
Aviation Dr
Germann Road
S Cooper Road
E Yeager Dr
S Cooper Rd
S Heliport Way
Emmett Dr
Insight Way
LEGEND
Existing Airport Property Line
Existing Avigation Easement
Taxiway Designation
Taxiway Object Free Area (TOFA)
Runway Safety Area (RSA)
Runway Object Free Area (ROFA)
Runway Obstacle Free Zone (ROFZ)
Runway Protection Zone (RPZ)
High-Energy Area
Pavement to be Removed
Ultimate Pavement
Environmental Site
ACRONYMS
FBO - Fixed Base Operator
MRO - Maintenance/Repair/Overhaul Operator
SASO - Specialty Aviation Service Operator
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SCALE IN FEET
Photo: Woolpert 11/2019

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Landside Summary

Landside facilities at CHD consist of aircraft storage hangars, parking aprons, and businesses providing aviation services (fixed base operators [FBOs] and specialty aviation service operators [SASOs]). Additional landside support facilities include fuel storage tanks, maintenance facilities, and vehicle parking lots and access roads. The master plan provides recommendations on the development of new landside facilities to accommodate the needs of existing and future users.

All hangar-related development should occur only as dictated by demand. The locations of hangar development proposed in the recommended concept are conceptual and are subject to modification based on the needs of a developer and their target customers. The recommended concept is intended to be used strictly as a guide for CHD staff when considering new developments.

A summary of landside recommendations is included below.

- **North Side** | Recommended facilities include a new 16,000 square foot (sf) terminal building to be developed adjacent to the airport traffic control tower (ATCT) to provide a more modern facility for pilot and passenger amenities, as well as offices for airport administration. This site has frontage to the terminal apron that makes it highly visible from the airfield and takes advantage of an existing vehicle parking lot that is currently underutilized. The airport's operations and maintenance equipment storage are planned to be moved to a new facility adjacent to the new terminal to provide a consolidated airport administrative complex. An existing underground storage tank located along S. Airport Boulevard is planned to be replaced with a new above ground tank equipped with spill containment on the terminal apron adjacent to the existing self-service fuel distribution system. Apron pavement on the north side is planned to be expanded by approximately 11,825 square yards (sy). Approximately 39.3 acres of undeveloped property on the north side is planned for a variety of uses including new specialty aviation service operators (SASOs), maintenance/repair/overhaul (MROs) operations, executive hangars and small aircraft facilities, and non-aviation development. The existing terminal building and adjacent unoccupied hangar are planned for redevelopment for FBO/SASO activities.

- **South Side** | The south side of the airport is predominantly undeveloped with approximately 82 acres (excluding 10.7 acres of an environmental site) available for development. Helicopter operations associated with Quantum Helicopters are the primary activity on the south side. It is anticipated that once the north side reaches a built-out condition, new development will begin on the south side. A major barrier to development of the south side is a need for expanded utility infrastructure and vehicle access roads. The plan also identifies extensions of Insight Way and S Cooper Road into the south side of the airport for vehicle circulation. Once this infrastructure is in place, the plan reserves parcels for new FBO/SASO development, executive hangar development, small aircraft facilities, and mixed-use development that could include aviation-related or non-aviation related development.

DEVELOPMENT FUNDING

The full implementation of the Airport Master Plan is likely to take two decades or more at a cost of $100.8 million in 2020 dollars. The breakdown of funding over the three planning horizons is presented in **Table ID**. Approximately 40 percent of the total is eligible for grant funding from the FAA or the Arizona Department of Transportation (ADOT) – Aeronautics Group. The source for FAA funding is the Aviation Trust Fund, which is funded through user fees and taxes on airline tickets, aviation fuel, and aircraft parts. A more detailed discussion of the Capital Improvement Program can be found in Chapter Six of the Master Plan. Private funding is also anticipated for the bulk of the development of new landside facilities including at least partial contribution towards the new terminal building. Private funding sources represent approximately 43 percent of the total capital program.

With the Airport Master Plan Update completed, the most important challenge is implementation. The cost of developing and maintaining aviation facilities is an investment which yields impressive benefits for the City of Chandler. This plan and associated development program provide the tools the City will require to meet the challenges of the future. By providing a safe and efficient facility, CHD will continue to be a valuable asset to the City of Chandler and the surrounding region.

TABLE ID
Development Funding Summary
Chandler Municipal Airport

Planning Horizon	Total Cost	AIP-Eligible Share	ADOT Share	Airport Sponsor Share	Private Funding
Short-Term Program	$21,030,775	$12,569,012	$3,404,474	$5,057,289	$0
Intermediate-Term Program	$49,856,500	$20,982,045	$1,029,977	$2,395,977	$17,448,500
Long-Term Program	$29,985,200	$2,351,169	$115,415	$1,415,415	$26,103,200
Total Program Costs	***$100,872,475***	***$35,902,226***	***$4,549,867***	***$8,868,682***	***$43,551,700***

Note: Funding subtotals do not add up to the estimated total cost due to the uncertainty of funding sources for the new terminal building, which is estimated at $8,000,000.
Sources: Project cost estimates prepared by Dibble Engineering and project staging established by City of Chandler and Coffman Associates.

Airport Master Plan



DRAFT FINAL







CHANDLER
MUNICIPAL AIRPORT
CHD

CHANDLER
arizona
Community of Innovation

Draft Final
AIRPORT MASTER PLAN

CHANDLER MUNICIPAL AIRPORT
Chandler, Arizona

Prepared for:

The City of Chander

Prepared by:

Coffman Associates
Airport Consultants

March 2021



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CHANDLER arizona

CHANDLER arizona

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Chapter One

INVENTORY

The inventory chapter of existing conditions is the initial step in the preparation of the Chandler Municipal Airport (CHD) Master Plan. The inventory will serve as an overview of the airport's physical and operational features, including facilities, users, and activity levels, as well as specific information related to the airspace, air traffic activity, and role of the airport. Finally, a summary of socioeconomic characteristics and review of existing environmental conditions on and adjacent to the airport are thoroughly detailed, which will provide further input into the study process.

Information provided in Chapter One serves as the baseline for the remainder of the master plan, which is compiled using a wide variety of resources, including: applicable planning documents; on-site visits; interviews with airport staff, tenants, and users; aerial and ground photography; federal, state, and local publications; and project record drawings. Specific sources are those listed below; environmental resources are detailed at the end of this chapter.

CHANDLER MUNICIPAL AIRPORT CHD

Inventory Source Documents:

- Chandler Municipal Airport *2007 Airport Master Plan Update*
- City of Chandler's airport website[1]
- Chandler Municipal Airport FAA Form 5010, *Airport Master Record*
- FAA Operations & Performance Data, Operations Network (OPSNET)
- *Chandler General Plan 2016*, passed and adopted by the Mayor and City Council on April 14, 2016
- Maricopa Association of Governments *2040 Regional Transportation Plan Update,* December 19, 2019 (Draft)

AIRPORT SETTING

LOCALE

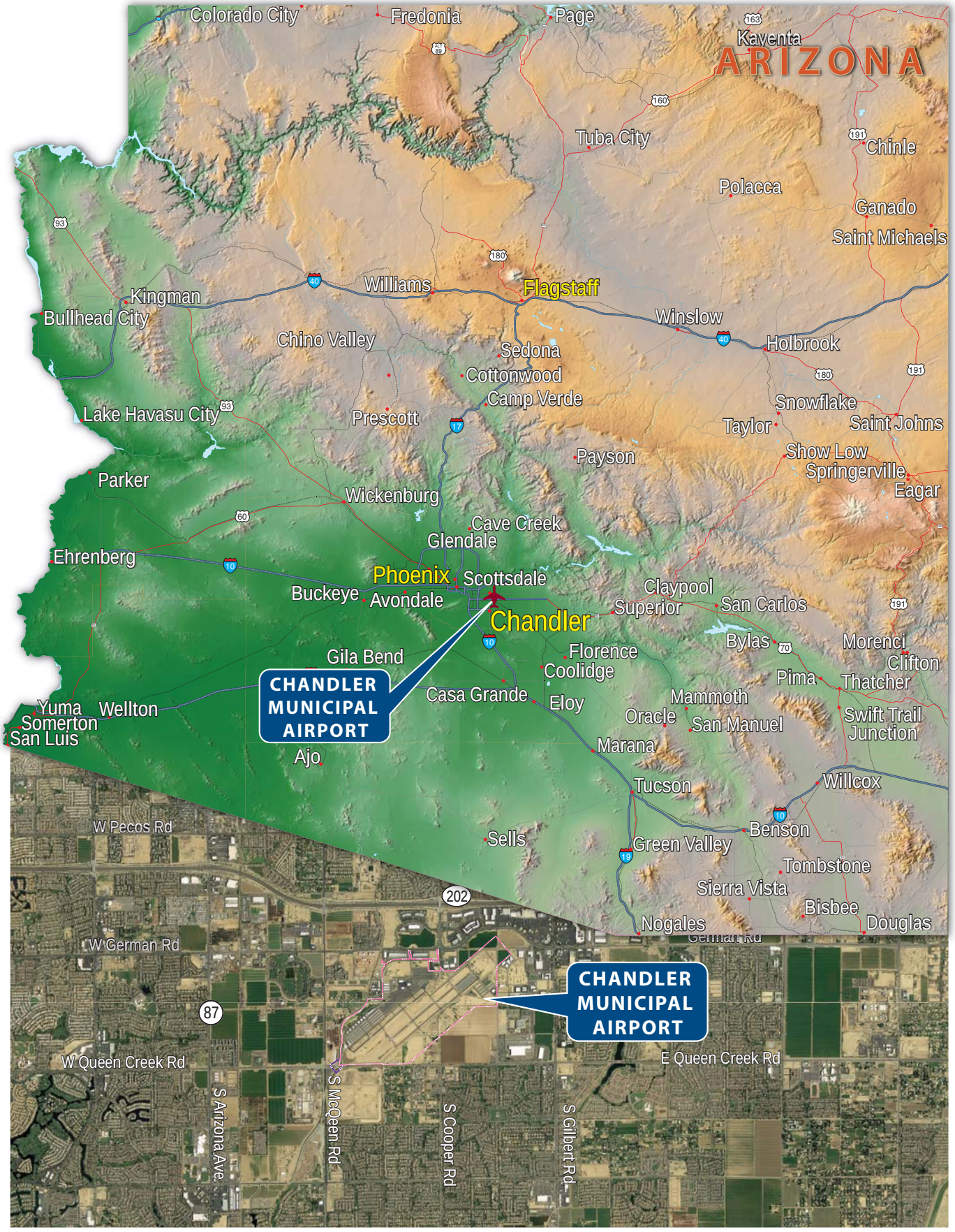
The Chandler Municipal Airport is located within the City of Chandler, Arizona. With a current population of 263,165[2] as of January 1, 2020, Chandler is the third largest city (after Phoenix and Mesa) among the communities that make up the Phoenix metropolitan area, also known as the "Valley of the Sun." Located in Maricopa County, the City of Chandler is represented in the Maricopa Association of Governments (MAG), which serves as the regional planning agency for the Phoenix metropolitan area. Chandler's Community Vision, as outlined in its *Chandler General Plan 2016* is as follows:

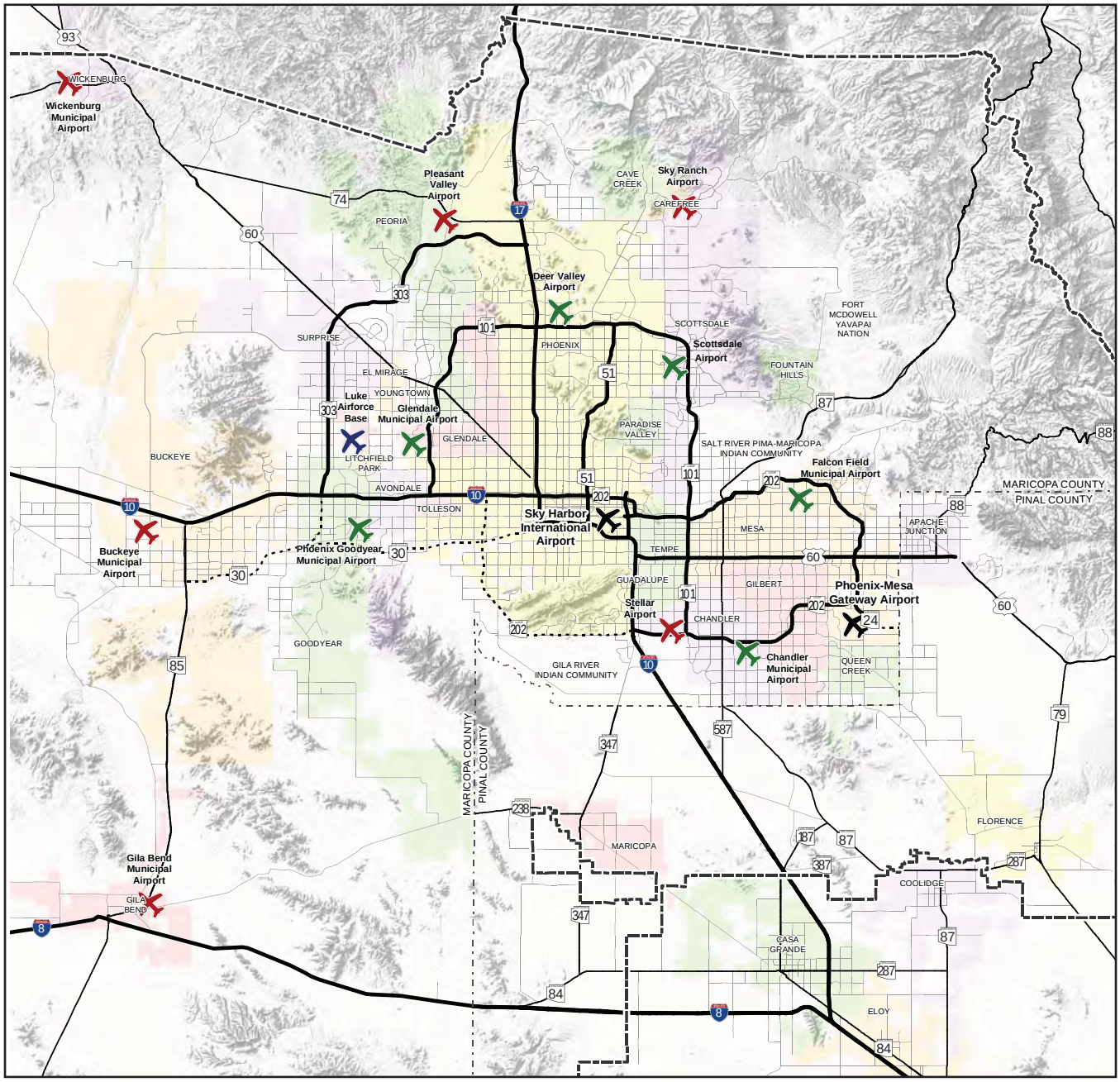
> "The City of Chandler is a major urban center reaching build-out over the next few decades, which requires a shift from outward growth to quality community building. Chandler is connected by an efficient regional system and local multimodal transportation network. The city is the recognized leader for its strong economic foundation, desirable neighborhoods, and outstanding public services and its leaders remain focused on quality, sustained planning that ensures a future better than today. Chandler is a regional employment center and important Arizona economic driver; its world-class corporations, emerging technology businesses, and next-generation entrepreneurs call Chandler home because of its well-educated workforce, exceptional educational achievement and opportunities, and superior quality of life."

CHD is situated on approximately 532.5 acres three miles southeast of downtown Chandler and approximately 20 miles southeast of downtown Phoenix. The airport sits at an elevation of 1,243.1 feet above mean sea level (MSL). The surrounding major surface roadways include East Germann Road to the north; East Queen Creek Road to the south; South Gilbert Road to the east and South McQueen Road and Airport Boulevard to the west. The front side of **Exhibit 1A** depicts the airport in its regional setting. The back side of the exhibit depicts CHD within the regional aviation system[3], including the various airports serving the Phoenix metropolitan area.

Airport property consists of 28 separate parcels, each of which are identified on **Exhibit 1B**. Data for each parcel, including its acreage, deed date recording information, grantor/deed type, and state/federal grant information is summarized in **Table 1A**.

[1] https://www.chandleraz.gov/business/chandler-municipal-airport\
[2] *City of Chandler Community Profile and Demographics*, retrieved January 16, 2020 from, https://www.chandleraz.gov/explore/living-in-chandler/community-profile-and-demographics
[3] Regional Aviation System map sourced from the *2040 Regional Transportation Plan Update*, MAG, as revised on October 29, 2019.


Colorado City
Fredonia
Page
Kaventa
ARIZONA
Tuba City
Chinle
Polacca
Ganado
Saint Michaels
Kingman
Bullhead City
Williams
Flagstaff
Winslow
Holbrook
Chino Valley
Sedona
Cottonwood
Camp Verde
Snowflake
Taylor
Saint Johns
Lake Havasu City
Prescott
Payson
Show Low
Springerville
Eagar
Parker
Wickenburg
Cave Creek
Glendale
Ehrenberg
Phoenix
Scottsdale
Buckeye
Avondale
Chandler
Claypool
Superior
San Carlos
Bylas
Morenci
Clifton
Thatcher
Gila Bend
Florence
Coolidge
Pima
Casa Grande
Eloy
Mammoth
Oracle
San Manuel
Swift Trail Junction
Yuma
Wellton
Somerton
San Luis
Ajo
Marana
Tucson
Willcox
Benson
Sells
Green Valley
Tombstone
Sierra Vista
Bisbee
Douglas
Nogales
W Pecos Rd
W German Rd
W Queen Creek Rd
E Queen Creek Rd
S Arizona Ave
S McQueen Rd
S Cooper Rd
S Gilbert Rd
CHANDLER MUNICIPAL AIRPORT
CHANDLER MUNICIPAL AIRPORT



LEGEND

Airports

- Commercial Service
- Military
- General Aviation Reliever
- General Aviation

Other Features

- Existing Freeway
- Planned Freeway/Highway
- Highways
- Metropolitan Planning Area
- County Boundary

Disclaimer: While every effort has been made to ensure the accuracy of this information, the Maricopa Association of Governments (MAG) makes no warranty, expressed or implied, as to its accuracy and expressly disclaims liability for the accuracy thereof.

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rev. 10/29/2019

2040 Regional Transportation Plan Update, Maricopa Association of Governments.

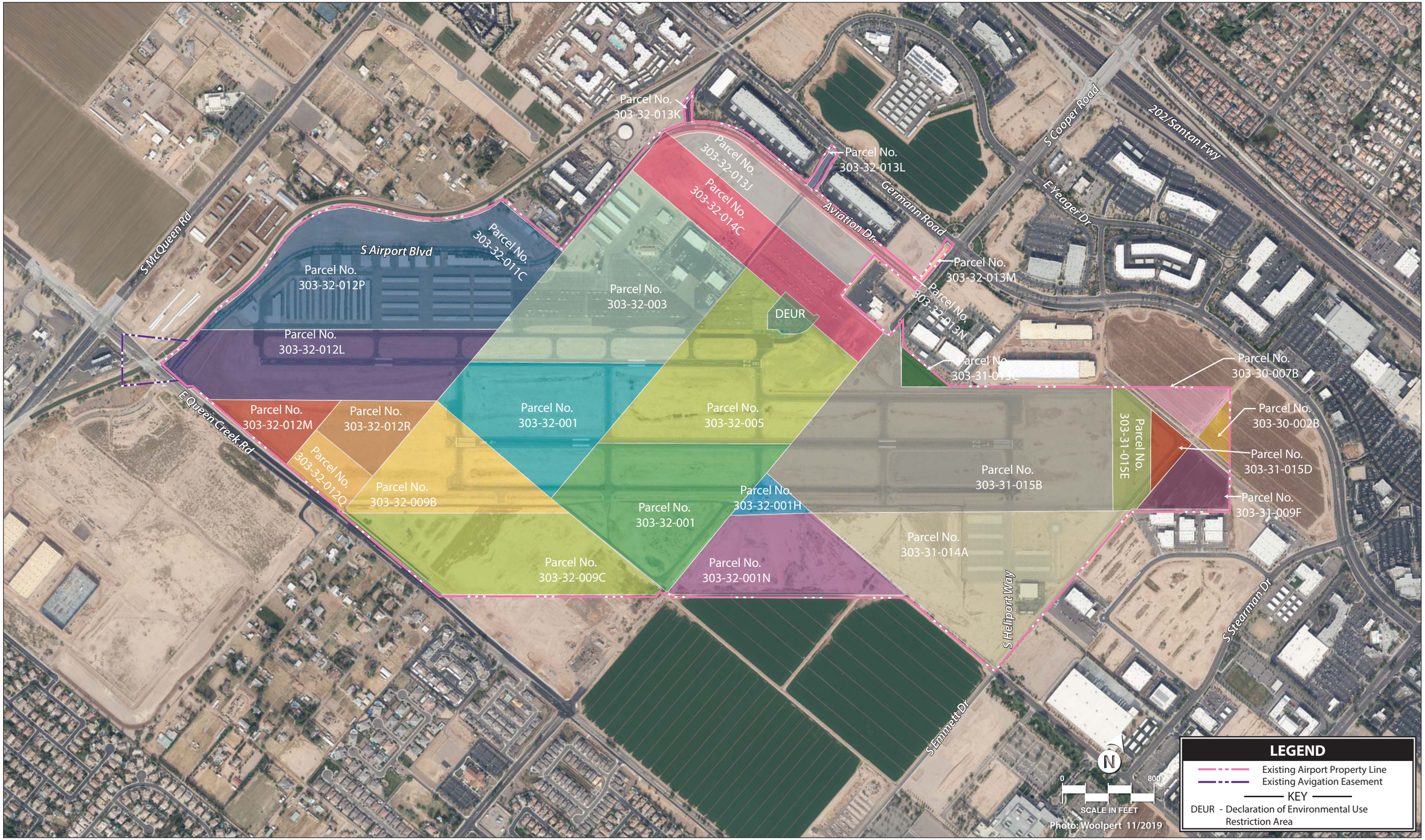
Parcel No. 303-32-013K
Parcel No. 303-32-013J
Parcel No. 303-32-014C
Parcel No. 303-32-013L
Germann Road
Aviation Dr
S Cooper Road
202/Santan Fwy
E Yeager Dr
Parcel No. 303-32-013M
Parcel No. 303-32-013N
Parcel No. 303-31-013C
Parcel No. 303-30-007B
Parcel No. 303-30-002B
Parcel No. 303-31-015D
Parcel No. 303-31-009F
Parcel No. 303-31-015E
Parcel No. 303-31-015B
Parcel No. 303-31-014A
S Heliport Way
S Stearman Dr
S Emmett Dr
S McQueen Rd
S Airport Blvd
Parcel No. 303-32-011C
Parcel No. 303-32-012P
Parcel No. 303-32-012L
Parcel No. 303-32-003
DEUR
E Queen Creek Rd
Parcel No. 303-32-012M
Parcel No. 303-32-012R
Parcel No. 303-32-012Q
Parcel No. 303-32-009B
Parcel No. 303-32-009C
Parcel No. 303-32-001
Parcel No. 303-32-001
Parcel No. 303-32-005
Parcel No. 303-32-001H
Parcel No. 303-32-001N
N
0
800
SCALE IN FEET
Photo: Woolpert 11/2019
LEGEND
Existing Airport Property Line
Existing Avigation Easement
KEY
DEUR - Declaration of Environmental Use Restriction Area

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TABLE 1A
Airport Property Data
Chandler Municipal Airport

Parcel No.	Acres	Deed Date	Grantor/Deed Type	Grant Info
303-32-005	39	5/18/1948	State of Arizona / Warranty	FAAP 9-02-008-6604, 7-14-1959
303-32-001	40	5/28/1948	State of Arizona / Warranty	FAAP 9-02-008-6604, 7-14-1959
303-32-002	39	5/28/1948	State of Arizona / Warranty	FAAP 9-02-008-6604, 7-14-1959
303-32-003	38.96	5/28/1948	State of Arizona / Warranty	FAAP 9-02-008-6604, 7-14-1959
303-32-012L	31.8	1/27/1975	Roosevelt Water Conservation District / Warranty	AIP-3-04-0008-01, 9-24-1984
303-32-011C	6.625	10/24/1985	Roosevelt Water Conservation District / Warranty	N/A
303-32-012P	44.834	3/3/1986	Roosevelt Water Conservation District / Warranty	AIP-3-04-0008-06, 5-18-1989
303-32-012Q	6	12/31/1986	D.J. Patterson / Warranty	AIP-3-04-0008-07, 7-25-1991
303-32-012R	8.914	12/31/1986	D.J. Patterson / Warranty	ADAP-5-04-0008-02, 9-30-1978
303-32-012M	7.83	9/6/1987	Queen Creek Trust / Warranty	AIP-3-04-0008-03, 9-26-1986
303-32-001R	1.464	11/2/1987	Spitler / Warranty	AIP-3-04-0008-03, 9-25-1986
303-32-009B	21.043	3/31/1988	John Demetria LTD. / Warranty	AIP-3-04-0008-04, 8-25-1987
303-31-009F	6.971	6/10/1988	Chandler Airpark Limited Partnership / Warranty	AIP-3-04-0008-04, 8-25-1987
303-30-002B	2.416	7/7/1988	Exeter Real Estate Investors / Warranty	AIP-3-04-0008-04, 8-25-1987
303-30-007B	4.16	7/22/1988	D.W. Patterson / Warranty	AIP-3-04-0008-105, 6-23-1988
303-31-015B	70	9/2/1988	D.W. Patterson / Warranty	AIP-3-04-0008-08, 8-25-1987 and 6-23-1988
303-31-015D	3	8/31/1990	D.W. Patterson / Warranty	AIP-3-04-0008-06, 5-18-1989
303-31-015E	6.728	8/31/1990	D.W. Patterson / Warranty	AIP-3-04-0008-06, 5-18-1989
303-32-014C	19.536	1/4/1993	D.W. Patterson / Warranty	AIP-3-04-0008-06, 5-18-1989
303-31-013C	1.72	1/4/1993	C. Max Killian / Special Warranty Deed	-
303-31-014A	46.589	6/11/1993	D.W. Patterson / Special Warranty Deed	AIP-3-04-0008-08, 6-25-1992
303-32-009C	35.702	1/26/1994	Airport Associates LTD. Liability Company / Warranty	AIP-3-04-0008-09, 9-23-1993
303-31-001N	22.076	9/12/1994	R & E Farms / Special Warranty Deed	AIP-3-04-0008-08, 6-25-1992
303-32-013J	24.65	5/29/2002	AJ Chandler Air Park LLC / Warranty	AIP-3-04-0008-11, ADOT E1135 ADOT E1102, 7-14-2000, 7-1-2000, and 4-2-2001
303-32-013K	0.21	5/29/2002	AJ Chandler Air Park LLC / Warranty	AIP-3-04-0008-11, ADOT E1135 ADOT E1102, 7-14-2000, 7-1-2000, and 4-2-2001
303-32-013L	0.71	5/29/2002	AJ Chandler Air Park LLC / Warranty	AIP-3-04-0008-11, ADOT E1135 ADOT E1102, 7-14-2000, 7-1-2000, and 4-2-2001
303-32-013M	0.43	5/29/2002	AJ Chandler Air Park LLC / Warranty	AIP-3-04-0008-11, ADOT E1135 ADOT E1102, 7-14-2000, 7-1-2000, and 4-2-2001
303-32-013N	2.11	5/29/2002	AJ chandler Air Park LLC / Warranty	AIP-3-04-0008-11, ADOT E1135 ADOT E1102, 7-14-2000, 7-1-2000, and 4-2-2001
Total Acreage	**532.478**			

ADAP | Airport Development Aid Program (federal)
ADOT | Arizona Department of Transportation (state)
AIP | Airport Improvement Program (federal)
FAAP | Federal Aid to Airports Program (federal)
Note: The total acreage shown in this table is the cumulative sum of the above described parcels, whose acreages were obtained from legal descriptions and other legal documents obtained through the title search, referred to in the "Notice" block.
Source: CHD Airport Property Map, November 22, 2016.

AIRPORT HISTORY

CHD was opened in 1948 with federal aid and consisted of a single runway (Runway 18-36). In 1960 the City constructed a new runway with a northeast-southwest orientation (existing Runway 4L-22R). The

entire development at the airport has been constructed and funded under the auspices of the City of Chandler.

Figure 1A highlights significant moments in the airport's history.

City Ordinance No. 3888. - The City Council of the City of Chandler amended the Chandler City Code on December 7, 2006 to "guarantee to the citizens of the City of Chandler the continued quiet enjoyment in and to the homes, schools, churches and work places, the Chandler Municipal Airport shall not be permitted to accommodate, in any fashion, aircraft which require for takeoff a runway longer than 5,700 feet. Extension of the runway shall require voter approved bonds, which specify that the bond monies are for the purpose of extending the runway. In addition, the Chandler Municipal Airport shall not be designed to accommodate aircraft that weigh in excess of 75,000 pounds maximum gross weight, and/or have a wingspan of 79 feet or more."

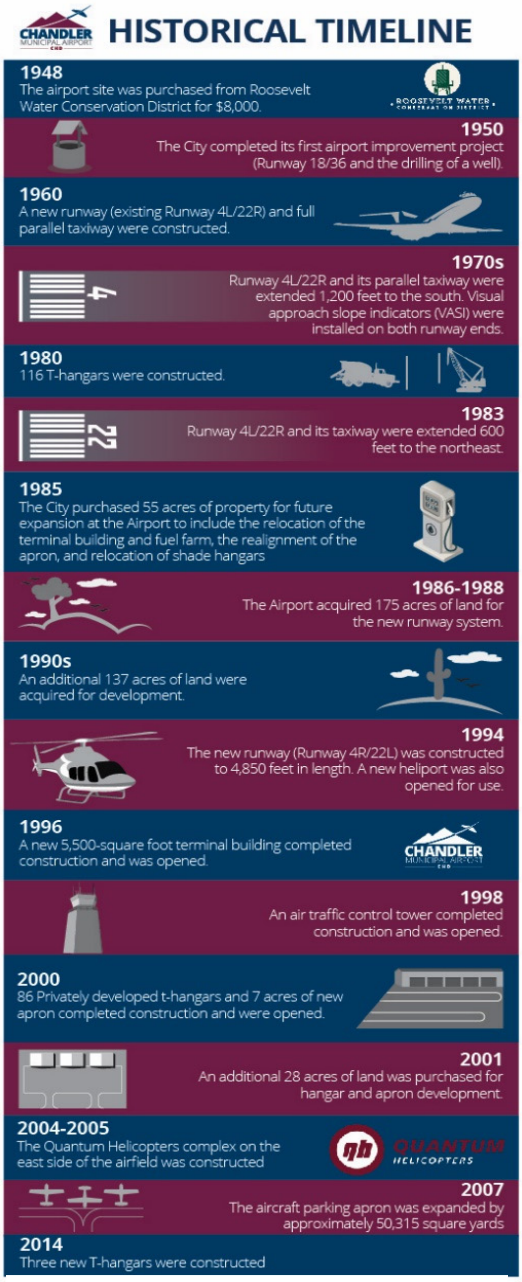


FIGURE 1A – CHD HISTORICAL TIMELINE

AIRPORT ADMINISTRATION

CHD is governed by the Chandler City Council, which is advised by the Airport Commission (Commission). The Commission was established by the City on September 23, 1976, by Ordinance No. 685[4] and consists of seven members appointed by the Mayor and approved by City Council that serve three-year terms. To qualify as a commissioner you must be a resident of Chandler for one year preceding appointment; one member must be a resident of the Sun Lakes community; one Councilmember is appointed to the commission as an ex officio member to serve as a liaison between the Commission and the City Council. The Commission provides policy advice to the City of Chandler Mayor and Council on the planning and operation of CHD and provides a public forum for all parties interested in the airport's planning and operations.

The Airport Manager acts as the chief executive responsible for the operation of the airport and serves as a staff liaison to the Commission. The Airport Manager oversees a staff of six people including the following positions:

[4] The ordinance was updated most recently on December 12, 2012 (Ordinance No. 4419); ByLaws adopted December 2016.

- (1) Airport Planning Administrator
- (1) Airport Business Coordinator
- (1) Airport Operations and Maintenance Supervisor
- (2) Airport Operation and Maintenance Technicians
- (1) Sr. Administrative Assistant

The airport is staffed seven days a week, holidays excepted, from 8:00 a.m. to 5:00 p.m.

CLIMATE

Local weather conditions can significantly impact an airport's operations. Knowledge of the local climate allows an airport to be better prepared for regional conditions and greatly enhances a pilot's flying capabilities. For example, the airport's runway should be oriented to match predominant wind patterns for the area.

Exhibit 1C displays weather and wind patterns at the airport. July has the highest average maximum temperature of 106.1 degrees. December is the coolest month with an average minimum temperature of 44.8 degrees. Rainfall is most plentiful in July, which averages 1.05 inches. Wind speeds are highest on average during the spring months of April and May with May averaging 7.77 knots.

Table 1B indicates that visual meteorological conditions (VMC) occur 99.64 percent of the time. When under VMC conditions, pilots can operate using visual flight rules (VFR) and are responsible for maintaining proper separation from objects and other aircraft. Instrument meteorological conditions (IMC) account for all weather conditions less than VMC conditions that still allow for aircraft to safely operate under instrument flight rules (IFR). Under IFR, pilots rely on instruments in the aircraft to accomplish navigation. IMC conditions occur 0.25 percent of the time. Less than IMC, or poor visibility conditions (PVC), are present 0.11 percent of the time.

TABLE 1B
Weather Conditions
Chandler Municipal Airport

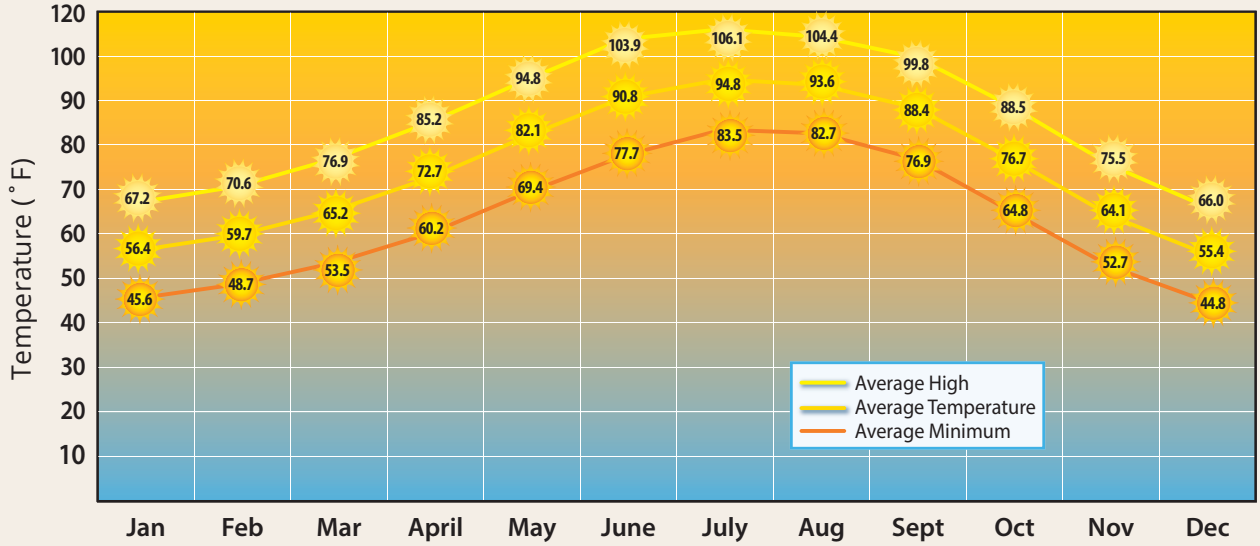
Condition	Cloud Ceiling	Visibility	Percent of Total
VMC	≥ 1,000' AGL	≥ 3 statute miles	99.64%
IMC	≥ 500' AGL and < 1,000' AGL	≥ 1 to < 3 statute miles	0.25%
PVC	< 500' AGL	< 1 statute mile	0.11%

VMC: Visual Meteorological Conditions
IMC: Instrument Meteorological Conditions
PVC: Poor Visibility Conditions
AGL: Above Ground Level
Source: 50,436 All Weather Observations from Jan 1, 2010 thru Dec 31, 2019, Chandler Municipal Airport Weather Station

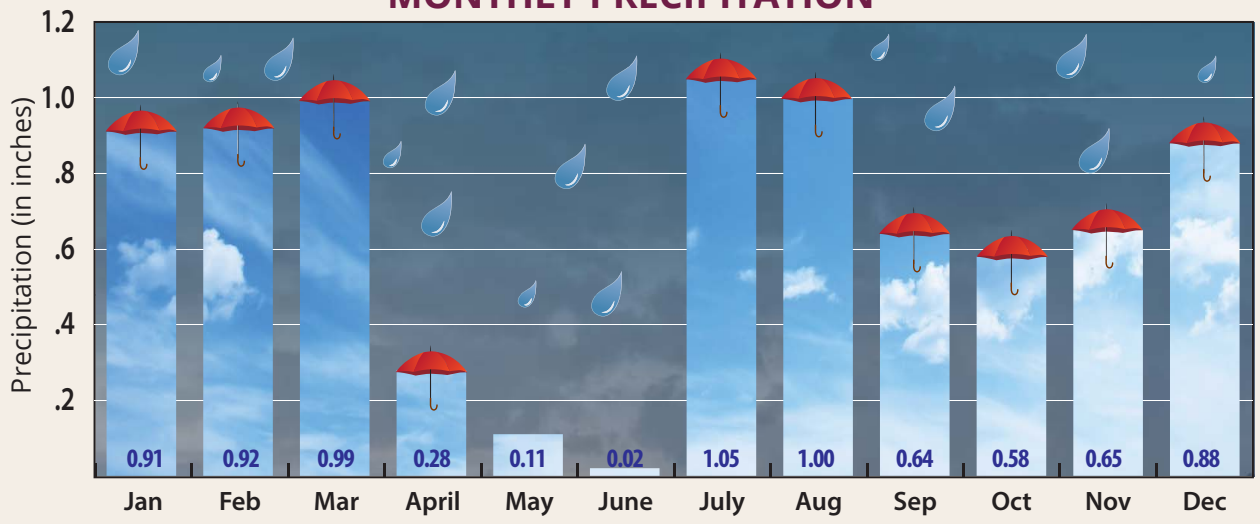
CAPITAL IMPROVEMENT HISTORY

To assist in ongoing capital improvements, the FAA provides funding to CHD through the Airport Improvement Program (AIP).

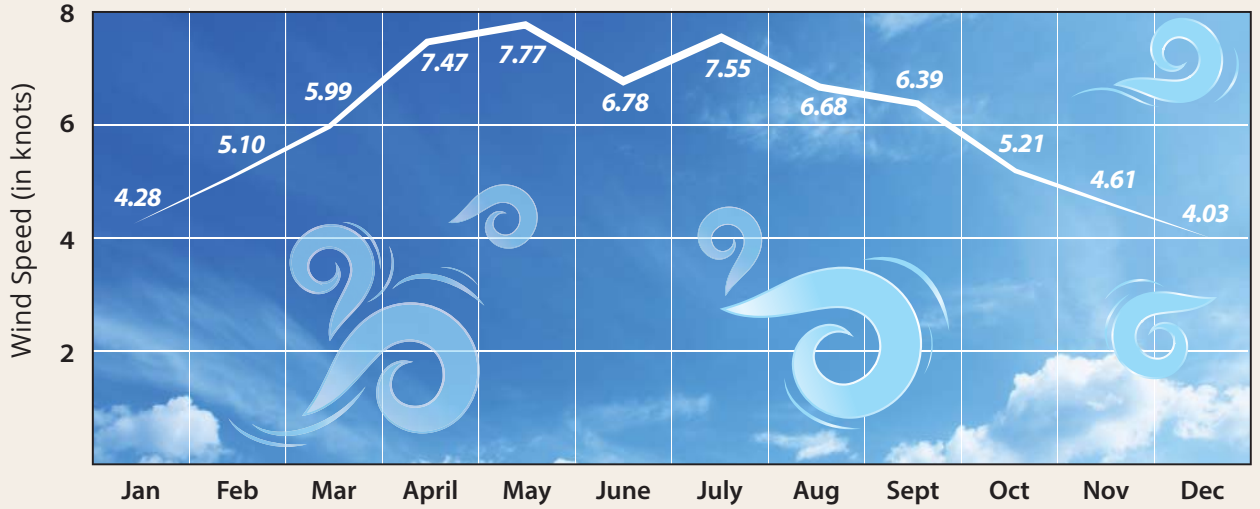
MONTHLY TEMPERATURES



MONTHLY PRECIPITATION



MONTHLY WIND DATA



Source: Phoenix Airport, AZ; GHCND:USW00023183

Table 1C summarizes CHD capital improvement projects undertaken since 2005 that received funding through the FAA's AIP. During this period, the airport received $11.1 million in AIP grants.
Airports that apply for and accept AIP grants must adhere to various grant assurances. These assurances include maintaining the airport facility safely and efficiently in accordance with specific conditions. The duration of the assurances depends on the type of airport, the useful life of the facility being developed, and other factors. Typically, the useful life for an airport development project is a minimum of 20 years. Thus, when an airport accepts AIP grants, they are obligated to maintain that facility in accordance with FAA standards for at least that long.

TABLE 1C
AIP Grant History: 2005 - 2019
Chandler Municipal Airport

Fiscal Year	Grant Number	Work Description	AIP Funds
2005	16	Construct Heliport/Helipad, Install Airfield Guidance Signs	$1,521,960
2006	17	Conduct Noise Compatibility Plan Study	$272,650
2006	18	Construct Access Road	$150,000
2007	19	Construct Apron	$2,709,244
2009	20	Construct Service Road	$323,693
2011	21	Install Weather Reporting Equipment	$75,000
2012	22	Install Weather Reporting Equipment	$200,393
2013	23	Rehabilitate Apron, Rehabilitate Taxiway Lighting	$393,380
2015	24	Improve Airport Drainage	$1,262,432
2018	26	Rehabilitate Apron	$3,671,699
2019	27	Update Airport Master Plan Study	$546,360
		AIP Total (2005-2019)	**$11,126,811**

Source: FAA AIP Grant History; https://www.faa.gov/airports/aip/grant_histories/lookup/

THE AIRPORT'S SYSTEM ROLE

Airport planning takes place at the local, state, and national levels, each of which has a different emphasis and purpose.

- **Local** | CHD has an Airport Master Plan, which was last updated in 2007.
- **State** | CHD is included within the 2006 *Arizona State Airport System Plan* (ASASP). As of 2018, the ASASP is in the process of being updated. ASASP information used in this Master Plan will be updated as new information comes available.
- **National** | CHD is included in the *National Plan of Integrated Airport Systems* (NPIAS), which categorizes overall airport roles and responsibilities based on input from local and state planning efforts (i.e., master plans and state system plans).

LOCAL AIRPORT PLANNING

2007 Airport Master Plan Update **|** The *2007 Airport Master Plan Update* is the primary local planning document that provides a 20-year airport development vision based on aviation demand forecasts. The *2007 Airport Master Plan Update* used 2005 data for its aviation forecasts baseline. The primary recommendations from the *2007 Airport Master Plan Update* included extending Runway 4R-22L by 850 feet,

extension of Taxiway B to the end of Runway 4L, and expansion of landside facilities (aprons/taxilanes/hangars) on the north and southeast sides of the airfield. Since the completion of the previous master plan, the airport has not extended its runway; however, new apron space has been added, new T-hangars have been constructed, and taxiway improvements have been made to meet FAA design standards.

STATE AIRPORT PLANNING

The primary planning document for the State of Arizona is the SASP, which was last updated in October 2018. The SASP focuses on keeping Arizona's airports highly advanced, safe, and responsive to the public's needs today and throughout the 20-year planning horizon. CHD is classified as a reliever airport within the SASP. The SASP definition for a reliever airport is identical to the NPIAS definition, which is an airport that relieves congestion at a commercial service airport. In CHD's case, its purpose is to relieve congestion from Phoenix Sky Harbor International Airport (PHX).

FEDERAL AIRPORT PLANNING

Many of the nation's existing airports were either initially constructed by the federal government or their development and maintenance was partially funded through various federal grant-in-aid programs to local communities. The system of airports existing today is, therefore, due, in large part, to federal policy that promotes the development of civil aviation. As part of a continuing effort to develop a national airport system, the U.S. Congress has maintained a national plan for the development and maintenance of airports.

The FAA maintains a database of airports that are eligible for AIP funding and are for public use called the *National Plan of Integrated Airport Systems* (NPIAS). The NPIAS is published and used by the FAA in administering the AIP, which is the source of federal funds for airport improvement projects across the country. The AIP is funded exclusively by user fees and user taxes, such as those on fuel and airline tickets. An airport must be included in the NPIAS to be eligible for federal funding assistance through the AIP.

The most current plan is the NPIAS 2019-2023, which identified 3,328 public-use airports (3,321 existing and 7 proposed) that are important to national air transportation. The plan estimates that approximately $35.1 billion in AIP-eligible airport projects will require financial assistance between 2019 and 2023.

The NPIAS categorizes airports by the type of activities that take place, including commercial service, cargo service, reliever operations, and general aviation. CHD is currently classified as a reliever airport in the FAA's NPIAS. Due to different operating requirements between small general aviation aircraft and large commercial aircraft, general aviation pilots often find it difficult to use a congested commercial service airport. In recognition of this, the FAA has encouraged the development of high-capacity general aviation airports in major metropolitan areas. These specialized airports, called relievers, provide pilots with attractive alternatives to using congested hub airports. They also provide general aviation access to the surrounding area. To be eligible for reliever designation, these airports must be open to the public, have 100 or more based aircraft, or have 25,000 annual itinerant operations. There are 261 reliever airports within the NPIAS with an average of 177 based aircraft, which in total represents 23 percent of the nation's general aviation fleet.

ECONOMIC IMPACT OF AIRPORTS

In March 2016, the City of Chandler completed an update to its Economic Impact Study for CHD. The study surveyed all airport employers, including the City, and estimated the impact of visitors arriving via CHD using state and hospitality industry data. The results are categorized as either direct or secondary (indirect/induced). Direct impacts are revenues or jobs created by airport employers and air visitors on airport property. Indirect impacts are goods and services purchased in the region with initial business revenues. Induced impacts are spending generated by direct and indirect business revenues. The results of the Economic Impact Study for CHD are summarized in **Table 1E**.

TABLE 1E
Economic Impact
Chandler Municipal Airport

	Revenues (millions)	Payroll (millions)	Jobs
Direct Airport Employer Impacts	$32.52	$6.89	163
Direct Air Visitor Impacts	$34.04	$9.385	312
Secondary Indirect & Induced Impacts	$42.5	$15.184	320
Total Economic Impacts	**$109.06**	**$31.45**	**795**

Source: Chandler Municipal Airport Economic Impact Analysis, March 2016.

AIRPORT FACILITIES AND SERVICES

There are four broad categories of facilities and services at the Airport: airfield, landside, aviation, and support.

- **Airfield facilities** | facilities directly associated with aircraft operations, including runways, taxiways, lighting, markings, navigational aids, and weather reporting.
- **Landside facilities** | facilities necessary to provide a safe transition from surface to air transportation and support aircraft parking, servicing, storage, maintenance, and operational safety.
- **Support facilities** | serve as a critical link to provide the necessary efficiency to aircraft ground operations, such as fuel storage, airport maintenance, firefighting, and fencing.

AIRFIELD FACILITIES

RUNWAYS

CHD has a parallel runway system; Runway 4R-22L is the primary runway and Runway 4L-22R is the secondary runway oriented in a northeast/southwest manner. Information pertaining to both runways is summarized below and on **Exhibit 1D** (front side identifies facilities and back side summarizes pavement conditions). Pavement conditions depicted are a result of an airfield pavement inspection of CHD conducted on May 1, 2017.[5]

[5] The airfield pavement visual inspection was conducted as part of the Arizona Airport Pavement Management System, 2017. PCI ratings range from 0 (failed) to 100 (excellent).

Primary Runway 4R-22L | Runway 4R-22L is paved with asphalt and measures 4,870 feet long and 75 feet wide and has a single wheel (SWL) strength of 30,000 pounds (Pavement Classification Number [PCN] data was not available). The runway has non-precision pavement markings that include a runway end designation, threshold markings, centerline, edge markings, and aiming points. Runway lighting/approach aid systems available include medium intensity runway lighting (MIRL), runway end identifier lights (REILs), and precision approach path indicator (PAPI-4) systems at both ends. The runway slopes down from the 22R end at a gradient of 0.15 percent. Both ends of the runway have 90-foot stopways.[6] The primary runway underwent its most recent maintenance/repair project in January 2020, which was a crack seal and overlay. As of the 2017 pavement inspection, the primary runway was found to have a Pavement Condition Index (PCI) rating of 74 with low and medium severity longitudinal and transverse cracking. Runway 4R-22L has a total pavement area of 440,565 square feet.

Secondary Runway 4L-22R | Runway 4L-22R is constructed of asphalt and measures 4,401 feet long and 75 feet wide and has a SWL strength of 30,000 pounds (PCN data was not available). The runway has basic runway pavement markings including the runway end designation, centerline, edge markings, and aiming points. Runway lighting/approach aid systems available include MIRL and PAPI-4s. The runway slopes down from the 22L end at a gradient of 0.12 percent. This runway is not equipped with stopways and was last rehabilitated on November 3, 2015 when a 1-inch asphalt overlay was applied. As of the 2017 pavement inspection, the secondary runway was found to have a PCI rating of 98 with low severity longitudinal and transverse cracking. Runway 4L-22R has a total pavement area of 328,490 sf.

The parallel runway centerlines are separated by 700 feet, which allows for simultaneous visual flight rule[7] (VFR) operations. Simultaneous operations during instrument flight rule[8] (IFR) conditions are not permitted at CHD.

HELIPAD

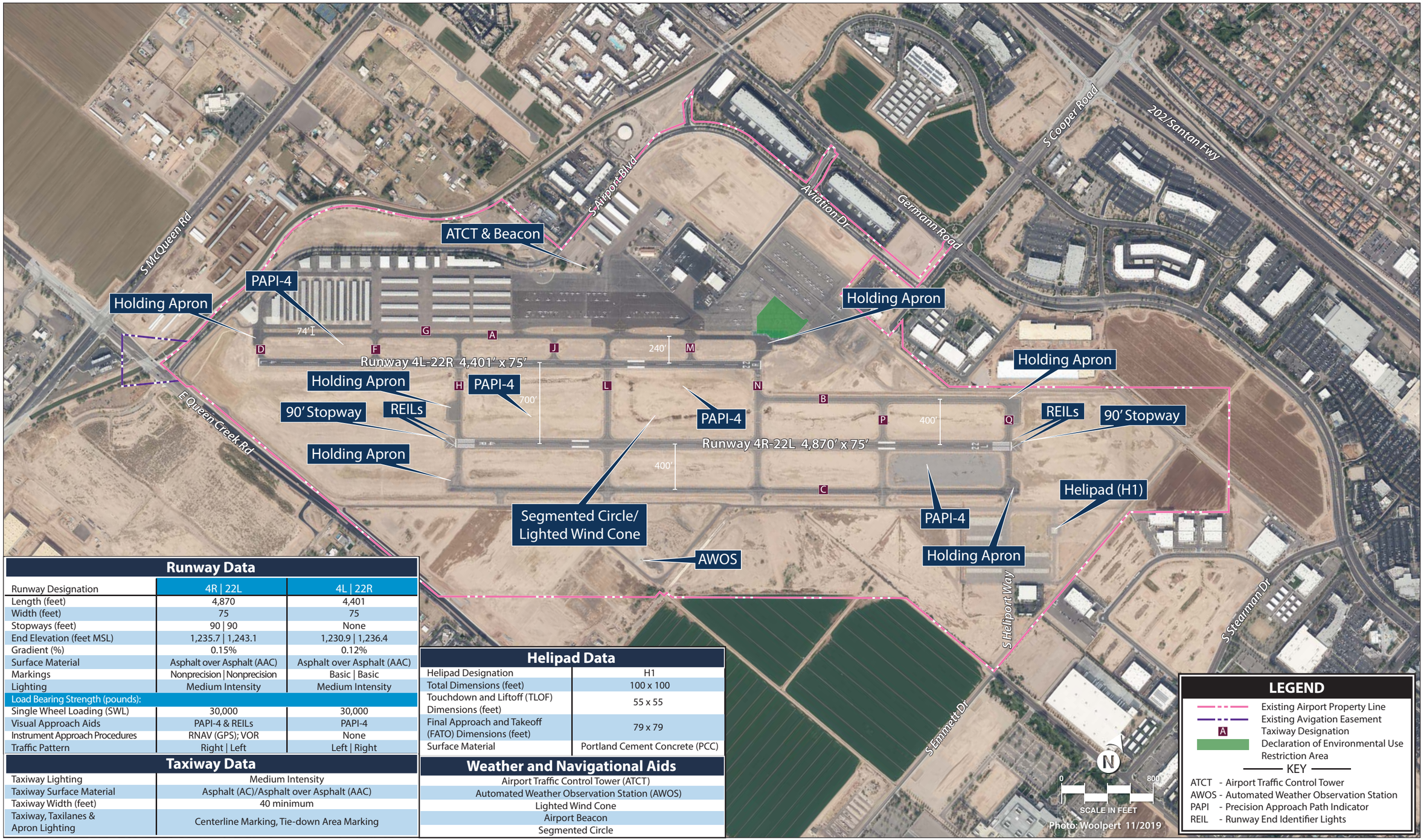
CHD has a helipad, designated H1, located on the south side of the airfield. The helipad is constructed of concrete with a touchdown and liftoff (TLOF) area measuring 55 feet by 55 feet and a final approach and takeoff (FATO) area measuring 79 feet by 79 feet. The helipad is lighted and equipped with a visual approach aid and a lighted wind cone.



TAXIWAYS

The taxiway system at CHD consists of parallel and connector taxiways constructed of asphalt or asphalt overlaid asphalt (AAC) with widths of 40 feet or greater. All taxiways are lighted with blue medium intensity taxiway lighting (MITL) and have yellow centerline markings. Parallel taxiways at CHD include

[6] Stopways are areas beyond the takeoff runway centered on the extended runway centerline and designated for use in decelerating an aircraft during an aborted takeoff.
[7] VFR conditions are periods when there is at least 1,000-foot cloud ceilings and three miles visibility.
[8] IFR conditions are periods when weather conditions are less than VFR.



Runway Data		
Runway Designation	4R | 22L	4L | 22R
Length (feet)	4,870	4,401
Width (feet)	75	75
Stopways (feet)	90 | 90	None
End Elevation (feet MSL)	1,235.7 | 1,243.1	1,230.9 | 1,236.4
Gradient (%)	0.15%	0.12%
Surface Material	Asphalt over Asphalt (AAC)	Asphalt over Asphalt (AAC)
Markings	Nonprecision | Nonprecision	Basic | Basic
Lighting	Medium Intensity	Medium Intensity
Load Bearing Strength (pounds):		
Single Wheel Loading (SWL)	30,000	30,000
Visual Approach Aids	PAPI-4 & REILs	PAPI-4
Instrument Approach Procedures	RNAV (GPS); VOR	None
Traffic Pattern	Right | Left	Left | Right

Taxiway Data	
Taxiway Lighting	Medium Intensity
Taxiway Surface Material	Asphalt (AC)/Asphalt over Asphalt (AAC)
Taxiway Width (feet)	40 minimum
Taxiway, Taxilanes & Apron Lighting	Centerline Marking, Tie-down Area Marking

Helipad Data	
Helipad Designation	H1
Total Dimensions (feet)	100 x 100
Touchdown and Liftoff (TLOF) Dimensions (feet)	55 x 55
Final Approach and Takeoff (FATO) Dimensions (feet)	79 x 79
Surface Material	Portland Cement Concrete (PCC)

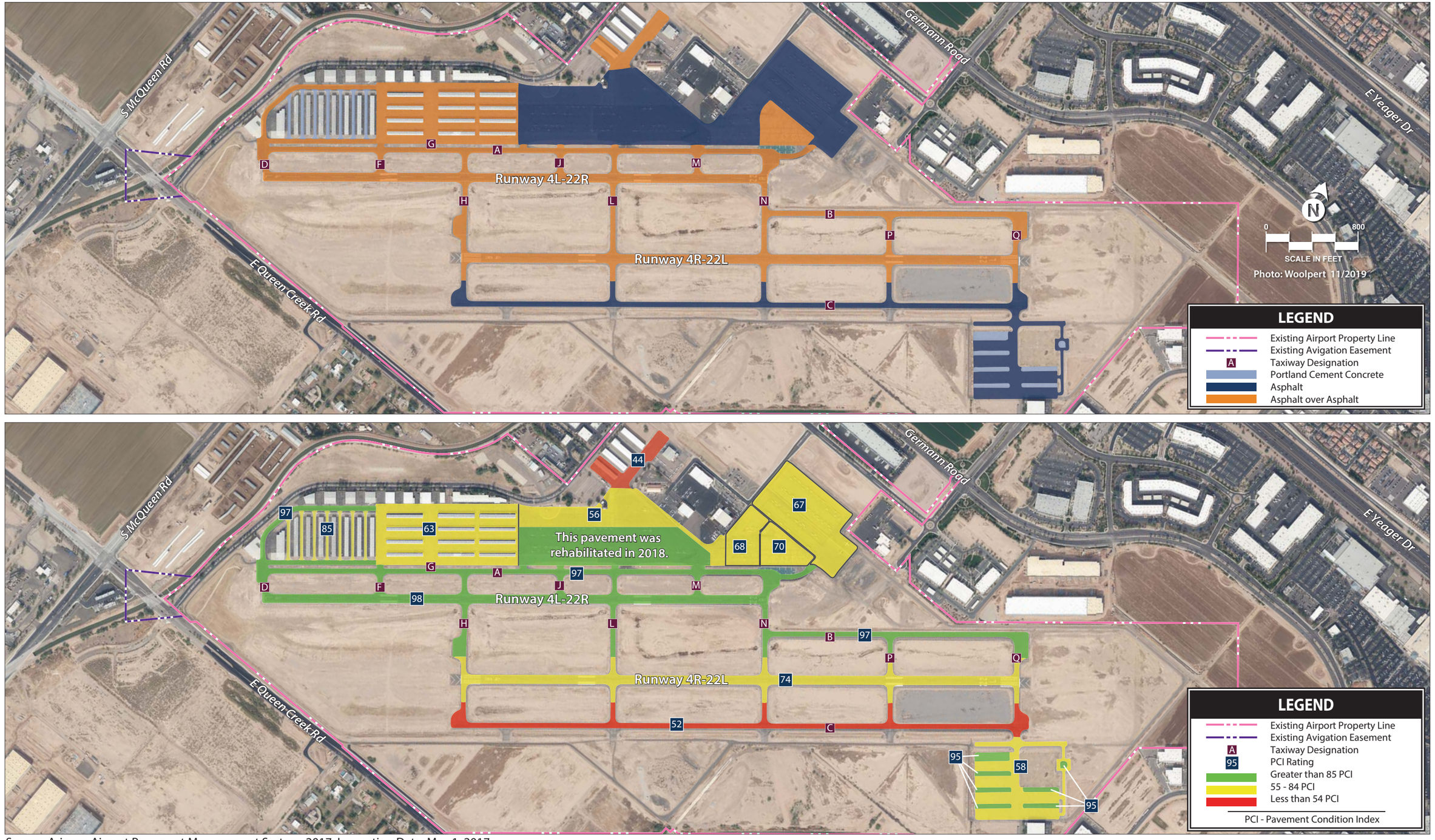
Weather and Navigational Aids
Airport Traffic Control Tower (ATCT)
Automated Weather Observation Station (AWOS)
Lighted Wind Cone
Airport Beacon
Segmented Circle

LEGEND

- Existing Airport Property Line
- Existing Avigation Easement
- A — Taxiway Designation
- Declaration of Environmental Use Restriction Area

KEY

ATCT - Airport Traffic Control Tower
AWOS - Automated Weather Observation Station
PAPI - Precision Approach Path Indicator
REIL - Runway End Identifier Lights



Source: Arizona Airport Pavement Management System, 2017, Inspection Date: May 1, 2017

Taxiway A, Taxiway B, and Taxiway C. Taxiway A is a full-length parallel on the north side of Runway 4L-22R with a separation distance of 240 feet from the runway centerline. Taxiway B is a partial-parallel taxiway located between the parallel runways extending from the Runway 22L end to Taxiway N for a length of approximately 2,220 feet. Taxiway B has a separation distance of 400 feet from the Runway 4R-22L centerline. Taxiway C is a full-length parallel on the south side of Runway 4R-22L with a separation distance of 400 feet from the runway centerline. The taxiway system along with PCI ratings for each pavement section are identified on **Exhibit 1D**.

AIRFIELD LIGHTING

Airfield lighting systems extend an airport's usefulness into periods of darkness and/or poor visibility. A variety of lighting systems are installed at the airport for this purpose. These lighting systems, categorized by function, are summarized as follows.

Airport Identification Lighting

The location of the airport at night is universally identified by a rotating beacon. The rotating beacon projects two beams of light, one white and one green, 180 degrees apart. The beacon operates from sunset to sunrise and is located on top of the airport traffic control tower (ATCT) on the north side of the airfield.

Pavement Edge Lighting

Pavement edge lighting defines the lateral limits of the pavement to ensure safe operations during night and/or times of low visibility, which maintains safe and efficient access to and from the runway and aircraft parking areas. Both runways at CHD are equipped with medium intensity runway lighting (MIRL). The MIRL for the primary runway emit white light except in the caution zone,[9] which is the last 2,000 feet of runway where yellow light is emitted in the direction facing the Runway 4R threshold and white light in the opposite direction. The secondary runway is a visual-only runway, so it does not have a caution zone. Each end of both runways is equipped with threshold lights, which emit green light outward from the runway and emit red light toward the runway. Green lights indicate the landing threshold to arriving aircraft and red lights indicate the end of the runway for departing aircraft.



MITL FIXTURE

The entirety of the taxiway system at CHD is equipped with elevated blue medium intensity taxiway lights (MITL).

[9] Yellow lights in the caution zone indicate caution on rollout after landing.

Visual Approach Aid

Visual approach aids are installed at airports to assist pilots in determining the correct descent path to the runway end during landing. Each runway end at CHD is equipped with a four-box precision approach path indicator (PAPI-4) system. PAPIs have an effective visual range of three miles during the day and 20 miles at night. The Runway 4R, 22L, and 22R PAPIs have standard 3.00-degree glide paths and the Runway 4L PAPI has a 3.50-degree glide path, which is in place to clear a pole obstruction located 980 feet from the runway and 90 feet right of centerline.

Runways 4R and 22L are both equipped with runway end identifier lights (REILs). REILs help pilots identify the ends of the runway in areas having a large concentration of light.



PAPI-4

Pilot-Controlled Lighting

During nighttime hours when the ATCT is closed (9:00 p.m. to 6:00 a.m.), pilots can use the pilot-controlled lighting (PCL) system to activate the MIRL and visual approach aids available on both runways from their aircraft through a series of clicks of their radio transmitter using the common traffic advisory frequency (CTAF) (126.1 MHz).

Airfield Signage

Airfield identification signs assist pilots in identifying runways, taxiway routes, holding positions, and critical areas. The airfield at CHD is equipped with lighted location, directional, and mandatory instruction signs.



AIRFIELD SIGNAGE

NAVIGATIONAL AIDS

Navigational aids are electronic devices that transmit radio frequencies that pilots in properly

equipped aircraft can translate into point-to-point guidance and position information. The types of electronic navigational aids available for aircraft flying to/from CHD include the very-high frequency omnidirectional range (VOR), and global positioning system (GPS).

A VOR provides azimuth readings to pilots of properly equipped aircraft by transmitting a radio signal at every degree to provide 360 individual navigational courses. Frequently, distance measuring equipment (DME) is combined with a VOR facility to provide distance as well as direction information to the pilot. Military tactical air navigation aids (TACANs) and civil VORs are commonly combined to form a VORTAC. The VORTAC provides distance and direction information to both civil and military pilots. The CHD and greater Phoenix area is served by three VORTACs (Willie – 8.3 miles east of CHD; Phoenix – 12.7 miles north of CHD; Stanfield – 23.5 miles south of CHD). The Willie VORTAC supports a non-precision instrument approach to Runway 4R at CHD.

The U.S. Department of Defense initially developed the global positioning system (GPS) for military navigation around the world. Now, GPS is used extensively for a wide variety of civilian uses, including civil aircraft navigation. GPS uses satellites placed in orbit around the globe to transmit electronic signals, which pilots of properly equipped aircraft use to determine altitude, speed, and navigational information. This provides more freedom in flight planning and allows for more direct routing to the destination. GPS provides for enroute navigation and a non-precision localizer navigation (LNAV) instrument approach to Runway 4R at CHD.

WEATHER AND COMMUNICATION

CHD is served by an automated weather observation station (AWOS). The system updates weather observations every minute, continuously reporting changes by calling (480) 814-9952. The AWOS reports cloud ceiling, visibility, temperature, dew point, wind direction, wind speed, altimeter setting (barometric pressure), and density altitude (airfield elevation corrected for temperature). The AWOS is located on the south side of the airfield approximately 780 feet from the Runway 4R-22L centerline.

CHD also has a lighted wind cone and segmented circle located at midfield between Taxiways L and N. The wind cone informs pilots of the wind direction and speed, while the segmented circle indicates aircraft traffic pattern information.

AREA AIRSPACE AND AIR TRAFFIC CONTROL

The *FAA Act of 1958* established the FAA as the responsible agency for the control and use of navigable airspace within the U.S. The FAA has established the National Airspace System (NAS) to protect persons and property on the ground, in addition to establishing a safe and efficient airspace environment for civil, commercial, and military aviation. The NAS covers the common network of U.S. airspace, including air navigation facilities; airports and landing areas; aeronautical charts; associated rules, regulations, and procedures; technical information; and personnel and material. The system also includes components shared jointly with the military.

AIRSPACE STRUCTURE

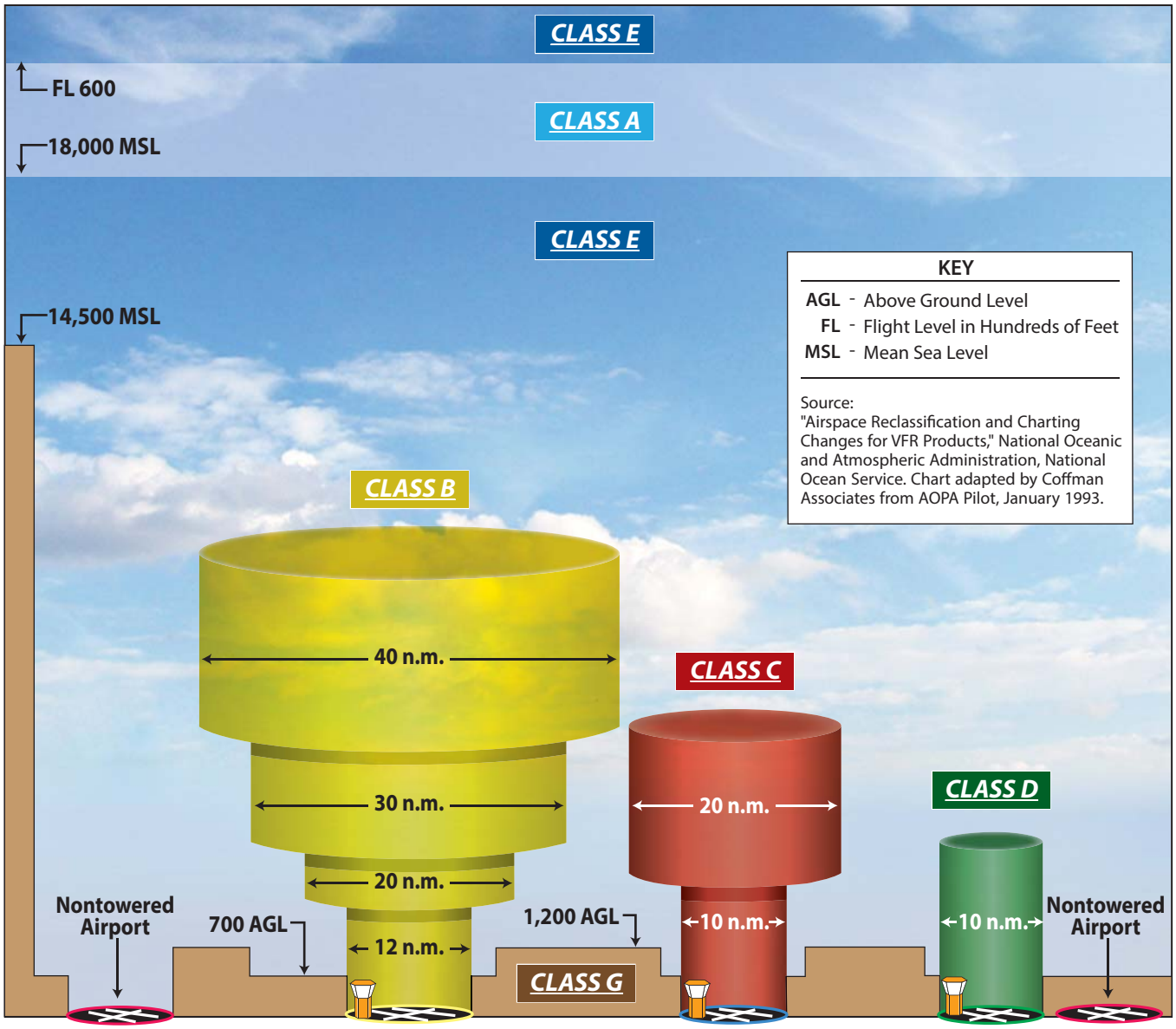
Airspace within the U.S. is broadly classified as either "controlled" or "uncontrolled." The difference between controlled and uncontrolled airspace relates primarily to requirements for pilot qualifications, ground-to-air communications, navigation and air traffic services, and weather conditions. Six classes of airspace have been designated in the U.S., as shown on **Exhibit 1E**. Airspace designated as Class A, B, C, D, or E is considered controlled airspace. Aircraft operating within controlled airspace are subject to varying requirements for positive air traffic control. Airspace near CHD is depicted on the back side of **Exhibit 1E**.

Class A Airspace | Class A airspace includes all airspace from 18,000 feet MSL to flight level (FL) 600 (approximately 60,000 feet MSL) over the contiguous 48 states and Alaska. This airspace is designated in Federal Aviation Regulation (F.A.R.) Part 71.33 for positive control of aircraft. All aircraft must be on an IFR clearance to operate within Class A airspace.

Class B Airspace | Class B airspace has been designated around some of the country's major airports, such as Phoenix Sky Harbor International Airport (PHX) to separate all aircraft within a specified radius of the primary airport. Each Class B airspace is specifically tailored for its primary airport. All aircraft operating within Class B airspace must have air traffic control clearance. Certain minimum aircraft equipment and pilot certification requirements must also be met. This airspace is the most restrictive controlled airspace routinely encountered by pilots operating under VFR in an uncontrolled environment. CHD is located within PHX's Class B airspace at the convergence of three different sections. Each of the sections in the immediate vicinity of CHD have ceilings of 9,000 feet. Class B airspace floors immediately surrounding CHD are 4,000 feet to the north/east; 5,000 feet to the west; and 6,000 feet to the south.

Class C Airspace | The FAA has established Class C airspace at approximately 120 airports around the country that have significant levels of IFR traffic. Class C airspace is designed to regulate the flow of uncontrolled traffic above, around, and below the arrival and departure airspace required for high-performance, passenger-carrying aircraft at major airports. To fly inside Class C airspace, an aircraft must have a two-way radio, an encoding transponder, and have established communication with the ATC facility. Aircraft may fly below the floor of the Class C airspace or above the Class C airspace ceiling without establishing communication with ATC. The nearest Class C airspace to CHD surrounds Tucson International Airport (TUS) and Davis Monthan Air Force Base (DMA).

Class D Airspace | Class D airspace is controlled airspace surrounding airports with an ATCT. The Class D airspace typically constitutes a cylinder with a horizontal radius of four or five nautical miles (NM) from the airport, extending from the surface up to a designated vertical limit, typically set at approximately 2,500 feet above the airport elevation. As shown on **Exhibit 1E**, CHD operates within Class D airspace beginning at the surface and extending to 3,000 feet MSL during the operational hours of the ATCT. Aircraft operators planning to operate within Class D airspace are required to contact the CHD air traffic control prior to entering or departing CHD airspace and must maintain in contact while within the controlled airspace to land at CHD or to transverse the area. When the ATCT is inactive, CHD airspace reverts to Class E airspace.



CONTROLLED AIRSPACE CLASSIFICATIONS

CLASS A Generally airspace above 18,000 feet MSL up to and including FL 600 (60,000 MSL). All operations conducted under instrument fljight rules (IFR)

CLASS B Generally multi-layered airspace from the surface up to 10,000 feet MSL surrounding the nation's busiest airports.

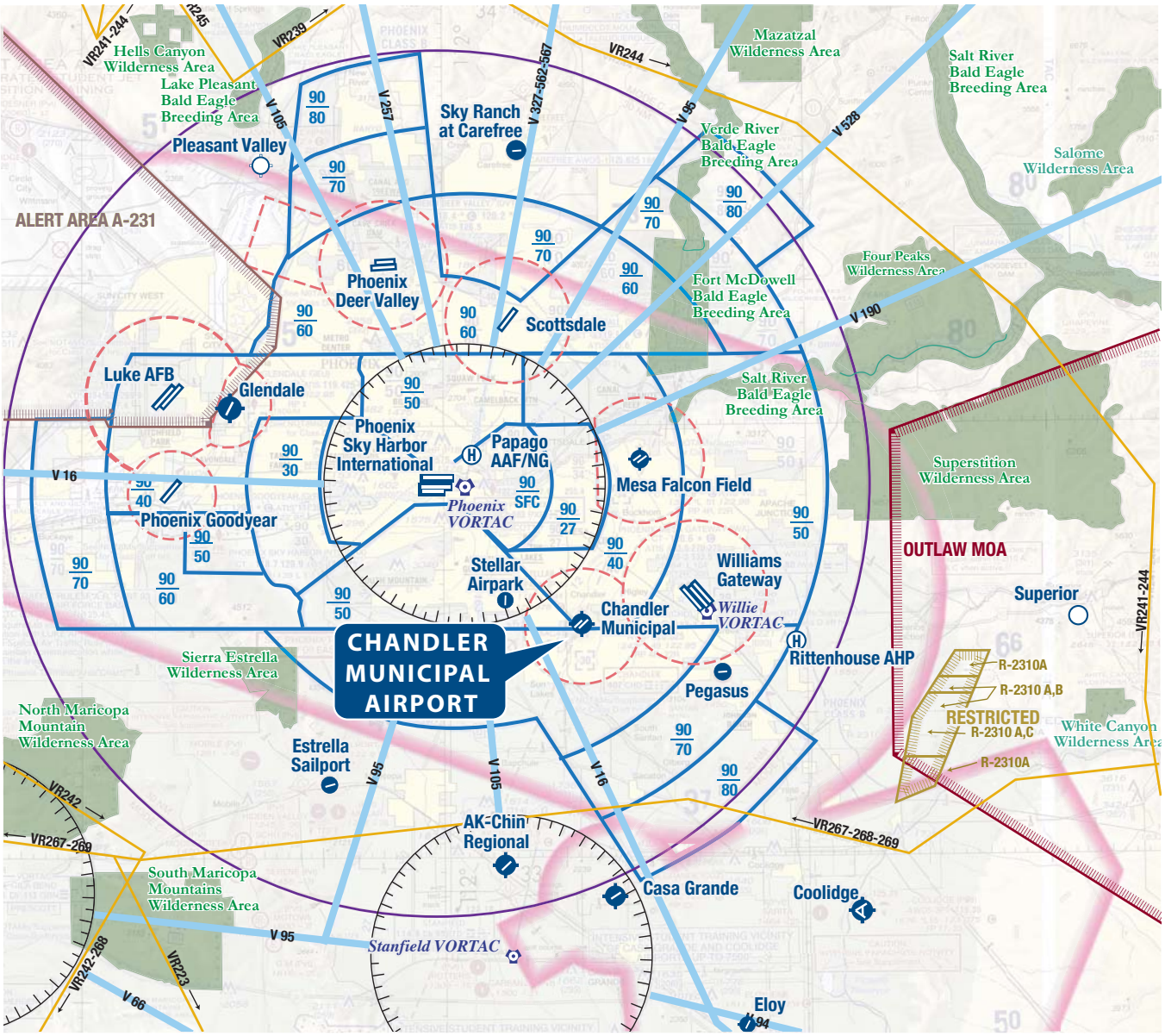
CLASS C Generally airspace from the surface to 4,000 feet AGL surrounding towered airports with service by radar approach control.

CLASS D Generally airspace from the surface to 2,500 feet AGL surrounding towered airports.

CLASS E Generally controlled airspace that is not Class A, Class B, Class C, or Class D.

UNCONTROLLED AIRSPACE CLASSIFICATIONS

CLASS G Airspace that is not Class A, Class B, Class C, Class D, or Class E. Extends from the surface to the base of the overlying Class E airspace up to 14,500' MSL



LEGEND

- Airport with other than hard-surfaced runways
- Airport with hard-surfaced runways 1,500' to 8,069' in length
- Airports with hard-surfaced runways greater than 8,069' or some multiple runways less than 8,069'
- VORTAC
- Compass Rose
- Military Operations Area (MOA)
- Prohibited, Restricted, and Warning Areas
- Mode C
- Military Training Routes
- Victor Airways
- Class B Airspace
- Class D Airspace
- Class E Airspace with floor 700' above surface
- Wilderness Areas
- Alert Area

NORTH

NOT TO SCALE

Source:
Phoenix Sectional Chart, US Department of Commerce, National Oceanic and Atmospheric Administration, April 25, 2019

Class E Airspace | Class E airspace consists of controlled airspace designed to contain IFR operations near an airport and while aircraft are transitioning between the airport and enroute environments. Unless otherwise specified, Class E airspace terminates at the base of the overlying airspace. Only aircraft operating under IFR are required to be in contact with ATC when operating in Class E airspace. While aircraft conducting visual flights in Class E airspace are not required to be in radio communications with ATC facilities, visual flight can only be conducted if minimum visibility and cloud ceilings exist.

Class G Airspace | Airspace not designated as Class A, B, C, D, or E is considered uncontrolled, or Class G, airspace. Air traffic control does not have the authority or responsibility to exercise control over air traffic within this airspace. Class G airspace lies between the surface and the overlaying Class E airspace (700 to 1,200 feet above ground level).

While aircraft may technically operate within this Class G airspace without any contact with ATC, it is unlikely that many aircraft will operate this low to the ground. Furthermore, federal regulations specify minimum altitudes for flight. F.A.R. Part 91.119*, Minimum Safe Altitudes*, generally states that except when necessary for takeoff or landing, pilots must not operate an aircraft over any congested area of a city, town, or settlement, or over any open-air assembly of persons, at an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.

Over less congested areas, pilots must maintain an altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure. Helicopters may be operated at less than the minimums prescribed above if the operation is conducted without hazard to persons or property on the surface. In addition, each person operating a helicopter shall comply with any routes or altitudes specifically prescribed for helicopters by the FAA.

Victor Airways | For aircraft arriving or departing the regional area using VOR facilities, a system of Federal Airways, referred to as Victor Airways, has been established. Victor Airways are corridors of airspace eight miles wide that extend upward from 1,200 feet above ground level (AGL) to 18,000 feet MSL and extend between VOR navigational facilities. Victor Airways near CHD are identified on **Exhibit 1E**.

Alert Areas / Military Operations Area (MOA) & Military Training Routes (MTRs) / Restricted Areas | Alert areas, MOAs, MTRs, and restricted areas are depicted on aeronautical charts to inform nonparticipating pilots of areas that may contain a high volume of pilot training, military operations/activities, or an unusual type of aerial activity. Pilots should exercise caution near and within these areas. All activity within these areas, if granted by the controlling agency, should be conducted in accordance with regulations, without waiver, and pilots of participating aircraft, as well as pilots transitioning the area, are equally responsible for collision avoidance. The Outlaw MOA, beginning approximately 21.4 nautical miles (NM) east of CHD. Restricted areas (R-2310A, B, and C) are located approximately 23.7 NM southeast of CHD. These restricted areas are used for live fire munitions training and unmanned aerial vehicle (UAV) training.

AIRSPACE CONTROL

Albuquerque Air Route Traffic Control Center (ARTCC) | The FAA has established 21 ARTCCs throughout the continental U.S. to control aircraft operating under IFR within controlled airspace and while enroute. An ARTCC assigns specific routes and altitudes along Federal Airways to maintain separation and orderly traffic flow. The Albuquerque Center ARTCC controls IFR airspace enroute to and from the Phoenix metropolitan area, including CHD, at altitudes greater than 10,000 feet above ground level (AGL).

Phoenix Terminal Radar Approach Control (TRACON) | The Phoenix TRACON is responsible for maintaining separation between aircraft operating under 10,000 feet AGL during their approach and departures from airports in the Phoenix metropolitan area. Once aircraft enter CHD airspace (typically within five miles of the airport and below 2,500 feet), the TRACON "hands-off" responsibility for the aircraft to the CHD ATCT. This process is reversed for aircraft departing CHD.



ATCT

Chandler Airport Traffic Control Tower (ATCT) | Approaching, departing, and taxiing aircraft at CHD are managed by the Chandler ATCT controllers. The CHD ATCT was commissioned on July 13, 1998 and is located on the north side of the airfield. The tower operates from 6:00 a.m. to 9:00 p.m. seven days per week. The CHD ATCT is part of the FAA's contract tower program, which utilizes non-federal controllers. Serco Management Services, Inc. is the current ATCT operator.

Flight service stations (FSS) | FSS's are air traffic facilities which provide pilot briefings, flight plan processing, inflight radio communications, search and rescue (SAR) services, and assistance to lost aircraft and aircraft in emergency situations. FSSs also relay air traffic control clearances, process Notice to Airmen (NOTAMs), and broadcast aviation meteorological and aeronautical information.

FLIGHT PROCEDURES

Flight procedures are a set of predetermined maneuvers established by the FAA, using electronic or visual navigational aids that assist pilots in locating and landing or departing from an airport.

Instrument Approach Procedures: Instrument approach procedures are a series of predetermined maneuvers established by the FAA, using electronic navigational aids that assist pilots in locating and landing at an airport, especially during instrument flight conditions. Precision instrument approaches, which provide vertical descent information and course guidance information to the pilot. Non-precision approaches only provide course guidance to the pilot; however, the relatively new GPS localizer performance with vertical guidance (LPV) approaches are currently categorized by the FAA as an approach with vertical guidance (APV), which is not considered a precision approach.

There are currently two published non-precision instrument approach procedures at CHD, both to Runway 4R. The visibility and cloud height minimums associated with the approach define the capability of an instrument approach procedure. Visibility minimums define the horizontal distance the pilot must be able to see to complete the approach. Cloud height defines the lowest level a cloud layer (defined in feet above the ground) can be situated for the pilot to complete the approach. If the observed visibility or cloud ceilings are below the minimums prescribed for the approach, the pilot cannot complete the instrument approach. **Table 1F** summarizes FAA-approved and published instrument approach proce-dures, including associated weather minimums for CHD.

TABLE 1F
Instrument Approach Procedures
Chandler Municipal Airport

	WEATHER MINIMUMS BY AIRCRAFT TYPE			
	Category A	**Category B**	**Category C**	**Category D**
RNAV (GPS) Runway 4R				
LNAV MDA	1680’/1-mile	1680’/1-mile	1680’/1.25-mile	NA
Circling	1720’/1-mile	1720’/1-mile	1720’/1.5-mile	NA
VOR Runway 4R				
S-4R	1680’/1-mile	1680’/1-mile	1680’/1.25-mile	NA
Circling	1720’/1-mile	1720’/1-mile	1720’/1.5-mile	NA

Aircraft categories are based on the approach speed of aircraft, which is determined as 1.3 times the stall speed in landing configuration as follows:
Category A: 0-90 knots (e.g., Cessna 172)
Category B: 91-120 knots (e.g., Beechcraft King Air)
Category C: 121-140 knots (e.g., Learjet)
Category D: 141-166 knots (e.g., Gulfstream G450)

Abbreviations:
GPS - Global Positioning System
LNAV/RNAV - A technical variant of GPS (Lateral, Area Navigation)
MDA - Minimum Decision Altitude
VOR – Very High Frequency Omnidirectional Range

Note: (xxx'/ x-mile) = Cloud ceiling height/Visibility minimum
Source: U.S. Terminal Procedures (Effective January 2020)

Local Operating Procedures: The traffic pattern at the airport is maintained to provide the safest and most efficient use of the airspace. At CHD, Runways 4L and 22L use left-hand traffic patterns, which means aircraft conduct left-hand turns within the traffic pattern when operating on either of the two runways. Runways 4R and 22R use right-hand traffic patterns. As a result, aircraft operating within Runway 4L-22R’s pattern remain north of the airport and aircraft operating within Runway 4R-22L’s pattern stay south of the airport. The typical traffic pattern altitude for rotorcraft is 500 feet AGL; piston aircraft is between 800 and 1,000 feet AGL; and 1,500 feet AGL for turbine aircraft. CHD traffic patterns and generalized flight tracks are depicted in **Figure 1B**.

Prevailing wind conditions dictate runway usage (i.e. easterly winds generally favor the use of Runways 4R/4L; westerly winds generally favor Runway 22L/22R). During calm wind conditions, Runways 4R/4L are the preferred runways.

CHD does not have aircraft restrictions, curfews, or a mandatory noise abatement program, as these programs would violate the Federal *Airport Noise and Capacity Act* (ANCA) *of 1990*. Federal law requires the airport to remain open 24 hours a day, 7 days a week, and to accept all civilian and military aircraft that can be safely accommodated.

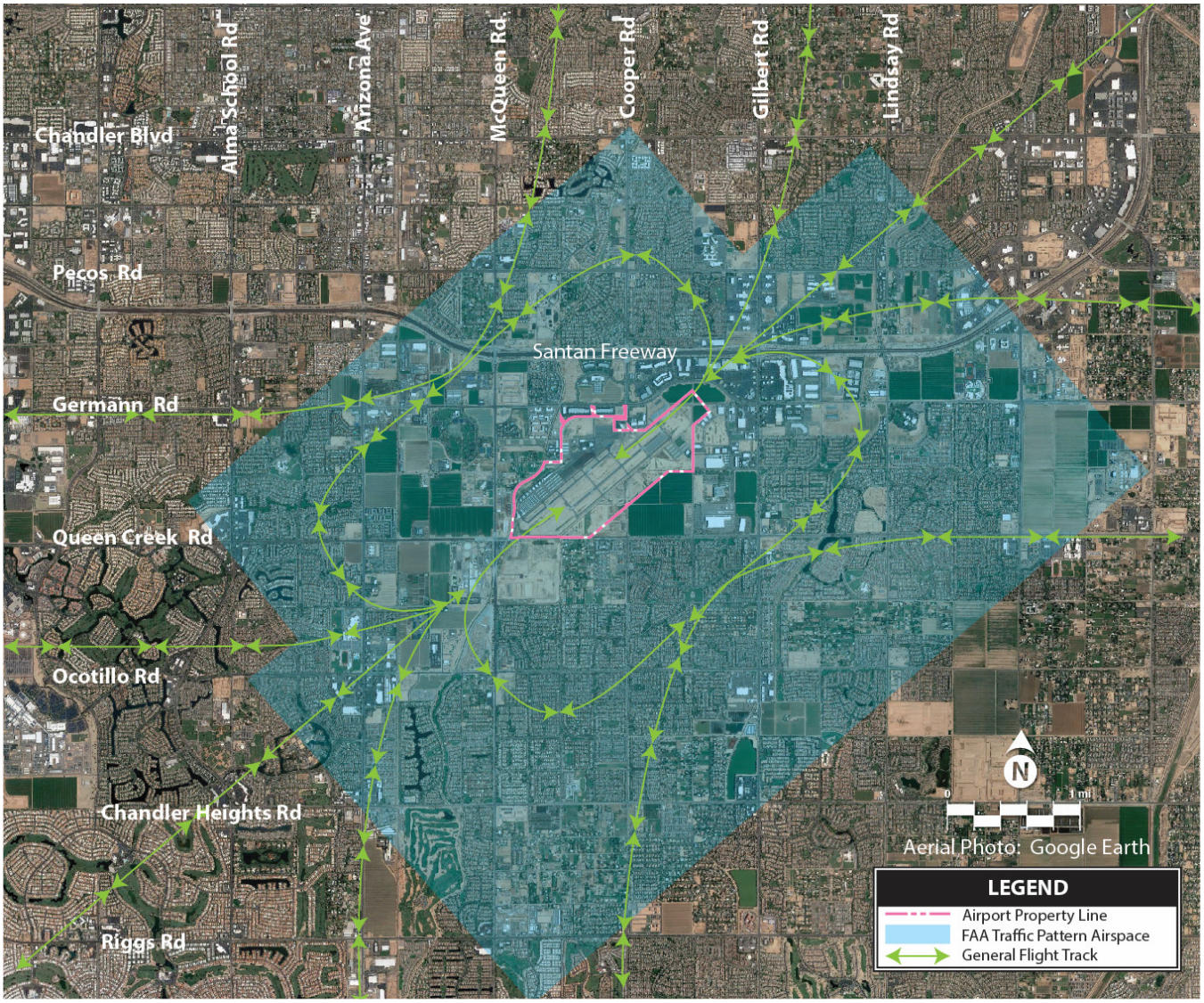


FIGURE 1B – CHD TRAFFIC PATTERN AND GENERALIZED FLIGHT TRACKS

REGIONAL AIRPORTS

A review of other public-use airports with at least one paved runway within a 30-nm radius of CHD was conducted to identify and distinguish the types of air service provided in the region. It is important to consider the capabilities and limitations of these airports when planning for future changes or improvements at CHD. **Table 1G** provides basic level information on 12 public-use airports within the vicinity of CHD. All regional airports, including CHD, combine for over 2.2 million annual operations and over 3,200 based aircraft. A more detailed discussion of regional airports and their impact on CHD's service area is provided in Chapter Two of this report.

TABLE 1G
Airports Within 30 NM from CHD

Airport	Nautical Miles/ Direction from CHD[1]	FAA Service Level[2]	Based Aircraft[1]	Annual Operations[1]	Longest Runway (ft.)[1]	Lowest Visibility Minimum[1]
Chandler Municipal	**--**	**Reliever**	**441**	**220,662**	**4,870'**	**1-mile**
Stellar Airpark	5.5nm/WNW	N/A	176	40,150	4,416'	1-mile
Phoenix-Mesa Gateway	8.1nm/ENE	Primary	126	288,715	10,401'	¾-mile
Falcon Field	12.2nm/NNE	Reliever	644	300,030	5,100	1-mile
Phoenix Sky Harbor	14.1nm/NW	Primary	70	434,715	11,489'	½-mile
Ak-Chin Regional	17.6nm/SSW	GA	13	31,755	4,751'	None
Casa Grande Municipal	19.0nm/S	GA	82	119,720	5,200'	½-mile
Scottsdale	21.8nm/NNW	Reliever	353	183,595	8,249'	1-mile
Coolidge Municipal	27.8nm/SE	GA	38	4,212	5,564'	1-mile
Phoenix Deer Valley	28.6nm/NNW	Reliever	973	378,505	8,196'	1-mile
Glendale Municipal	28.8nm/WNW	Reliever	113	74,825	7,150'	1-mile
Phoenix Goodyear	29.8nm/WNW	Reliever	217	127,750	8,500'	1-mile
Eloy Municipal	30.0nm/SSE	GA	20	29,930	3,901'	None

Sources: [1]www.airnav.com / basedaircraft.com / CHD ATCT operations counts for 2019; [2]NPIAS;

LANDSIDE FACILITIES

TERMINAL BUILDING

Constructed in 1996, the general aviation terminal building at CHD has a total area of approximately 5,500 sf. The terminal is located on the north side of the airfield where it provides space for administration offices, pilot and passenger areas, restrooms, pilot's lounge, flight planning area, lobby, and conference room.



TERMINAL BUILDING

AIRPORT BUSINESSES

Businesses on the airport are concentrated primarily in the area immediately east/northeast of the terminal building. The following is a description of the various business operations based at CHD:



CHANDLER AIR SERVICE

- Chandler Air Service, Inc. | a full-service FBO that provides a variety of services including fueling, FAR Part 141 flight training, aircraft rental, pilot supplies, and aircraft maintenance/parts sales.
- Chandler Aviation | a specialty aviation service operator (SASO) that provides a complete line of maintenance-related services, annual inspections, sheet metal repairs, fabric repairs and engine overhauls.
- Chandler Avionics | a SASO providing avionics installation and certification.
- The Hangar Café | a restaurant located within the Chandler Air Service FBO facility.
- Quantum Helicopters | a SASO providing helicopter flight training and charter service. Located on the south side of the airfield. Quantum has provided FAR Part 61 and 141 flight training at CHD since 1993.
- Southwest Aircraft Charter | Aircraft charter operations and management. Aircraft fleet includes four Beechcraft Barons, two Beechcraft King Air 200s, and two Learjet 45s.



QUANTUM HELICOPTERS



CHANDLER AVIATION



THE HANGAR CAFÉ

AIRCRAFT HANGAR FACILITIES

Existing hangar facilities at CHD consist of large conventional-style hangars utilized by the various FBO/SASOs on the airport, T-hangars and shade hangars used by small aircraft, and executive-style and box hangars, which are mid-sized hangars. Hangar facilities are described in **Table 1H** and identified on **Exhibit 1F**. In total, CHD has 438,517 sf of hangar storage capacity.

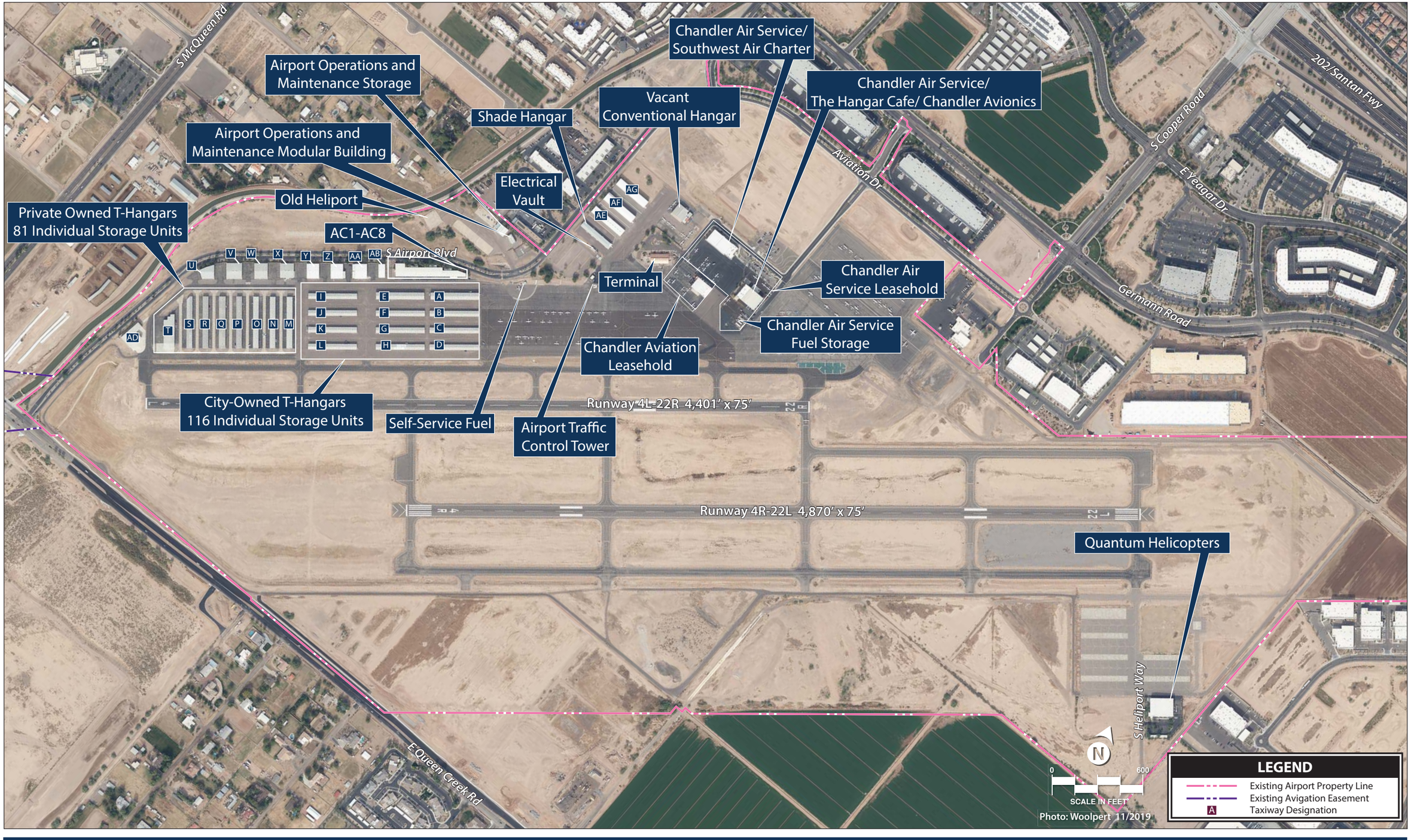

S McQueen Rd
Airport Operations and Maintenance Storage
Chandler Air Service/ Southwest Air Charter
Chandler Air Service/ The Hangar Cafe/ Chandler Avionics
202/Santan Fwy
Shade Hangar
Vacant Conventional Hangar
Airport Operations and Maintenance Modular Building
Aviation Dr
S Cooper Road
E Yeagar Dr
Electrical Vault
Old Heliport
Private Owned T-Hangars 81 Individual Storage Units
AC1-AC8
S Airport Blvd
Terminal
Chandler Air Service Leasehold
Germann Road
Chandler Air Service Fuel Storage
Chandler Aviation Leasehold
City-Owned T-Hangars 116 Individual Storage Units
Runway 4L-22R 4,401' x 75'
Self-Service Fuel
Airport Traffic Control Tower
Runway 4R-22L 4,870' x 75'
Quantum Helicopters
S Heliport Way
E Queen Creek Rd
N
0
600
SCALE IN FEET
Photo: Woolpert 11/2019
LEGEND
Existing Airport Property Line
Existing Avigation Easement
Taxiway Designation

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TABLE 1H
Hangar Building Inventory
Chandler Municipal Airport

Building	Type	Ownership	Hangar Sq.Ft.	Notes
Chandler Air Service	Conventional Hangar	Private	11,000	Additional 2,000 sf of office; includes The Hangar Café and Chandler Avionics
Chandler Air Service	Conventional Hangar	Private	14,000	Additional 7,488 sf of office space; includes Southwest Air Charter
Chandler Aviation	Conventional Hangar	Private	6,500	Additional 3,400 sf of office space
Quantum Helicopters	Conventional Hangar	Private	14,400	Additional 7,000 sf of office space
Buildings M, N, and O	T-Hangars (32 Units)	Private	32,182	Hangars Unlimited – Phase I
Buildings P, Q, and R	T-Hangars (32 Units)	Private	40,188	Hangars Unlimited - Phase II
Buildings S and T	T-Hangars (17 Units)	Private	25,549	Hangars Unlimited - Phase III
Buildings U, V, W, and X	Executive Hangars (14 Units)	Private	33,991	Hangars Unlimited - Phase I (Executive)
Buildings Y, Z, AA, and AB	Executive Hangars (14 Units)	Private	27,300	Hangars Unlimited - Phase II/III (Executive)
Building AC	Executive Hangars (8 Units)	Private	26,307	-
Building AD	Executive Hangars (2 Units)	Private	11,150	-
Building AE	T-Hangar (11 Units)	Private	12,600	-
Building AF	Box Hangar (4 Units)	Private	12,000	-
Building AG	Box Hangar (4 Units)	Private	12,000	-
Buildings A, B, C, D, E, F, G, H, I, J, K, and L	T-Hangars (110 Units)	City	144,800	-
T-Shade	Shade Structure	City	9,750	-
Vacant Hangar	Conventional Hangar	City	4,800	Additional 4,300 sf of office space
Total Hangar Space			**438,517**	

Sources: CHD records; some hangar measurements derived from Google Earth.

AIRCRAFT PARKING APRONS

There are four aircraft parking aprons at CHD – the terminal apron, FBO apron, north apron, and Heliport apron. All four serve unique purposes for the airport. Each apron is described below and identified on **Figure 1C**.

1. The **terminal apron** provides parking adjacent to the terminal building on the north side of the airfield and serving transient and locally based aircraft. The terminal apron is constructed of asphalt and has an area of approximately 95,228 square yards (sy). There are 88 marked parking positions on this apron and the airport's self-service fuel facilities are on this apron.
2. The **FBO apron** serves Chandler Air Service and Chandler Aviation and the various operators within their facilities on the north side of the airfield. The FBO apron is approximately 22,700 sy of asphalt with 39 marked parking positions.
3. The **north apron** is on the north side of the airfield and serves locally based aircraft. It is 82,833 sy of asphalt with 141 marked parking positions including two for helicopters.
4. The **Heliport apron** is located on the south side of the airfield and serves helicopter activities. It is 35,093 sy. The helicopter parking lanes are constructed of Portland Cement Concrete (PCC) while the taxiways/taxilanes are constructed of asphalt. There is a total of 34 helicopter parking positions with direct access to a heliport.

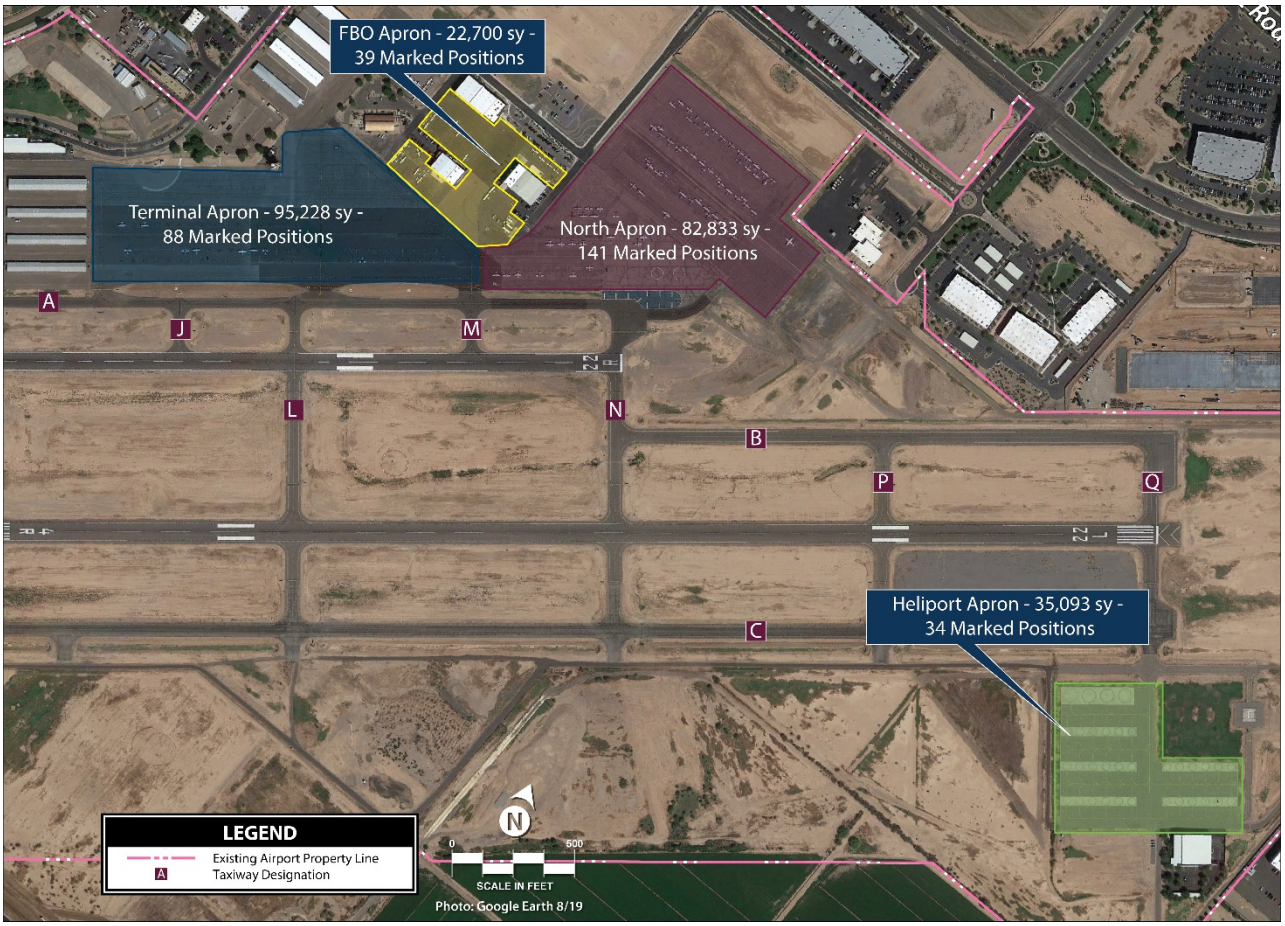

FIGURE 1C – AIRCRAFT PARKING APRONS AT CHD

VEHICLE PARKING

Vehicle parking lots are available at the terminal building, adjacent to the tower, and at the various FBO/SASO facilities at CHD. Each parking lot is identified on **Figure 1D**. In total there are 94 marked vehicle parking spaces at CHD, which does not include the tower lot, which is unmarked. Tenants of the executive/T-hangar facilities on the airport are authorized to pass through secured gates with their vehicles so most of these facilities do not have separate vehicle parking areas.



FIGURE 1D – VEHICLE PARKING LOTS AT CHD

SUPPORT FACILITIES

FIREFIGHTING SERVICES

As a general aviation airport, CHD is not required to maintain on-site aircraft rescue and firefighting (ARFF) equipment or services. The nearest fire station is the Gilbert Fire Station 8 located at 1095 E. Germann Road. The nearest City of Chandler fire station is Station 1 located at 1491 E. Pecos Road. The

terminal building at CHD is equipped with six fire extinguishers and a fire suppression system. CHD also has a mutual aid agreement with the Town of Gilbert.



CITY-OWNED SELF-SERVICE FUEL STATION

FUEL STORAGE

Aviation fueling services at CHD are provided by Chandler Air Service and the City of Chandler. Fuel storage facilities consist of the following:

- Chandler Air Service | Chandler Air Services' fuel farm is located on their leasehold and consists of a 12,000-gallon tank for Jet A and a 10,000-gallon tank for 100LL, both of which are self-service equipped. Chandler Air Service also has four mobile fueling trucks including two Jet A trucks with storage capacities of 3,000 gallons and 1,000 gallons and two 100LL trucks with storage capacities of 1,000 gallons each.

- City of Chandler | The City of Chandler's fuel farm is located on the terminal apron and consists of one 100LL 12,000-gallon underground storage tank. The tank is equipped for self-service.



CHANDLER AIR SERVICE FUEL FARM AND TRUCK

Historic fuel flowage data is summarized in **Figure 1E**. 100LL flowage has dropped slightly from 420,113 gallons in 2015 to 407,747 in 2019. Jet A flowage has grown considerably in the past three years going from 190,725 gallons in 2015 to 304,967 gallons in 2019.

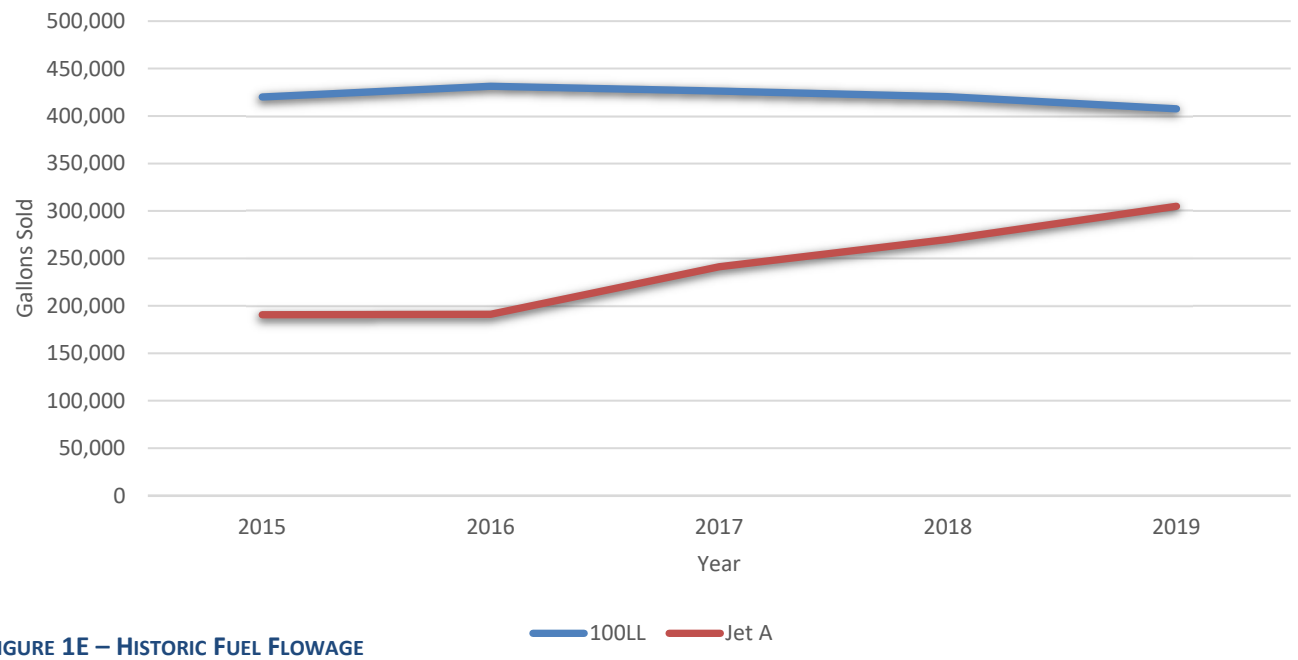

FIGURE 1E – HISTORIC FUEL FLOWAGE

AIRPORT MAINTENANCE FACILITIES

The City of Chandler utilizes the old heliport facilities west of S. Airport Boulevard for the storage of maintenance equipment. Facilities include an old hangar (3,600 sf) and a modular building (2,120 sf).

PERIMETER FENCING AND SERVICE ROAD

Airport administrative staff and emergency service vehicles can access the airfield via a perimeter service road that extends around the entirety of the airfield. The 15-foot-wide perimeter road that is a partially paved and gravel road. The paved portion extends from the heliport to the north apron.

The airfield perimeter is also equipped with security fencing to restrict entry to authorized persons and vehicles. The perimeter fencing is equipped with motorized and manual gates allowing access to all areas of the airfield and landside areas to authorized personnel only.



PERIMETER SERVICE ROAD AND SECURITY FENCING

UTILITIES

Utility services at available at CHD include water, sanitary sewer, electric, and telecommunications. The City of Chandler is the airport's water provider. The City also provides sanitary sewer services to the terminal building, Quantum's facility, and several hangars. All other facilities are on septic systems. Electricity is provided by the Salt River Project (SRP). All power lines on the airport have been buried except at the shade hangar and north of airport property.

Existing water and sanitary sewer lines on and around the airport are depicted on **Exhibit 1G**. Mapping of as-built power lines were not available.

AVIATION ACTIVITY

At general aviation airports, the number of based aircraft and operations (takeoffs and landings) in aggregate and type are key aeronautical activity measures. These indicators are used in subsequent analyses in this master plan to project future aeronautical activity and determine future facility needs. Each of the activity segments is briefly described below.

AIRCRAFT OPERATIONS

Aircraft operational statistics at CHD are recorded by the ATCT, which operates from 6:00 a.m. to 9:00 p.m. daily. Aircraft operations are classified as either local or itinerant. Local operations consist mostly of aircraft training operations conducted within the airport traffic pattern, and touch-and-go and stop-

Sanitary Sewer Utilities



Water Utilities



LEGEND

- Existing Airport Property Line
- Existing Avigation Easement
- Sewer Line
- Water Line

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and-go operations. Itinerant operations are arriving or departing aircraft which have an origin or destination at another airport. Aircraft operations are further segregated into four general categories: air carrier, air taxi, military, and general aviation.

- **Air Carrier** | operations performed by aircraft with greater than 60 seats and/or a maximum payload capacity of 18,000 pounds.
- **Air Taxi** | operations associated with commuter aircraft, but also include for-hire general aviation aircraft.
- **Military** | operations conducted by airplanes and helicopters with a military identification.
- **General Aviation** | includes all other aviation activity from small ultralights to large business jets.

Table 1J presents the annual aircraft operations data at CHD since 1996 broken out by type of operation (local or itinerant), as well as the category of operations (air carrier, air taxi, military, or general aviation). The operational data shows CHD reached its peak operations in 2006. From 2007 through 2011, operations declined 39.1 percent likely due to the effects of the national economic recession during that period. Activity at CHD has picked up since 2011 reaching over 220,000 in 2018 and 2019.

TABLE 1J
Historic Operations
Chandler Municipal Airport

Calendar Year	Itinerant Operations					Local Operations			Total Operations
	Air Carrier	Air Taxi	General Aviation	Military	Total Itinerant	General Aviation	Military	Total Local	
1996	0	1,043	59,847	91	60,981	95,204	27	95,231	156,212
1997	0	1,594	66,863	39	68,496	115,624	19	115,643	184,139
1998	0	904	67,429	46	68,379	128,108	24	128,132	196,511
1999	0	1,434	71,467	49	72,950	148,020	48	148,068	221,018
2000	0	1,771	75,713	25	77,509	172,281	21	172,302	249,811
2001	0	2,237	64,675	20	66,932	165,472	45	165,517	232,449
2002	0	1,828	67,302	12	69,142	161,377	19	161,396	230,538
2003	0	1,939	64,780	10	66,729	152,929	13	152,942	219,671
2004	0	2,530	61,626	41	64,197	168,850	32	168,882	233,079
2005	0	2,740	62,826	40	65,606	169,489	16	169,505	235,111
2006	13	3,625	82,292	285	86,215	182,806	51	182,857	269,072
2007	0	4,162	85,217	655	90,034	175,147	31	175,178	265,212
2008	0	2,882	75,280	238	78,400	158,433	9	158,442	236,842
2009	0	2,131	65,580	50	67,761	136,524	85	136,609	204,370
2010	13	2,041	57,122	47	59,223	106,197	377	106,574	165,797
2011	6	2,168	60,891	68	63,133	98,068	388	98,456	161,589
2012	0	2,490	72,816	75	75,381	121,951	95	122,046	197,427
2013	20	2,430	77,234	318	80,002	131,231	423	131,654	211,656
2014	0	1,852	76,702	51	78,605	138,887	57	138,944	217,549
2015	0	1,707	80,604	40	82,351	137,425	77	137,502	219,853
2016	0	1,749	77,860	72	79,681	141,586	206	141,792	221,473
2017	17	3,215	71,440	97	74,769	119,204	251	119,455	194,224
2018	0	3,148	73,107	106	76,361	151,972	256	152,228	228,589
2019	0	2,990	67,647	199	70,836	149,754	72	149,826	220,662

Source: FAA Operations and Performance Data (OPSNET), https://aspm.faa.gov/

BASED AIRCRAFT

Identifying the current number of based aircraft is an important part of the master plan process; however, it can be challenging to be accurate given the transient nature of aircraft storage. CHD maintains a recent record of based aircraft, but data from the FAA's *Terminal Area Forecast* (TAF) and from the previous master plan (airport records) was also consulted to provide a broader history. Historic based aircraft levels at CHD are shown on **Table 1K**. Like operations, based aircraft at CHD peaked in 2005 prior to the national economic recession, which began in 2007. Since that time, based aircraft levels dropped reaching 378 in 2009. However, the current count at CHD has rebounded to 441 FAA-validated based aircraft.

TABLE 1K
Based Aircraft History
Chandler Municipal Airport

Year	Based Aircraft	Source
1990	270	FAA TAF
2000	392	Airport Records
2005	457	Airport Records
2009	378	FAA TAF
2016	440	SASP
2019	441	FAA-Validated Based Aircraft Registry

COMMUNITY PROFILE

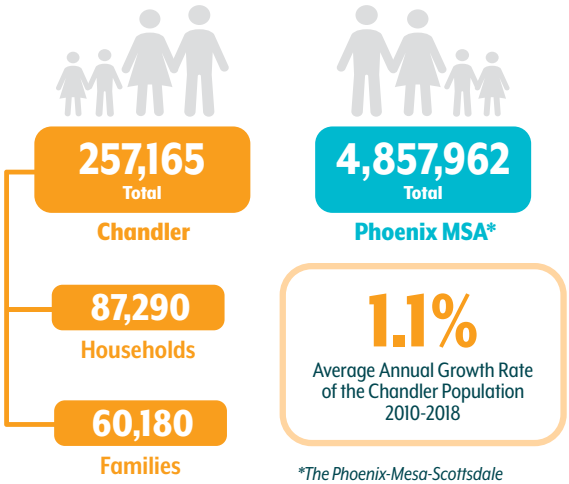
For an airport planning study, a profile of the local community including its socioeconomic characteristics are collected and examined to derive an understanding of the dynamics of growth within the study area. Socioeconomic information related to the local area is an important consideration in the master planning process.

The community profile for the City of Chandler on **Exhibit 1H** was compiled by the Maricopa Association of Governments (MAG) and summarizes historic and projected data for population, demographics, education and income, employment, housing, and transportation. From a population perspective, MAG projects the City of Chandler's population to grow from 257,165 in 2018 to 321,100 in 2040, an increase of 25 percent or 63,935 people. Jobs in Chandler are focused in the technology and financial services industries and the median household income for residents of Chandler is 33 percent higher than that of the Phoenix metropolitan statistical area (MSA).

ENVIRONMENTAL INVENTORY

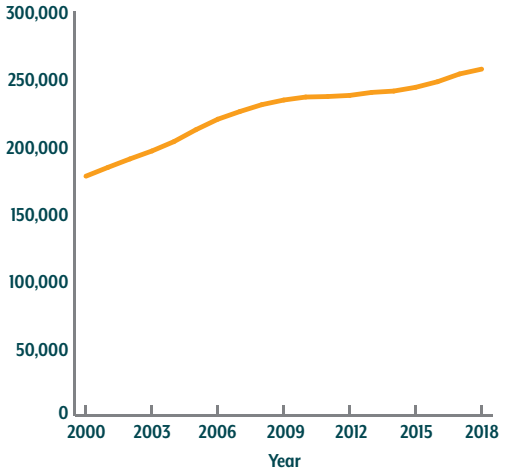
The environmental inventory addresses existing conditions at CHD and its environs. This inventory is intended to help identify relevant environmental issues that should be considered during the preparation of the Airport Master Plan. The inventory is organized using the resource categories contained in FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures* (2015). Available information regarding the environmental conditions at the airport and within the surrounding area has been derived from internet resources, agency maps, and existing literature. A comprehensive list of the resources is included in this section.

2018 Population



*The Phoenix-Mesa-Scottsdale Metropolitan Statistical Area includes all of Maricopa and Pinal counties.

Population, 2000-2018



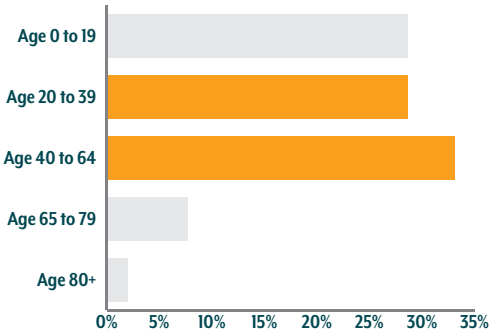
Source: U.S. Census Bureau Intercensal/Postcensal Population Estimates

Median Age

Chandler	Phoenix MSA	United States
35.3	36.2	37.8

Age Groups

62% of the Population is Working Age



Race and Ethnicity*

	Chandler	Phoenix MSA	U.S.
White	59%	56%	62%
Hispanic	22%	31%	18%
Black	5%	4%	12%
Native American	1%	4%	1%
Asian	10%	3%	5%
Multiple/Other	3%	3%	3%

*Race categories are for the non-Hispanic population (i.e. white non-Hispanic, Black non-Hispanic, etc). Hispanic can be of any race.

Diversity

Measured by the percent of minorities* in the area.

Chandler	41%
Phoenix MSA	44%
United States	39%

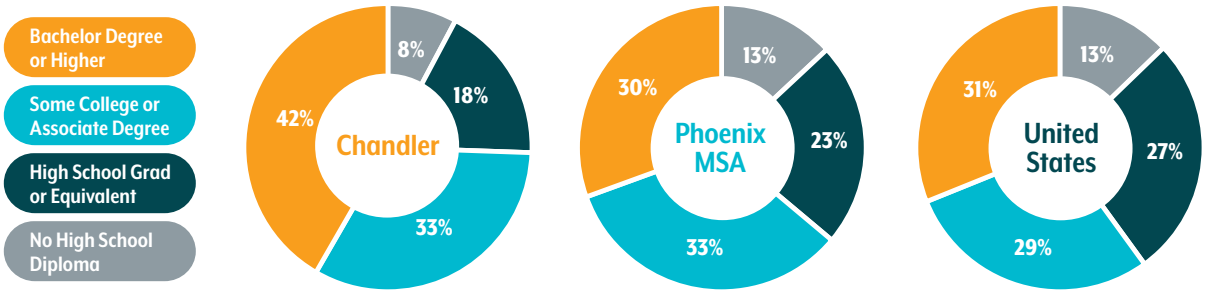
*Minority is the population who identify as any race or ethnicity other than non-Hispanic white.

Unless otherwise noted, the source for these data is the U.S. Census Bureau, 2013-2017 American Community Survey (ACS) 5-year Estimates *rev. 9/18/2019*

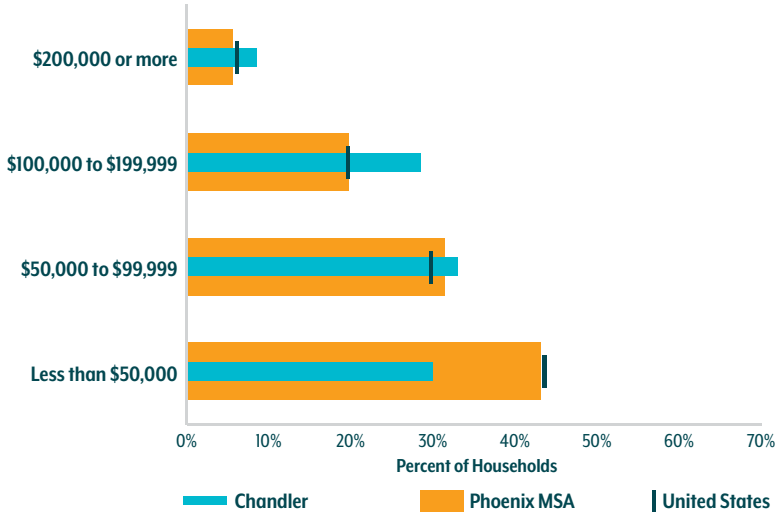
Source: Maricopa Association of Governments, Community Profile, revised 9/18/2019.

Highest Level of Education

for the population age 25 years and older



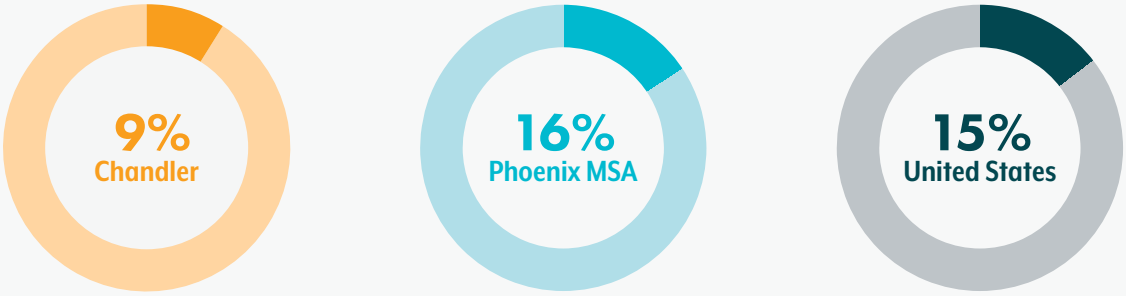
Household Income



Median Household Income

Chandler	Phoenix MSA	United States
$77,278	$57,935	$57,652

Poverty Rate



Poverty status is determined for all persons except institutionalized people, military personnel in group quarters, people in college dormitories, and unrelated individuals under 15 years old. Poverty levels are determined based on the official Federal Poverty Level thresholds.

Unless otherwise noted, the source for these data is the U.S. Census Bureau, 2013-2017 American Community Survey (ACS) 5-year Estimates *rev. 9/18/2019*

Source: Maricopa Association of Governments, Community Profile, revised 9/18/2019.

Employers in Chandler

2,796
Employers

116,980
Jobs

** Totals reported for employers with 5 or more employees only*

Top 5 Industry Clusters
by Employment

High Tech Manufacturing & Development	Finance, Insurance, & Real Estate	Retail	Consumer Services	Business Services
Businesses: 106	Businesses: 202	Businesses: 336	Businesses: 550	Businesses: 352
Jobs: 19,810	Jobs: 16,400	Jobs: 13,310	Jobs: 12,590	Jobs: 11,490

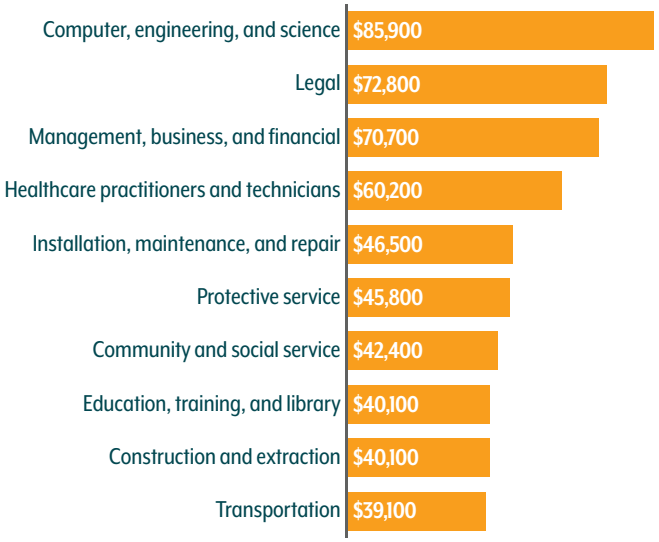
Note: Jobs rounded to nearest ten.
Source: 2018 MAG Employer Database

Top 10 Private Employers

Employer Name	Jobs
Intel Corporation	10,230
Wells Fargo	5,280
Bank of America	3,670
Dignity Health	2,530
Avnet Inc	2,240
Verizon Wireless	1,820
Nxp USA Inc	1,790
Northrop Grumman	1,650
Paypal Inc	1,540
Microchip Technology Inc	1,400

Note: Excludes Government and Education; jobs rounded to nearest 10.
Source: 2018 MAG Employer Database

Top Occupation Categories of Residents
by Median Earnings

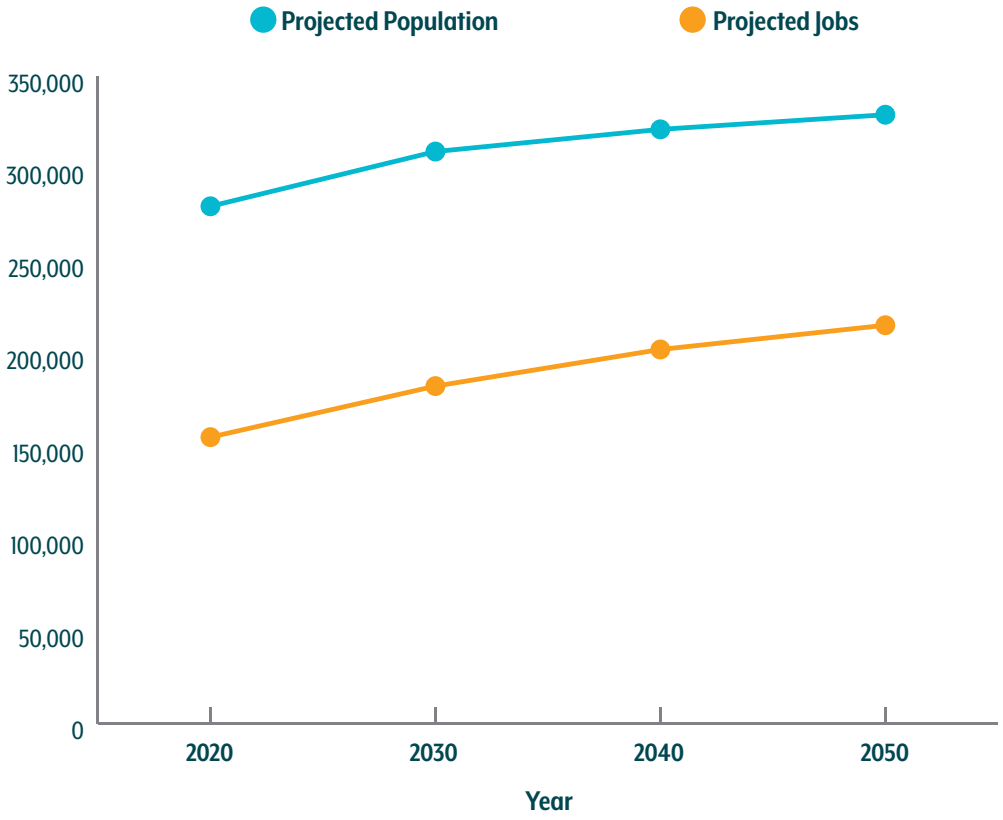


Note: Median earnings rounded to nearest hundred.

Unless otherwise noted, the source for these data is the U.S. Census Bureau, 2013-2017 American Community Survey (ACS) 5-year Estimates *rev. 9/18/2019*

Source: Maricopa Association of Governments, Community Profile, revised 9/18/2019.

Socioeconomic Projections*



Year	Population	Jobs
2020	279,500	154,700
2030	309,100	182,300
2040	321,100	202,100
2050	329,000	215,200
2055	332,400	222,000

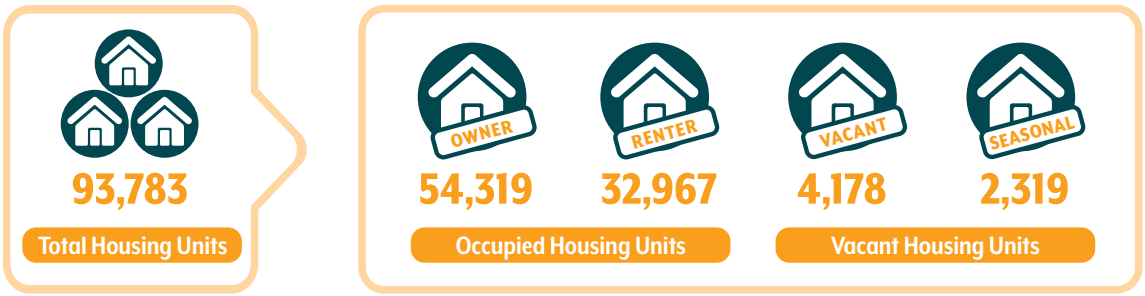
Source: MAG Socioeconomic Projections 2019

***The data shown here are for the municipal planning area (MPA)**, which delineates the area of planning concern for each jurisdiction. MAG produces population and employment projections by MPA, incorporated jurisdiction, and regional analysis zone (RAZ).

Unless otherwise noted, the source for these data is the U.S. Census Bureau, 2013-2017 American Community Survey (ACS) 5-year Estimates *rev. 9/18/2019*

Source: Maricopa Association of Governments, Community Profile, revised 9/18/2019.

Housing in Chandler



Median Home Value

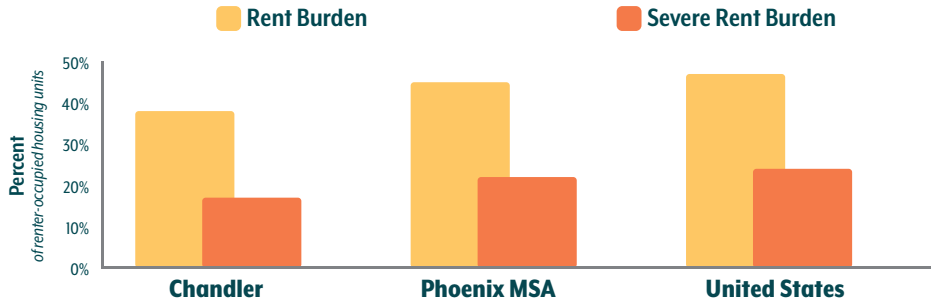
$268,000	Chandler
$216,600	Phoenix MSA
$193,500	United States

Median Gross Rent

$1,198	Chandler
$1,032	Phoenix MSA
$982	United States

Rent Burden

Percent of renter-occupied housing units with a rent burden or severe rent burden



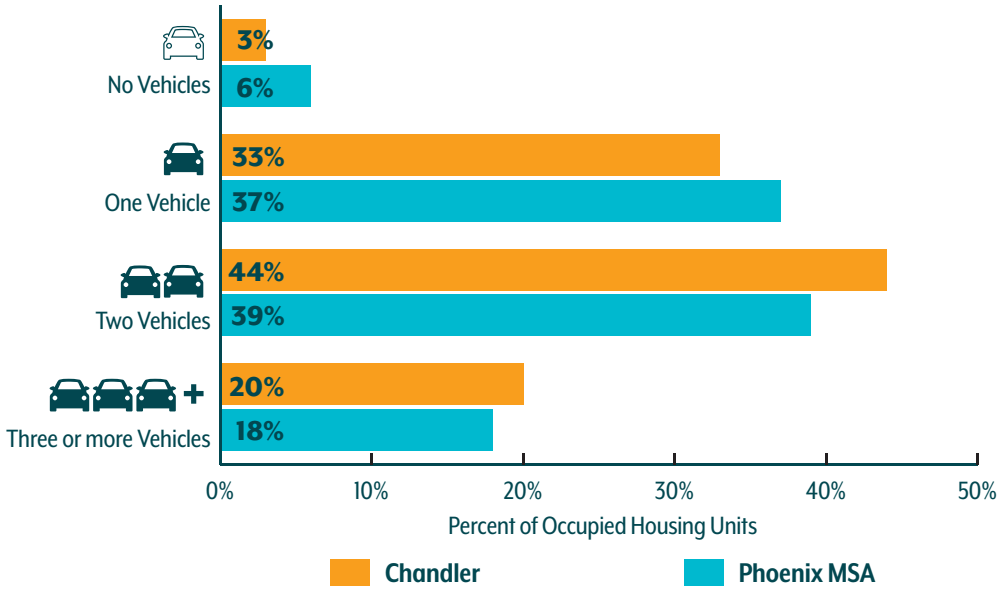
If a household is spending **30%** or more of their income on rent, they are **rent burdened**.

If a household is spending **50%** or more of their income on rent, they have a **severe rent burden**.

Unless otherwise noted, the source for these data is the U.S. Census Bureau, 2013-2017 American Community Survey (ACS) 5-year Estimates *rev. 9/18/2019*

Source: Maricopa Association of Governments, Community Profile, revised 9/18/2019.

Vehicles Available

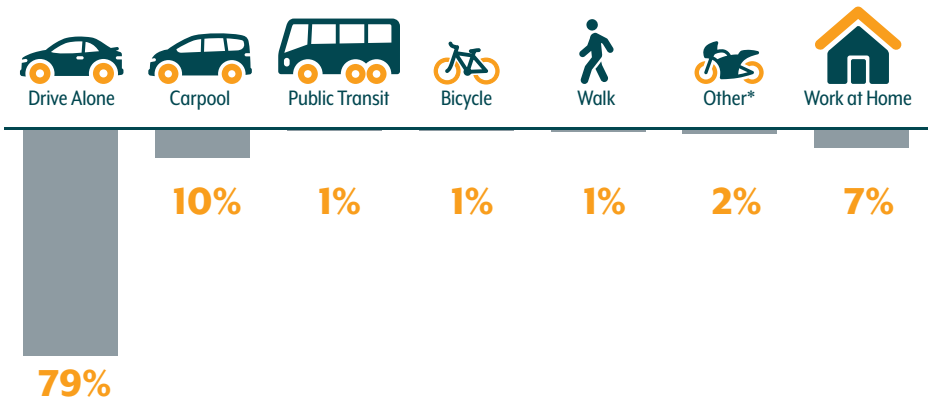


Commute Mode
for Workers in Chandler

Commute Modes in the Phoenix MSA, Ranked:

1. Drive Alone: 77%
2. Carpool: 11%
3. Work from Home: 6%
4. Public Transit: 2%
5. Other* : 1.8%
6. Walk: 1.5%
7. Bicycle: 0.8%

**Other commute modes include motorcycle, taxi, or other means not included in listed categories*



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602-254-6300 or mag@azmag.gov

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Source: Maricopa Association of Governments, Community Profile, revised 9/18/2019.

AIR QUALITY

The concentration of various pollutants in the atmosphere describes the local air quality. The significance of a pollution concentration is determined by comparing it to the state and federal air quality standards. In 1971, the U.S. Environmental Protection Agency (EPA) established standards that specify the maximum permissible short- and long-term concentrations of various air contaminants. The National Ambient Air Quality Standards (NAAQS) consist of primary and secondary standards for criteria pollutants: ozone (O_3), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), coarse particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead (Pb).

Based on federal air quality standards, a specific geographic area can be classified as either an "attainment," "maintenance," or "nonattainment" area for each pollutant. The threshold for nonattainment designation varies by pollutant. Maricopa County is designated as a nonattainment area for 8-hour O_3 (2008 Moderate), 8-hour O_3 (2015 Marginal), and PM_{10} (Serious). The county was previously a nonattainment area for CO and was designated as a maintenance area in 2005.[10] The county is in attainment for all other criteria pollutants.

BIOLOGICAL RESOURCES

Biotic resources include the various types of plants and animals that are present in an area. The term also applies to rivers, lakes, wetlands, forests, and other habitat types that support plants and animals.

The U.S. Fish and Wildlife Service (USFWS) is charged with overseeing the requirements contained within Section 7 of the *Endangered Species Act* (ESA). The ESA was put into place to protect animal or plant species whose populations are threatened by human activities. Along with the FAA, the USFWS reviews projects to determine if a significant impact to protected species will result in the implementation of a proposed project. Significant impacts occur when a proposed action could jeopardize the continued existence of a protected species or would result in the destruction or adverse modification of federally designated critical habitat in the area.

On November 5 and 7, 2019, SWCA Environmental Consultants (SWCA) performed a biological survey of the airport and adjacent area to determine the presence of endangered and/or threatened species and habitat.[11] Seventeen species protected under the ESA were identified in Maricopa County, and it was determined that none of these species was observed in or near the project area, nor was critical habitat or proposed critical habitat present near the airport.

The biological survey noted that while critical habitat or proposed critical habitat for five species was present within Maricopa County – acuña cactus (*Echinomastus erectocentrus* var. *acunensis*), Mexican

[10] U.S. Environmental Protection Agency Green Book (https://www3.epa.gov/airquality/greenbook/anayo_az.html); September 2019.
[11] SWCA Environmental Consultants *Biological Overview for the Chandler Municipal Airport Master Plan Update Project, Maricopa County, Arizona* (November 2019).

spotted owl (*Strix occidentalis lucida*), razorback sucker (*Xyrauchen texanus*), southwestern willow flycatcher (*Empidonax traillii extimus*), and yellow-billed cuckoo (*Coccyzus americanus*) – they are not present at the airport. Additionally, according to the biological report, there are no records of any species listed under the ESA within two miles of the airport.

The USFWS Information for Planning and Consultation (IPaC) report was also considered, and it reports that there are three avian species federally listed as threatened or endangered which have the potential to occur in the vicinity of the airport, identified in **Table 1L** below. Like the biological survey, the IPaC report notes that habitat for these species is not found on airport property.

TABLE 1L
Federally Listed Endangered Species
Chandler Municipal Airport – Maricopa County, AZ

Common Name (*Scientific Name*)	Federal Status	Habitat
California least tern (*Sterna antillarum browni)*	Endangered	The California least tern lives along the coast, nesting on open beaches free of vegetation due to tidal activity.[12] Nests are in shallow depressions on open sandy beaches, sandbars, gravel pits, or exposed flats along shorelines of inland rivers, lakes, reservoirs, and drainage systems.
Yellow-billed cuckoo *(Coccyzus americanus)*	Threatened	The yellow-billed cuckoo uses a variety of riparian woodland vegetation (cottonwood, willow, or salt cedar) at elevations below 6,000 amsl*. Dense understory foliage appears to be an important factor in nest site selection and appears to require large blocks of habitat for breeding.[13]
Yuma clapper rail (*Rallus longirostris yumanensis*)	Endangered	The Yuma clapper rail is a marsh bird that prefers dense emergent riparian vegetation, such as fresh-water marshes thick with cattail or bulrush. Habitat for the Yuma clapper rail includes freshwater and alkali marshes with emergent vegetation with areas of open water and drier, upland benches.[14]

*amsl – above mean sea level
Source: U.S. Fish and Wildlife Service: Information for Planning and Consulting (https://ecos.fws.gov/ipac/); September 2019.

IPaC identified no critical habitat at the airport.

Additional federal laws that may be applicable to the airport are the *Bald and Golden Eagle Protection Act* (BGEPA) and *Migratory Bird Treaty Act* (MBTA), prohibiting activities that would harm eagles and other migratory birds, their eggs, or nests. Birds protected under the BGEPA and MBTA may nest, winter, or migrate throughout the area, including those protected by the ESA. Under the requirements of the

[12] U.S. Fish and Wildlife Service - California least tern (https://www.fws.gov/sacramento/es_species/Accounts/Birds/ca_least_tern/); December 2019.
[13] U.S. Fish and Wildlife Service – western yellow-billed cuckoo (https://www.fws.gov/sacramento/es_species/Accounts/Birds/yellow_billed_cuckoo/); December 2019.
[14] U.S. Fish and Wildlife Service – Yuma clapper rail (https://www.fws.gov/nevada/protected_species/birds/species/yucr.html); December 2019.

BGEPA and MBTA, all project proponents are responsible for complying with the appropriate regulations protecting birds when planning and developing a project.

SWCA conducted an evaluation to determine the possible presence of migratory birds at the airport. During the field survey in early November 2019, 21 migratory birds were observed, all of which are protected under the MBTA. Artificial burrows for the western burrowing owl were noted in a grassy area between Airport Boulevard and Chandler Paseo Trail; however, no western burrowing owls were observed during the field survey. Also observed were cavities in a saguaro (*Carnegiea gigantea*) located near the administration building, most likely used as nesting sites for the European starling (*Sturnus vulgaris*) or the gila woodpecker. European starlings are not protected under MBTA.

The IPaC report, which was also consulted, lists five migratory bird species that could be present at the airport, identified in **Table 1M** below.

TABLE 1M
Birds Protected Under the *Migratory Bird Treaty Act*
Chandler Municipal Airport – Maricopa County, AZ

Species Name	Scientific Name	Breeding Season
Bald eagle	*Haliaeetus leucocephalus*	October 15 to August 31
Black-chinned sparrow	*Spizella atrogularis*	April 15 to July 31
Western burrowing owl	*Athene cunicularia*	March 15 to August 31
Costa's Hummingbird	*Calypte costae*	January 15 to June 10
Gila woodpecker	*Melanerpes uropygialis*	April 1 to August 31

Source: U.S. Fish and Wildlife Service: Information for Planning and Consulting (https://ecos.fws.gov/ipac/); September 2019.

COASTAL RESOURCES

Federal activities involving or affecting coastal resources are governed by the *Coastal Barriers Resource Act* (CBRA), the *Coastal Zone Management Act* (CZMA), and Executive Order (E.O.) 13089, *Coral Reef Protection*.

CHD is located approximately 317 miles from the Pacific Ocean, the nearest U.S. protected coastal area. Therefore, the airport is not located within a coastal zone. The closest National Marine Sanctuary is the Channel Islands National Marine Sanctuary, sited approximately 411 miles west of the airport.

CLIMATE

The EPA's *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2017* found that the transportation sector, which includes aviation, accounted for approximately 29 percent of U.S. greenhouse gas (GHG) emissions in 2017. Of this, the aviation sector contributed approximately 175.0 million metric tons (MMT) of carbon dioxide equivalent (CO_2e), or nearly 9.4 percent of all transportation emissions.[15, 16] Transportation emission sources include cars, trucks, ships, trains, and aircraft. Most GHG emissions from transportation systems are carbon dioxide (CO_2) emissions resulting from the combustion of petroleum-based products in internal combustion engines. Relatively insignificant amounts of methane (CH_4), hydrofluorocarbon (HFC), and nitrous oxide (N_2O) are emitted during fuel combustion. From 1990 to 2017, total transportation emissions increased. The upward trend is largely due to increased demand for travel; however, much of this travel was done in passenger cars and light-duty trucks. In addition to transportation-related emissions, **Figure 1F** shows all GHG emissions sources in the U.S. in 2017.

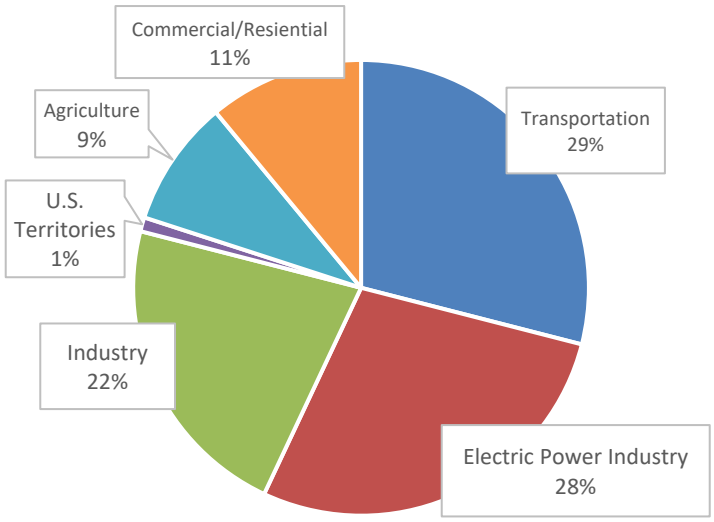


FIGURE 1F - 2017 SOURCES OF GREENHOUSE GAS EMISSIONS IN THE U.S. SOURCE: U.S. EPA (2019)

Increasing concentrations of GHGs can affect global climate by trapping heat in the Earth's atmosphere. Scientific measurements have shown that Earth's climate is warming with concurrent impacts, including warmer air temperatures, rising sea levels, increased storm activity, and greater intensity in precipitation events. Climate change is a global phenomenon that can also have local impacts (Intergovernmental Panel on Climate Change, 2014). GHGs, such as water vapor (H_2O), CO_2, CH_4, N_2O, and O_3, are both naturally occurring and anthropogenic (man-made).

The research has established a direct correlation between fuel combustion and GHG emissions. GHGs from anthropogenic sources include CO_2, CH_4, N_2O, HFCs, perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). CO_2 is the most important anthropogenic GHG because it is a long-lived gas that remains in the atmosphere for up to 100 years.

Information regarding the climate for the City of Chandler and surrounding environs, including wind, temperature, and precipitation, are found earlier in this chapter.

[15] Aviation activity consists of emissions from jet fuel and aviation gasoline consumed by commercial aircraft, general aviation, and military aircraft.

[16] Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2017, Table 2-13 (https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2017)

DEPARTMENT OF TRANSPORTATION ACT, SECTION 4(f)

Section 4(f) of the Department of Transportation (DOT) Act, which was recodified and renumbered as Section 303(c) of 49 USC, provides that the Secretary of Transportation will not approve any program or project that requires the use of any publicly or privately owned historic sites, public parks, recreation areas, or waterfowl and wildlife refuges of national, state, regional, or local importance unless there is no feasible and prudent alternative to the use of such land, and the project includes all possible planning to minimize harm resulting from the use.

Table 1N summarizes properties of each type that may be protected under Section 4(f) of the DOT Act within the vicinity of the airport:

TABLE 1N
Department of Transportation Section 4(f) Resources Within the Vicinity of the Airport
Chandler Municipal Airport – Maricopa County, AZ

Facility	Distance from Airport (miles)	Direction from Airport
National Register of Historic Places		
Railroad Steam Wrecking Crane and Tool Car	0.8	West
San Marcos Hotel	2.5	Northwest
Chandler Commercial Historic District	2.5	Northwest
Silk Stocking Neighborhood Historic District	2.6	Northwest
National Recreation Area		
Lake Mead National Recreation Area	198.6	Northwest
Wilderness Area		
Superstition Wilderness	21.5	Northeast
Wildlife Refuge		
San Bernardino National Wildlife Refuge	83.0	Southwest
Parks		
Chandler Paseo Trail	<0.1	West
Los Arboles Park	0.1	West
Tumbleweed Park	0.2	Northwest
Reflections Park	0.4	Northwest
Paseo Vista Recreation Area	0.6	Southwest
Arbuckly Park	0.8	North
Paseo Vista Recreation Area Bark Park	0.9	Southwest
Centennial Park	0.8	Southeast
San Tan Park	1.4	North
Folly Memorial Park	2.0	Northwest

Sources: Google Earth Aerial Imagery (dated August 28, 2018); Coffman Associates analysis

FARMLANDS

Under the *Farmland Protection Policy Act* (FPPA), federal agencies are directed to identify and take into account the adverse effects of federal programs on the preservation of farmland, to consider appropriate alternative actions which could lessen adverse effects, and to assure that such federal programs are, to the extent practicable, compatible with state or local government programs and policies to protect farmland. The FPPA guidelines, developed by the U.S. Department of Agriculture (USDA), apply to farmland classified as prime or unique, or of state or local importance as determined by the appropriate government agency, with concurrence by the Secretary of Agriculture.

Information obtained from the Natural Resource Conservation Service's (NRCS) Web Soil Survey (WSS) indicates that soils indicative of important farmlands are present throughout the airport property. The airport has soils that are either classified as "prime farmland if irrigated" or "prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season." **Table 1P** below breaks down the ratio of each soil type and is depicted in **Exhibit 1J**.

TABLE 1P
Farmland Classification
Chandler Municipal Airport – Maricopa County, AZ

Farmland Classification	Acres of Farmland	Percent of Airport
Prime Farmland if Irrigated	287.1	51.9%
Prime Farmland if irrigated and either protected from flooding or not frequently flooded during the growing season	266	48.1%
Total	**553.1**	**100.0%**

Source: U.S. Department of Agriculture Natural Resources Conservation Service Web Soil Survey (https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx); September 2019.

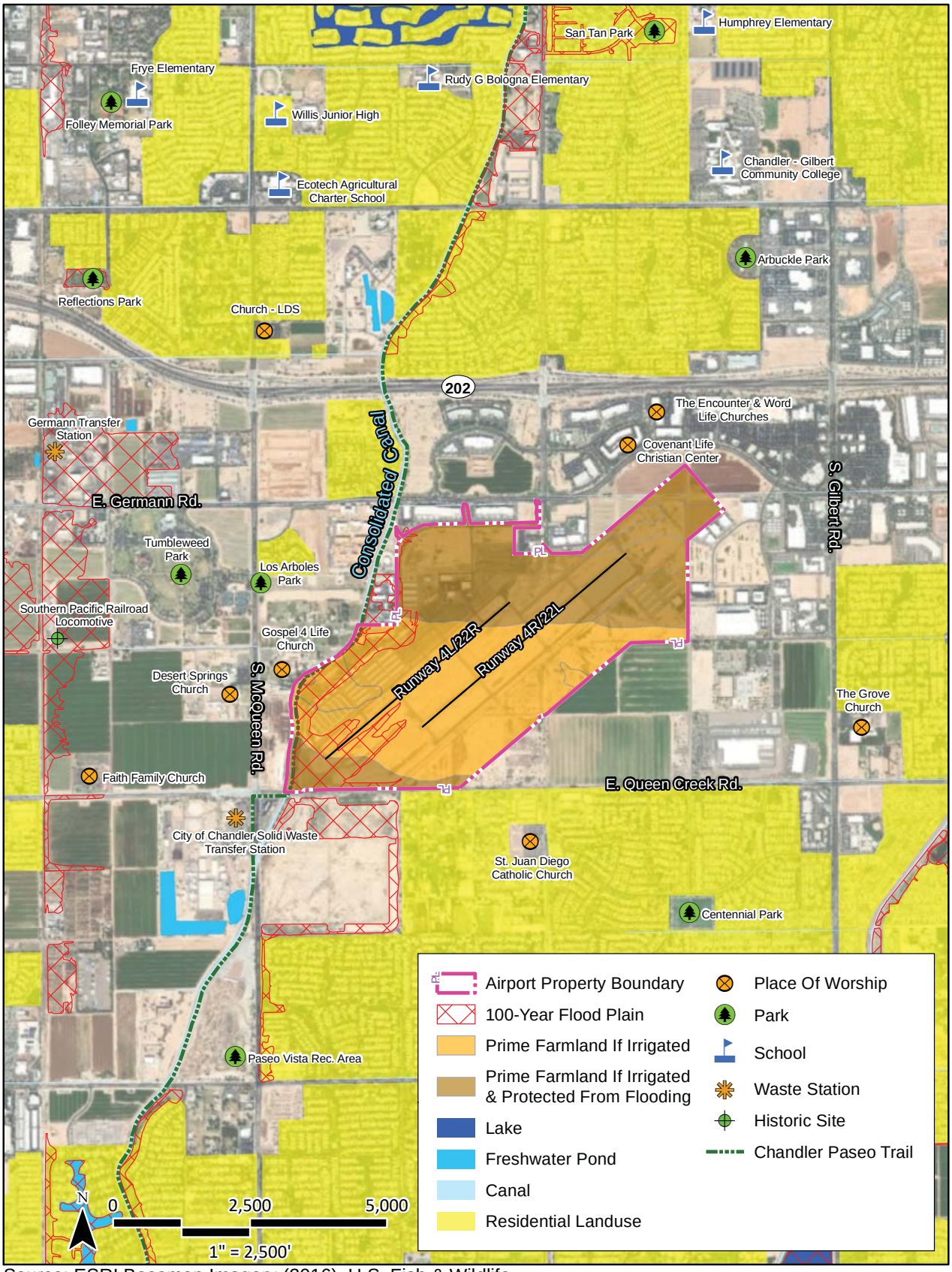
According to the United States Census Bureau,[17] the airport is in a non-urbanized area.

HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION

Federal, state, and local laws regulate hazardous materials use, storage, transport, and disposal. These laws may extend to past and future landowners of properties containing these materials. In addition, disrupting sites containing hazardous materials or contaminants may cause significant impacts to soil, surface water, groundwater, air quality, and the organisms using these resources. According to the EPA's *EJSCREEN*, there are no Superfund or brownfields sites within five miles of the airport.[18]

A potentially contaminated site subject to a restrictive covenant (a Declaration of Environmental Use Restriction [DEUR]), has been identified under the north apron. The DEUR encumbers property to ensure current and future property owners are aware of contamination, ensures that actions are taken to pre-

[17] United States Census Bureau (https://www.census.gov/).
[18] U.S. Environmental Protection Agency *EJSCREEN* (https://ejscreen.epa.gov/mapper/); September 2019.



Source: ESRI Basemap Imagery (2016), U.S. Fish & Wildlife Service, U.S. Dept. of Agriculture, City of Chandler, AZ Parks & Recreation Dept.

vent or mitigate additional contamination, and is monitored by the Arizona Department of Environmental Quality (ADEQ). A triangular-shaped contaminated site has been indicated at the termination of South Cooper Road, south of Runway 4R-22L.

The following municipal solid waste stations are within the vicinity of the airport:

- the City of Chandler Solid Waste Transfer Station is located approximately 0.24 miles southwest; and
- the Germann Transfer Station is approximately 1.2 miles west.

HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Determination of a project's environmental impact to historic and cultural resources is made under guidance in the *National Historic Preservation Act* (NHPA) *of 1966*, as amended, the *Archaeological and Historic Preservation Act* (AHPA) *of 1974*, the *Archaeological Resources Protection Act* (ARPA), and the *Native American Graves Protection and Repatriation Act* (NAGPRA) *of 1990*. In addition, the *Antiquities Act of 1906*, the *Historic Sites Act of 1935*, and the *American Indian Religious Freedom Act of 1978* also protect historical, architectural, archaeological, and cultural resources. Impacts may occur when a proposed project causes an adverse effect on a resource which has been identified (or is unearthed during construction) as having historical, architectural, archaeological, or cultural significance.

In November 2019, SWCA conducted an archaeological field survey of the entire airport to determine if historically significant artifacts are present.[19] During the field survey, six isolated occurrences (IOs) were identified consisting of fragmented sun-colored amethyst glass, whiteware ceramic, colorless glass, milk glass, and a horseshoe; and it was determined these IOs are ineligible for the NRHP. No historic-era buildings or structures were identified during the field survey area.

Prior to the November 2019 archaeological survey performed by SWCA, two previous archaeological surveys have been conducted in the project area. SWCA included the conclusions of these surveys in the November 2019 report, and are summarized as follows:

- In 1998, a linear archaeological survey was conducted on 181 acres for a proposed widening of South McQueen Road, and no cultural resources were identified.
- In 2004, SWCA performed a block survey on approximately 50 acres for a proposed drainage improvement project. Only 15 acres of the survey area was on airport property. One IO was identified during the course of the survey and it was not located on airport property.

Four sites listed on the National Register of Historic Places (NRHP) are within five miles of the airport. These include:

[19] SWCA Environmental Consultants *Cultural Resources Survey for the Chandler Municipal Airport Master Plan Update Project, Maricopa County, Arizona* (November 2019).

- Railroad Steam Wrecking Crane and Tool Car
- Chandler Commercial Historic District
- San Marcos Hotel
- Silk Stocking Neighborhood Historic District

The nearest Native American feature is the Gila River Indian Reservation, located approximately four miles east of the airport.

LAND USE

CHD is located within the Chandler Airpark area, which is a nine-square mile business park anchored by the airport. The boundary for the Chandler Airpark and major businesses are depicted in **Figure 1G**. The *Chandler General Plan* prescribes general policies relating to the Airpark, including protecting "the air-space around the Chandler Municipal Airport by requiring that development heights comply with the Federal Aviation Administration filing and flight safety standards."

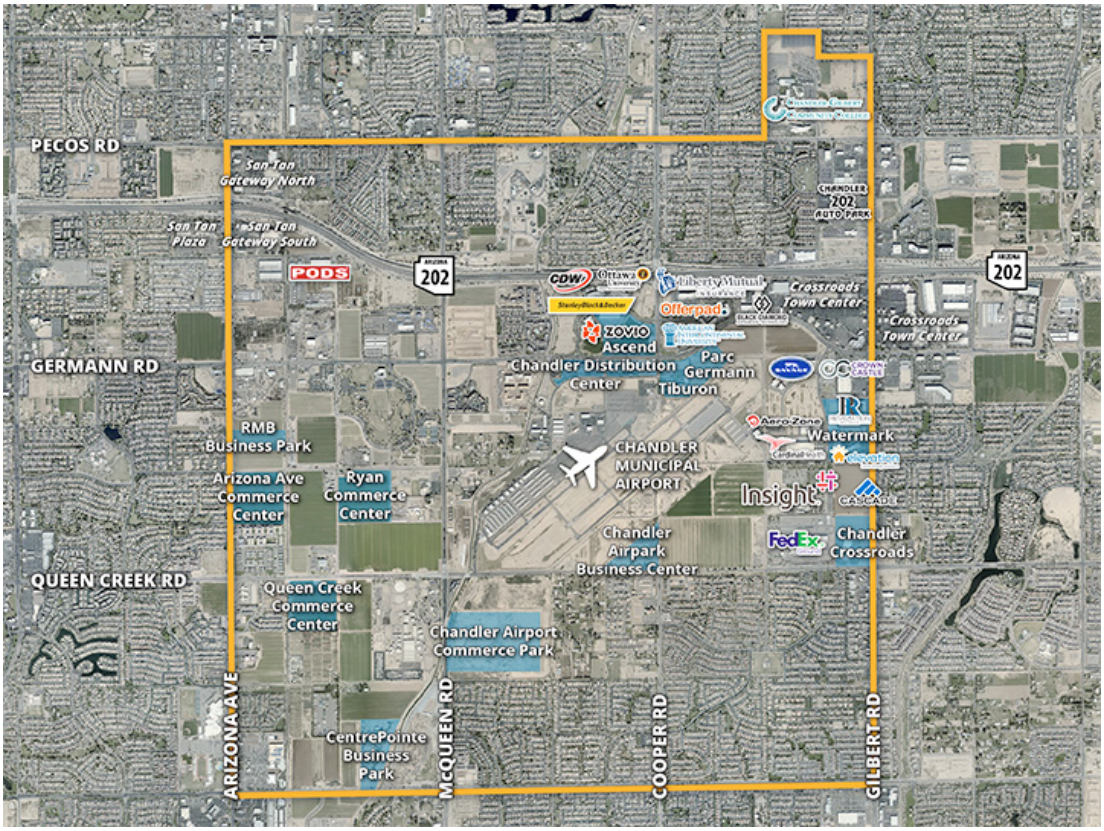


FIGURE 1G – CHANDLER AIRPARK | SOURCE: CITY OF CHANDLER ECONOMIC DEVELOPMENT

Existing land uses in the vicinity of CHD are depicted on **Exhibit 1K**. Land uses immediately adjacent to the airport are a mixture of commercial, industrial, and agricultural. High density, low density, and rural residential uses are also within the vicinity to the northwest and south of the airport.

The City of Chandler *General Plan 2016* designates the airport and airpark area as one of six targeted growth areas in the city. The Future Land Use Plan, depicted on **Exhibit 1L**, shows the airport and surrounding area planned for future employment development.

An Airport Impact Overlay District (AIO) has been codified in Chapter 35, *Land Use and Zoning*, of the *General Ordinances of the City of Chandler*.[20] The purpose and intent of the AIO is to ensure public health around the airport by minimizing exposure to high noise level and accidental hazards associated with airport operations and to encourage surrounding development compatible with the airport. The AIO boundary is codified in Section 35-3001(A) and described as "Sections 1, 2, 3, 10, 11, 12, 13, 14, and 15 of Township 2 South, Range 5 of the Gila and Salt River Meridians."

Three Airport Noise Overlays (ANO) and one Clear Zone Overlay (CZO) areas are established to provide clear and defining boundaries for compatible development around the airport. The ANOs are defined by 2005 noise contours published in the 2010 Chandler Municipal Airport Master Plan,[21] with each ANO zone defined by the 55 day-night average sound level (L_{dn}) – 60 L_{dn}, 60 L_{dn} – 70 L_{dn}, and greater than 70 L_{dn} contours. The CZO is defined as the "area on either side of an extension of the centerline of a runway beginning at a line two hundred (200) feet from the end of a runway and, for Runway 4L-22R of the Chandler Municipal Airport: two hundred fifty (250) feet wide and flaring outward to a width of four hundred fifty (450) feet at a distance of one thousand (1,000) feet; for Runway 4R-22L of the Chandler Municipal Airport: five hundred (500) feet wide and flaring outward to a width of one thousand ten (1,010) feet at a distance of one thousand seven hundred (1,700) feet…"

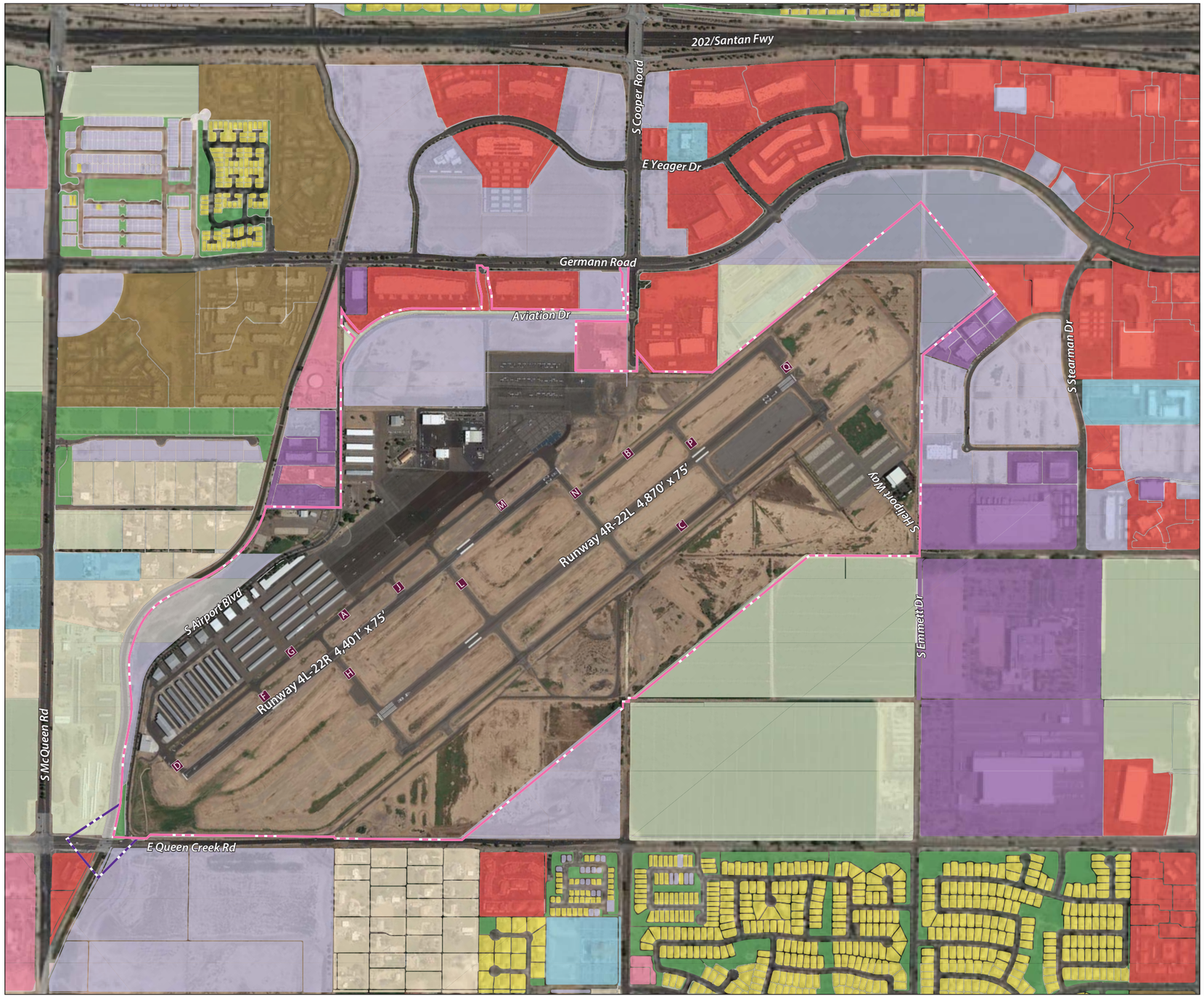
Permitted uses within the ANO and CZO are permitted with the underlying zoning district; however, uses are subject to additional height and safety regulations set forth in Section 35-3005 of the municipal code.

The Airport District (AP-1) is intended to provide for aircraft operations, air services, and related commercial uses for the airport owned or leased by the City of Chandler. The AP-1 zoning district establishes strict bulk development standards (such as height limitations and setbacks) to ensure the safety and compatibility with airport operations. The boundaries of the AP-1 zoning district are intended to coincide with the airport property line and not be considered for a rezoning classification. Principle uses under this district include those necessary for airport operations, such as aircraft hangars, ATCT, or aviation fuel farms. Additional uses allowed in the AP-1 district are FBOs, heliports, and office space as an accessory to an approved principal use.

NATURAL RESOURCES AND ENERGY SUPPLY

E.O. 13423, *Strengthening Federal Environmental, Energy, and Transportation Management* instructs federal agencies to advance the nation's energy security and environmental performance by achieving specified goals. Natural resources and energy supply provide an evaluation of a project's consumption of natural resources. It is the policy of FAA Order 1053.1, *Energy and Water Management Program for*

[20] City of Chandler, AZ *General Ordinances of the City of Chandler* (https://www.chandleraz.gov/government/departments/city-clerks-office/city-code-and-charter); accessed September 2019.
[21] Wilbur Smith Associates *Chandler Municipal Airport 2010 Airport Master Plan Update* (April 2010).



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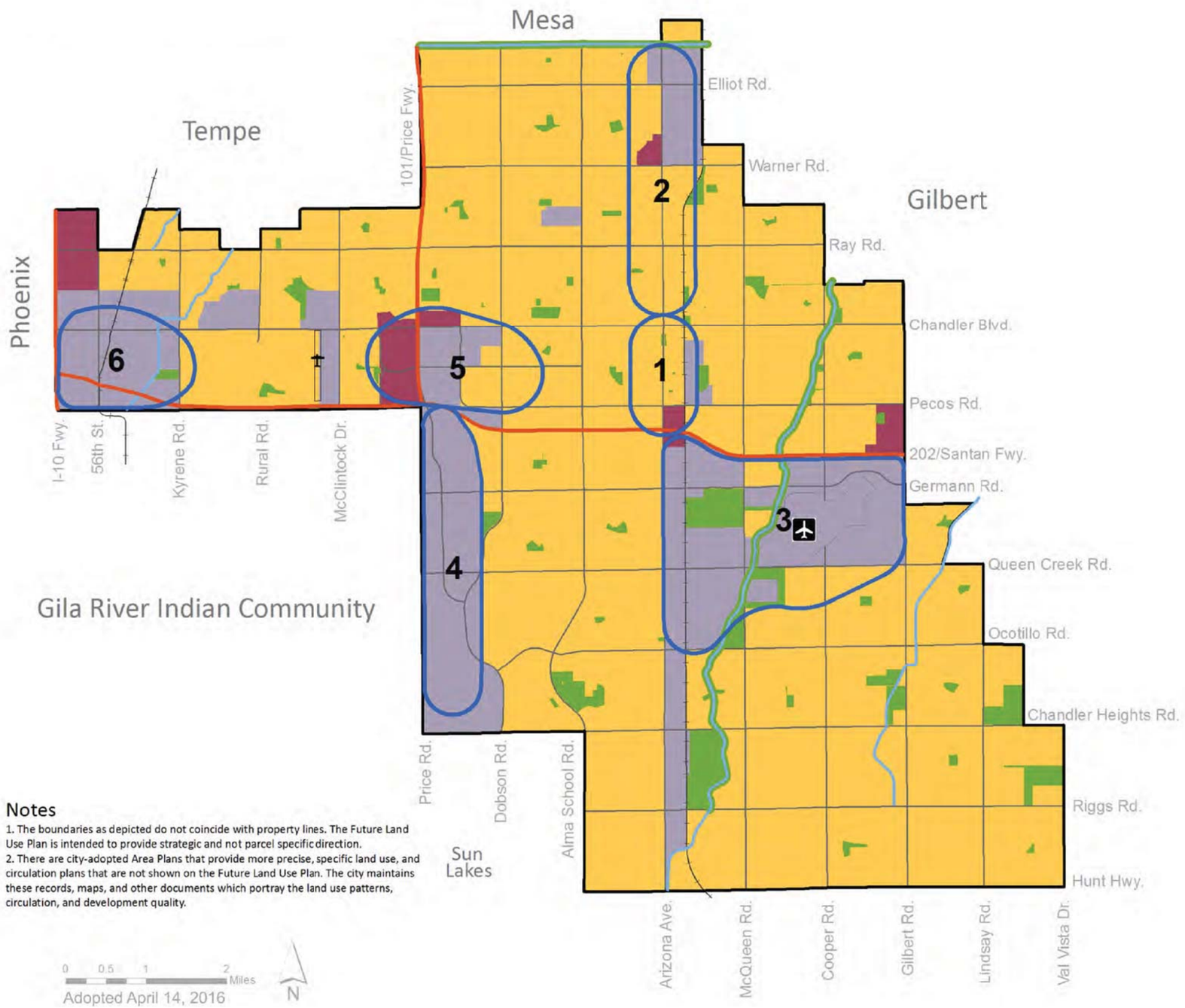
0 1,000

SCALE IN FEET

Photo: Google Earth 8/19

LEGEND

- Existing Airport Property Line
- Existing Avigation Easement
- A Taxiway Designation
- Agriculture
- Commercial
- Noise Sensitive
- High Density Residential
- Industrial
- Low Density Residential
- Open Space
- Public Buildings/Facilities
- Rural Residential
- Vacant



Notes

1. The boundaries as depicted do not coincide with property lines. The Future Land Use Plan is intended to provide strategic and not parcel specific direction.
2. There are city-adopted Area Plans that provide more precise, specific land use, and circulation plans that are not shown on the Future Land Use Plan. The city maintains these records, maps, and other documents which portray the land use patterns, circulation, and development quality.

Future Land Use Plan Map

Neighborhoods
This category allows a range of residential densities and a variety of non-residential uses such as commercial, institutional, public facilities, and commercial offices based upon location and other criteria as described in the text of the general plan.

Regional Commercial
Major regional commercial uses such as shopping malls, power centers, large single-use retail, and other commercial centers. As described in the general plan text, these locations are eligible for consideration of urban-style mixed-use developments. Other supportive land uses that may be allowed include large offices and mixed residential densities.

Employment
Major employers, knowledge-based employers, industrial/business parks, and industrial support uses. A compatible mix of supporting commercial uses and residential densities as an integral component may be considered as described in the General Plan text, growth area policies, and area plans.

Recreation/Open Space
Public parks and open spaces shown are greater than approximately five acres. Refer to the Parks and Open Space Map for more information.

Growth Areas
Targeted areas suitable for planned multimodal transportation and infrastructure expansion and improvements designed to support economic growth with a planned concentration of a variety of uses such as residential, office, commercial, tourism, and industrial. A.R.S. §9-461.05

1. Downtown Chandler
2. North Arizona Avenue
3. Chandler Airpark
4. South Price Road Corridor
5. Medical/Regional Retail
6. I-10/Loop 202

CHANDLER GENERAL PLAN 2016 *a vision refined*

Source: Chandler General Plan 2016

FAA Buildings and Facilities, to encourage the development of facilities that exemplify the highest standards of design, including principles of sustainability.

Natural resources and energy supply are discussed earlier in this chapter under "Fuel Facilities and Equipment" and "Utilities."

NOISE AND NOISE-COMPATIBLE LAND USE

Federal land use compatibility guidelines are established under 14 Code of Federal Regulations (CFR) Part 150, *Airport Noise Compatibility Planning*. According to 14 CFR Part 150, residential land uses and schools are noise-sensitive land uses that are not considered compatible with a 65 decibel (dB) Day-Night Average Sound Level (L_{dn}). Other noise-sensitive land uses (such as religious facilities, hospitals, or nursing homes), if located within a 65 dB L_{DN} contour, are generally compatible when an interior noise level reduction of 25 dB is incorporated into the design and construction of the structure. Special consideration should also be given to noise-sensitive areas within Section 4(f) properties where the land use compatibility guidelines in 14 CFR Part 150 do not account for the value, significance, and enjoyment of the area in question.

A 14 CFR Part 150 Study was conducted for the airport in the late 1990s, with the FAA issuing a Record of Approval on July 11, 2000.[22] A Noise Exposure Map update was performed in February 2010.

Currently, the AIO incorporated noise overlays established by noise contours generated in 2005. The noise overlay was discussed in detail in the "Land Use" section of this chapter.

Noise-sensitive land uses near the airport consist primarily of residential uses to the west, south, and east. Additional noise-sensitive land uses within approximately one mile of the airport are outlined in **Table 1Q** below.

While there are additional noise-sensitive land uses in the City of Chandler, they are beyond one mile of the airport boundary.

[22] Federal Aviation Administration *Planning Data and Noise Compatibility Program Status – Arizona* (https://www.faa.gov/airports/environmental/airport_noise/part_150/states/az/); December 2019.

TABLE 1Q
Noise-Sensitive Land Uses within One Mile of the Airport
Chandler Municipal Airport – Maricopa County, AZ

Facility	Distance from Airport (miles)	Direction from Airport
Schools/Child Care Centers		
Chandler Christian School	0.2	West
Kids Incorporated Learning Center	0.4	East
Archway Lincoln Academy	0.4	East
Great Hearts Academy	0.4	East
Life Christian Child Care	0.7	East
Places of Worship		
Gospel 4 Life Church	0.2	West
Desert Springs Church	0.2	West
Covenant Life Christian Center	0.2	North
The Encounter Church	0.3	North
Word Life Church	0.3	North
Saint Juan Diego Catholic Church	0.4	South
Faith Family Church	0.6	West
The Grove	1.0	East
The Chruch of Jesus Christ of Latter-day Saints	1.0	North
The Chruch of Jesus Christ of Latter-day Saints	1.0	South
Cox Church	1.0	North
Hospitals/Health Care/Senior Care Facilities		
Dignity Health	0.4	East
Four Roses Assisted Living	0.8	South
Parks/Recreational Facilities		
Chandler Paseo Trail	<0.1	West
Los Arboles Park	0.1	West
Tumbleweed Park	0.2	Northwest
Reflections Park	0.4	Northwest
Paseo Vista Recreation Area	0.6	Southwest
Arbuckly Park	0.8	North
Paseo Vista Recreation Area Bark Park	0.9	Southwest
Centennial Park	0.8	Southeast

Sources: Google Earth Aerial Imagery (dated August 28, 2018); Coffman Associates analysis

SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

Socioeconomics is an umbrella term used to describe aspects of a project that are either social or economic in nature. A socioeconomic analysis evaluates how elements of the human environment such as population, employment, housing, and public services might be affected by the proposed action and alternative(s).

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people should

bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies. Meaningful Involvement[23] ensures that:

- people have an opportunity to participate in decisions about activities that may affect their environment and/or health;
- the public's contribution can influence the regulatory agency's decision;
- their concerns will be considered in the decision-making process; and
- the decision-makers seek out and facilitate the involvement of those potentially affected.

FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures* specifically requires that a federal action causing disproportionate impacts to an environmental justice population (i.e., a low-income or minority population), be considered, as well as an evaluation of environmental health and safety risks to children. The EPA's *EJSCREEN* online tool identifies the presence of environmental justice areas within the airport environs. The population within five miles of the airport is approximately 237,000, of which 20 percent of the population is considered low-income and 38 percent are considered a minority population. Likewise, according to *EJSCREEN*, seven percent of the population is under the age of five within a five-mile radius of the airport.

VISUAL EFFECTS

Visual effects deal broadly with the extent to which a proposed action or alternative(s) would either (1) produce light emissions that create an annoyance or interfere with activities; or (2) contrast with, or detract from, the visual resources and/or the visual character of the existing environment. Each jurisdiction will typically address outdoor lighting, scenic vistas, and scenic corridors in zoning ordinances and their general plan.

Light emissions include any light that originates from a light source into the surrounding environment, such as airfield and apron floodlighting, navigational aids, parking lot illumination, and roadway lighting. Glare is a type of light emission that occurs when light is reflected off a surface, including solar panels or window glass.

Visual character refers to the overall visual makeup of the existing environment where a proposed action or its alternative(s) would be located. For example, areas near densely populated areas generally have a visual character that could be defined as urban, whereas less developed areas could have a visual character defined by the surrounding landscape features, such as open grass fields, forests, mountains, or deserts, etc.

Visual resources include buildings, sites, traditional cultural properties, and other natural or manmade landscape features that are visually important or have unique characteristics. Visual resources may include structures or objects that obscure or block other landscape features. In addition, visual resources can include the cohesive collection of various individual visual resources that can be viewed at once or in concert from the area surrounding the site of the proposed action or alternative(s).

[23] Requirements for meaningful public involvement by minority and low-income populations are addressed in Paragraph 2-5.2.b of FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*.

Light Emissions. Light emission impacts typically relate to the extent to which any light or glare results from a source that could create an annoyance for people or would interfere with normal activities. Generally, local jurisdictions will include ordinances in the local code addressing outdoor illumination to reduce the impact of light on surrounding properties.

According to the City of Chandler's Land Use and Zoning Code, "all external lighting shall be located and designed to prevent lighting rays from being directed off the property upon which the lighting is located."

The City of Chandler and its surrounding environs are not designated as dark sky places. However, Tonto National Monument, located approximately 47 miles northeast, is designated as an International Dark Sky Park.[24]

Visual Resources and Visual Character. Impact on visual resources and visual character typically relates to a reduction in the aesthetic quality of the surrounding environs from development, construction, or demolition. When making a determination of visual impacts, consideration should be made whether a proposed project or alternative(s) would have an effect on any visual resources or alter local character.

The City of Chandler's *Land Use and Zoning Code*[25] does not address scenic vistas or corridors. The *Chandler General Plan*[26] states the importance of incorporating open space areas that replicate the natural desert habitat as the city comes to full build-out. According to the Federal Highway Administration, no scenic byways are located within the vicinity of the airport.[27]

WATER RESOURCES

Wetlands. The U.S. Army Corps of Engineers regulates the discharge of dredged and/or fill material into waters of the United States, including adjacent wetlands, under Section 404 of the *Clean Water Act* (CWA). Wetlands are defined in E.O. 11990, *Protection of Wetlands*, as "those areas that are inundated by surface or groundwater with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction." Wetlands can include swamps, marshes, bogs, sloughs, potholes, wet meadows, river overflows, mudflats, natural ponds, estuarine areas, tidal overflows, and shallow lakes and ponds with emergent vegetation. Wetlands exhibit three characteristics: the soil is inundated or saturated to the surface at some time during the growing season (hydrology), has a population of plants able to tolerate various degrees of flooding or frequent saturation (hydrophytes), and soils that are saturated enough to develop anaerobic (absent of air or oxygen) conditions during the growing season (hydric).[28]

[24] International Dark Sky Association (https://www.darksky.org/); December 2019.
[25] City of Chandler Planning and Zoning, Chapter 35 *Land Use and Zoning Code* (https://www.chandleraz.gov/government/departments/development-services/planning-and-zoning); December 2019.
[26] City of Chandler Planning and Zoning *Chandler General Plan* (April 2016) (https://www.chandleraz.gov/government/departments/development-services/planning-and-zoning); December 2019.
[27] Federal Highway Administration (https://www.fhwa.dot.gov/byways/states/AZ); December 2019.
[28] National Resources Conservation Service – U.S. Department of Agriculture (https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/use/hydric/?cid=nrcs142p2_053961); September 2019.

According to USFWS, which manages the National Wetlands Inventory on behalf of all federal agencies, the Consolidated Canal west of the airport and stormwater drainage along East Germann Road north of the airport has been identified as wetlands; although it is important to note that these areas were identified as wetlands based on a review of undated aerial photography. Upon review of a Google Earth aerial image (image dated August 28, 2018), the canal and drainage ways are still present. No wetlands are identified on airport property.

Based on information from the NRCS-WSS, no hydric soils are present on airport property.

Floodplains. E.O. 11988, *Floodplain Management*, directs federal agencies to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial values served by the floodplains. A review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panels 04013C2739M and 04013C2743M (dated November 4, 2015) indicates the presence of a Special Flood Area, identified as Zone AH, associated with the Consolidated Canal within the southwest area of the airport, impacting taxiways and Runway 4L-22R. The AH Zone is subject to a 100-year flood event with a one- to three-foot flood depth, with a base elevation of 1,230 feet above sea level.

Surface Waters. The CWA establishes water quality standards, control discharges, develop waste treatment management plans and practices, prevent or minimize the loss of wetlands, and regulate other issues concerning water quality. Water quality concerns related to airport development most often relate to the potential for surface runoff and soil erosion, as well as the storage and handling of fuel, petroleum products, solvents, etc. Additionally, Congress has mandated (under the CWA) the National Pollutant Discharge Elimination System (NPDES). The Arizona Department of Environmental Quality has the authority to administer the NPDES program in the state, tribal lands excluded. The Arizona Pollutant Discharge Elimination System (AZPDES) permit mandates certain procedures required to prevent contamination of water bodies from stormwater runoff.

Examples of direct impacts to surface waters include any in-water work resulting from the expansion of an existing FAA facility adjacent to surface waters, or withdrawal of water from surface water for construction or operations. No impaired waters under Section 303(d) of the CWA are located within the vicinity of the airport.

A review of the National Hydrography Dataset, published by the United States Geological Survey, indicates there is an engineered drainage channel crossing through the north end of the airport along an airport service road north of Runway 4R-22L. A second drainage channel is the Consolidated Canal along the western boundary of the airport.

On November 5, 2019, SWCA performed a field investigation to determine whether the ephemeral drainages on airport property qualify as Waters of the United States (WOTUS).[29] It is concluded that all drainage features on the airport are ephemeral in nature, and only flow during localized precipitation events. These drainages do not show a developed bed or bank and do not have an ordinary high-water mark (OHWM) typical of a WOTUS. Most of these drainages can be described as small erosional features, swales, and/or engineered ditches.

[29] SWCA Environmental Consultants, Inc. *Wetlands and Other Waters of the U.S. Review for Chandler Municipal Airport Master Plan Update Project in Chandler, Maricopa County, Arizona* (November 25, 2019).

Other small, local canals on and around the airport benefiting individual fields do not receive water from natural surface flow and do not connect downstream to a WOTUS.

Wild and Scenic Rivers. The *National Wild and Scenic Rivers Act* was established to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. The closest designated Wild and Scenic River is a segment of the Verde River, located approximately 60 miles north of the airport.[30]

The Nationwide River Inventory (NRI) is a list of over 3,400 rivers or river segments that appear to meet the minimum *Wild and Scenic Rivers Act* eligibility requirements based on their free-flowing status and resource values. The development of the NRI resulted from Section 5(d)(1) in the *Wild and Scenic Rivers Act*, directing Federal agencies to consider potential wild and scenic rivers in the comprehensive planning process.[31] The river closest to the airport which appears on the NRI is a segment of the Arnett/Telegraph Creeks, located approximately 36 miles east of the airport.

Groundwater. Groundwater is subsurface water that occupies the space between sand, clay, and rock formations. The term aquifer is used to describe the geologic layers that store or transmit groundwater, such as wells, springs, and other water sources. Examples of direct impacts to groundwater could include withdrawal of groundwater for operational purposes or reduction of infiltration or recharge area due to new impervious surfaces. The geological make-up of the area includes fine-grained deposits of silt and clay, which tends to become more compact and less permeable with depth. Surrounding aquifers are considered basin-fill aquifers, which is typically bounded by low-permeability rock. Some basin-fill aquifers, like those found in parts of California and Arizona, have supplied water for irrigation and other uses.[32]

The Upper Santa Cruz and Avra Basin sole source aquifer is located approximately 40 miles southeast of the airport.[33]

ENVIRONMENTAL INVENTORY SOURCES

A variety of resources were used during the inventory process. The following listing reflects a compilation of these sources.

Federal Emergency Management Agency Flood Map Service Center:
https://msc.fema.gov/portal/search?AddressQuery=Chandler%2C%20AZ#searchresultsanchor

Intergovernmental Panel on Climate Change:
https://www.ipcc.ch/

[30] National Wild and Scenic Rivers System (https://rivers.gov/wsr-act.php); December 2019.
[31] National Park Service – Nationwide Rivers Inventory (https://www.nps.gov/subjects/rivers/nationwide-rivers-inventory.htm); December 2019.
[32] U.S. Geologive Survey – Aquifers and Groundwater (https://water.usgs.gov/ogw/aquifer/101514-wall-map.pdf); December, 2019.
[33] U.S. Environmental Protection Agency Sole Source Aquifer for Drinking Water (https://www.epa.gov/dwssa); September 2019.

National Wild and Scenic Rivers System:
https://rivers.gov/wsr-act.php

Natural Resources Conservation Service, Web Soil Survey:
https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

U.S. Environmental Protection Agency, *EJSCREEN*:
http://www.epa.gov/ejscreen

U.S. Environmental Protection Agency, Green Book National Area and County-Level Multi-Pollutant Information:
https://www3.epa.gov/airquality/greenbook/anayo_az.html

U.S. Fish and Wildlife Service Information, Information for Planning and Consultation:
https://ecos.fws.gov/ipac/

U.S. Fish and Wildlife Service National Wetlands Inventory:
http://www.fws.gov/wetlands/Data/Mapper.html

U.S. Geological Survey National Map:
http://nationalmap.gov/

U.S. National Park Service – National Register of Historic Places:
https://www.nps.gov/subjects/nationalregister/index.htm



Chapter Two

FORECASTS

The definition of demand that may reasonably be expected to occur during the useful life of an airport's key components (e.g., runways, taxiways, terminal buildings, etc.) is an important factor in facility planning. In airport master planning, this involves projecting potential aviation activity for at least a 20-year timeframe. Aviation demand forecasting for Chandler Municipal Airport (CHD) will primarily consider based aircraft, aircraft operations, and peak activity periods.

The Federal Aviation Administration (FAA) has oversight responsibility to review and approve aviation forecasts developed in conjunction with airport planning studies. FAA will review individual airport forecasts with the objective of comparing them to its *Terminal Area Forecasts* (TAF) and the *National Plan of Integrated Airport Systems* (NPIAS). Even though the TAF is updated annually, in the past there was almost always a disparity between the TAF and master planning forecasts. This was primarily because the TAF forecasts are the result of a top-down model that does not consider local conditions or recent trends. While the TAF forecasts are to be a point of comparison for master plan forecasts, they serve other purposes, such as asset allocation by the FAA.

When reviewing a sponsor's forecast (from the master plan), the FAA must ensure that the forecast is based on reasonable planning assumptions, uses current data, and is developed using appropriate forecast methods. As stated in FAA Order 5090.3C, *Field Formulation of the National Plan of Integrated Airport Systems* (NPIAS), forecasts should be:

- Realistic;
- Based on the latest available data;
- Reflective of current conditions at the airport (as a baseline);
- Supported by information in the study; and
- Able to provide adequate justification for airport planning and development.

The forecast process for an airport master plan consists of a series of basic steps that vary in complexity depending upon the issues to be addressed and the level of effort required. The steps include a review of previous forecasts, determination of data needs, identification of data sources, collection of data, selection of forecast methods, preparation of the forecasts, and documentation and evaluation of the results. FAA Advisory Circular (AC) 150/5070-6C, *Airport Master Plans*, outlines seven standard steps involved in the forecast process, including:

1) **Identify Aviation Activity Measures**: The level and type of aviation activities likely to impact facility needs. For general aviation, this typically includes based aircraft and operations.
2) **Review Previous Airport Forecasts**: May include the FAA *Terminal Area Forecast*, state or regional system plans, and previous master plans.
3) **Gather Data**: Determine what data are required to prepare the forecasts, identify data sources, and collect historical and forecast data.
4) **Select Forecast Methods**: There are several appropriate methodologies and techniques available, including regression analysis, trend analysis, market share or ratio analysis, exponential smoothing, econometric modeling, comparison with other airports, survey techniques, cohort analysis, choice and distribution models, range projections, and professional judgment.
5) **Apply Forecast Methods and Evaluate Results**: Prepare the actual forecasts and evaluate for reasonableness.
6) **Summarize and Document Results**: Provide supporting text and tables as necessary.
7) **Compare Forecast Results with FAA's TAF**: Based aircraft and total operations are considered consistent with the TAF if they meet the following criteria:
    - Forecasts differ by less than 10 percent in the five-year forecast period, and 15 percent in the 10-year forecast period, or
    - Forecasts do not affect the timing or scale of an airport project, or
    - Forecasts do not affect the role of the airport as defined in the current version of FAA Order 5090.3, *Field Formulation of the National Plan of Integrated Airport Systems*.

Aviation activity can be affected by many influences on the local, regional, and national levels, making it virtually impossible to predict year-to-year fluctuations of activity over 20 years with any certainty. Therefore, it is important to remember that forecasts are to serve only as guidelines, and planning must remain flexible enough to respond to a range of unforeseen developments.

The following forecast analysis for the airport was produced following these basic guidelines. Existing forecasts are examined and compared against current and historic activity. The historical aviation activity is then examined along with other factors and trends that can affect demand. The intent is to provide an updated set of aviation demand projections for the airport that will permit airport management to make planning adjustments as necessary to maintain a viable, efficient, and cost-effective facility.

The forecasts for this master plan will utilize a base year of 2019 with a long-range forecast out to 2040.

NATIONAL AVIATION TRENDS

Each year, the FAA updates and publishes a national aviation forecast. Included in this publication are forecasts for the large air carriers, regional/commuter air carriers, general aviation, and FAA workload measures. The forecasts are prepared to meet the budget and planning needs of the FAA and to provide information that can be used by state and local authorities, the aviation industry, and the general public. The current edition upon preparation of this chapter was FAA *Aerospace Forecasts – Fiscal Years 2019-2039*, published in April 2019. The FAA primarily uses the economic performance of the United States as an indicator of future aviation industry growth. Similar economic analyses are applied to the outlook for aviation growth in international markets. The following discussion is summarized from the FAA *Aerospace Forecasts*.

Since its deregulation in 1978, the U.S. commercial air carrier industry has been characterized by boom-to-bust cycles. The volatility that was associated with these cycles was thought by many to be a structural feature of an industry that was capital intensive but cash poor. However, the great recession of 2007-09 marked a fundamental change in the operations and finances of U.S. airlines. Since the end of the recession in 2009, U.S. airlines revamped their business models to minimize losses by lowering operating costs, eliminating unprofitable routes, and grounding older, less fuel-efficient aircraft. To increase operating revenues, carriers initiated new services that customers were willing to purchase and started charging separately for services that were historically bundled in the price of a ticket. The industry experienced an unprecedented period of consolidation with three major mergers in five years. The results of these efforts have been impressive: 2018 marked the tenth consecutive year of profitability for the U.S. airline industry. Prior to the COVID-19 pandemic, there was confidence that U.S. airlines have finally transformed from a capital intensive, highly cyclical industry to an industry that generates solid returns on capital and sustained profits.

The biggest factor affecting aviation trends currently is the COVID-19 pandemic. The effect of the pandemic on the aviation industry has been most devastating to the commercial airline operators with segments of the general aviation industry, such as charters, air taxi, and fractionals, appearing to maintain pre-pandemic levels and in many cases, showing increases as people sought alternatives to flying commercial. At this point, uncertainty persists on what the long-term impacts of the pandemic will be on the aviation industry.

ECONOMIC ENVIRONMENT

According to the FAA forecast, the economic growth of the U.S. is projected to increase by 2.9 percent in 2019 and 2.8 percent in 2020. Over the next 20 years, the annual gross domestic product (GDP) of the U.S. is expected to increase by 1.8 percent. U.S. carrier profitability is projected to remain steady or increase as demand supported by a stable economy offsets rising energy and labor costs. Over the long term, the aviation industry is expected to remain competitive and profitable with an increasing demand for air travel and airfares growing more slowly than inflation.

Prior to the COVID-19 pandemic, the economy was recovering from the most serious economic downturn and slow recovery since the Great Depression. Fundamentally, demand for aviation is driven by economic activity. As economic growth picks up, so will growth in aviation activity. Overall, the FAA forecast calls for passenger growth over the next 20 years to average 1.8 percent annually. Oil prices averaged $64 per barrel in 2018, edging down to $61 in 2019, and the forecast assumed continued increases reaching $98 per barrel by the end of the forecast period in 2039. It remains to be seen how the FAA will adjust these projections based on the impacts of COVID-19.

FAA GENERAL AVIATION FORECASTS

The long-term outlook for general aviation is stable to optimistic, as growth at the high-end offsets continuing retirements at the traditional low end of the segment. The active general aviation fleet is forecast to remain relatively stable between 2019 and 2039. While steady growth in both GDP and corporate profits results in continued growth of the turbine and rotorcraft fleets, the largest segment of the fleet – fixed-wing piston aircraft – continues to shrink over the forecast.

The FAA forecasts the fleet mix and hours flown for single engine piston aircraft, multi-engine piston aircraft, turboprops, business jets, piston and turbine helicopters, light sport, experimental, and others (gliders and balloons). The FAA forecasts “active aircraft,” not total aircraft. An active aircraft is one that is flown at least one hour during the year. From 2010 through 2013, the FAA undertook an effort to have all aircraft owners re-register their aircraft. This effort resulted in a 10.5 percent decrease in the number of active general aviation aircraft, mostly in the piston category.

Table 2A shows the primary general aviation demand indicators as forecast by the FAA. Since the FAA forecast period extends to 2039, the data was extrapolated to generate estimates for 2040 to match up with the long-range period of this master plan.

TABLE 2A
FAA General Aviation Forecast

Demand Indicator	2019	2040*	CAGR
General Aviation Fleet			
Total GA Fleet	213,375	212,065	-0.03%
Total Fixed Wing Piston	142,295	116,266	-0.96%
Total Fixed Wing Turbine	24,895	36,519	1.84%
Total Helicopters	10,895	15,429	1.67%
Total Other (experimental, light sport, etc.)	35,290	43,851	1.04%
General Aviation Operations			
Total GA Operations	26,895,650	28,625,434	0.30%
Local	12,672,345	13,571,495	0.33%
Itinerant	14,223,305	15,053,939	0.27%

* 2040 data was extrapolated since FAA forecasts only go through 2039.
CAGR: compound annual growth rate (2019-2040)
Source: FAA Aerospace Forecast - Fiscal Years 2019-2039

General Aviation Aircraft Fleet Mix

For 2019, the FAA estimated there were 142,295 piston-powered aircraft in the national fleet. The total number of piston-powered aircraft in the fleet is forecast to decline by 0.96 percent from 2019-2040, resulting in 116,266 by 2040. This includes a decline of 1.0 percent annually for single engine pistons and 0.4 percent for multi-engine pistons.

Total turbine aircraft are forecast to grow at an annual growth rate of 1.8 percent through 2040. The FAA estimates there were 24,895 fixed-wing turbine-powered aircraft in the national fleet in 2019, and there will be 36,519 by 2040. This includes annual growth rates of 1.3 percent for turboprops and 2.2 percent for business jets.

Total helicopters are forecast to grow at an annual growth rate of 1.7 percent annually through 2040. The FAA estimates there were 10,895 helicopters in 2019, which are forecast to grow to 15,429 by 2040. This includes annual growth rates of 1.9 percent for piston helicopters and 1.6 percent for turbine helicopters.

The FAA also forecasts experimental aircraft, light sport aircraft, and others. Combined, there were 35,290 other aircraft in 2019 that are forecast to grow to 43,835 by 2040 for an annual growth rate of 1.0 percent.

While the fleet remains level, the number of general aviation operations at towered airports is projected to increase from 26.9 million in 2017 to 30.3 million in 2039 with an average increase of 0.8 percent per year as growth in turbine, rotorcraft, and experimental hours more than offset a decline in fixed-wing piston hours.

General Aviation Operations

The FAA also forecasts total operations based upon activity at control towers across the U.S. Operations are categorized as air carrier, air taxi/commuter, general aviation, and military.

General aviation operations, both local and itinerant, declined significantly as a result of the 2008-2009 recession and subsequent slow recovery. Through 2040, total general aviation operations are forecast to grow 0.30 percent annually. This includes annual growth rates of 0.33 percent for local general aviation operations and 0.27 percent for itinerant general aviation operations. Itinerant general aviation operations are expected to increase from 14.2 million in 2019 to 15.1 million in 2040. Local general aviation operations are expected to grow from 12.7 million in 2019 to 13.6 million in 2040.

Exhibit 2A presents the historical and forecast U.S. active general aviation aircraft and operations.

General Aviation Aircraft Shipments and Revenue

The 2008-2009 economic recession had a negative impact on general aviation aircraft production, and the industry has been slow to recover. Aircraft manufacturing declined for three straight years from 2008 through 2010. According to the General Aviation Manufacturers Association (GAMA), there is optimism that aircraft manufacturing will stabilize and return to growth, which has been shown since 2011. **Table 2B** presents historical data related to general aviation aircraft shipments.

TABLE 2B
Annual General Aviation Airplane Shipments
Manufactured Worldwide and Factory Net Billings

Year	Total	SEP	MEP	TP	J	Net Billings ($millions)
2009	2,283	893	70	446	874	19,474
2010	2,024	781	108	368	767	19,715
2011	2,120	761	137	526	696	19,042
2012	2,164	817	91	584	672	18,895
2013	2,353	908	122	645	678	23,450
2014	2,454	986	143	603	722	24,499
2015	2,331	946	110	557	718	24,129
2016	2,267	890	129	582	666	20,432
2017	2,325	936	149	563	677	20,201
2018	2,443	954	185	601	703	20,564

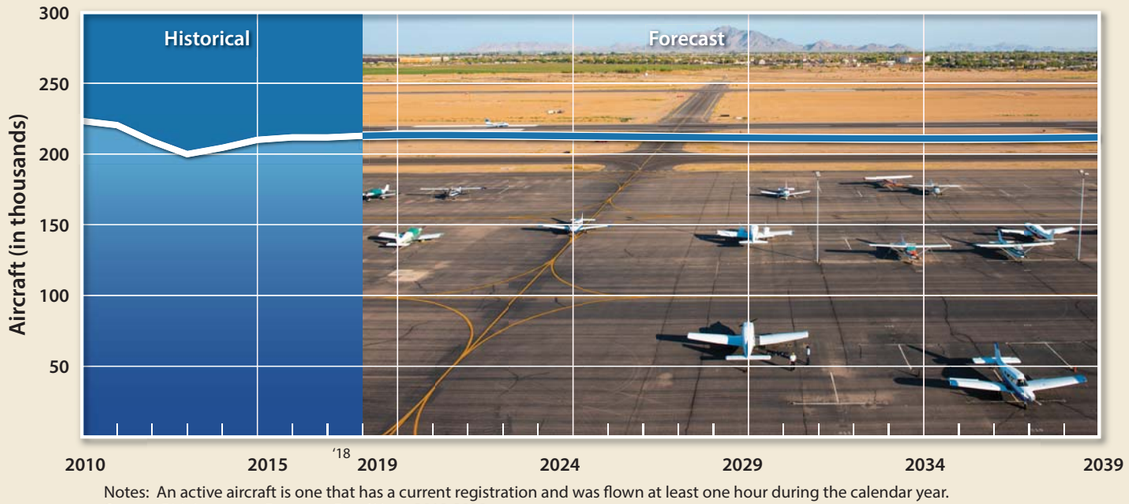
SEP - Single Engine Piston; MEP - Multi-Engine Piston; TP - Turboprop; J - Turbofan/Turbojet
Source: General Aviation Manufacturers Association *2018 Annual Report*

Worldwide shipments of general aviation airplanes increased in 2018 with a total of 2,443 units delivered around the globe compared to 2,325 units in 2017. Worldwide general aviation billings also increased. In 2018, $20.5 billion in new general aviation aircraft were shipped compared to $20.20 billion in 2017.

Business Jets: General aviation manufacturers delivered 703 business jets in 2018, as compared to 677 units in 2017. The industry's continued investment in new products helped maintain the delivery rate for business jets. Nearly two-thirds of business jet shipments were to North American customers in 2018.

U.S. ACTIVE GENERAL AVIATION AIRCRAFT

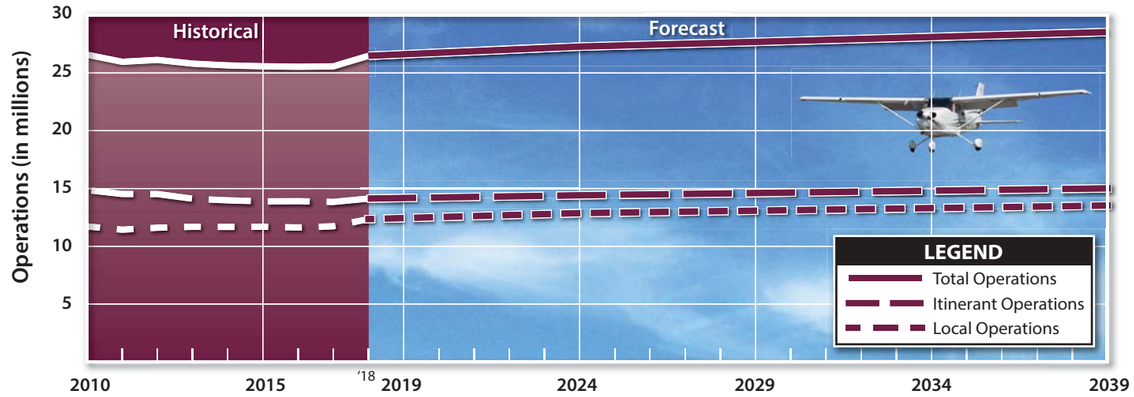
	2018E	2024	2029	2039	AAGR 2019-2039
Fixed Wing					
Piston					
Single Engine	129,885	123,145	116,360	105,195	-1.0%
Multi-Engine	13,040	12,805	12,575	12,085	-0.4%
Turbine					
Turboprop	9,925	10,135	10,770	12,810	1.3%
Turbojet	14,585	17,025	19,110	23,050	2.2%
Rotorcraft					
Piston	3,335	3,775	4,150	4,950	1.9%
Turbine	7,370	8,075	8,700	10,225	1.6%
Experimental					
	27,365	29,465	30,880	33,040	0.9%
Sport Aircraft					
	2,665	3,420	4,100	5,555	3.5%
Other					
	4,715	4,820	4,865	4,890	0.2%
Total Pistons	146,260	139,725	133,085	122,230	-0.9%
Total Turbines	31,880	35,235	38,580	46,085	1.8%
Total Fleet	212,885	212,665	211,510	211,800	0.0%



Notes: An active aircraft is one that has a current registration and was flown at least one hour during the calendar year.
Source: *FAA Aerospace Forecast - Fiscal Years 2019-2039*

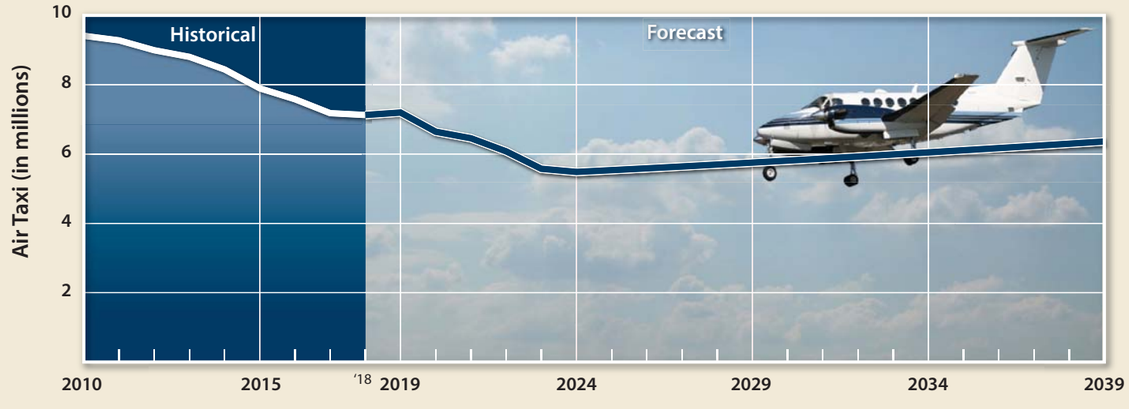
U.S. GENERAL AVIATION OPERATIONS

	2018E	2024	2029	2039	AAGR 2019-2039
Itinerant					
	14,130,000	14,412,000	14,606,000	15,012,000	0.3%
Local					
	12,354,000	12,870,000	13,081,000	13,526,000	0.3%
Total GA Operations	**26,485,000**	**27,282,000**	**27,687,000**	**28,538,000**	**0.3%**



U.S. AIR TAXI

	2018E	2024	2029	2039	AAGR 2019-2039
Air Taxi/Commuter Operations					
Itinerant	7,126,000	5,484,000	5,752,000	6,361,000	-0.6%



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Turboprops: In 2018, 601 turboprop airplanes were delivered to customers around the world, an increase from the 563 that were delivered in 2017. Overall, the turboprop market is still significantly stronger over the past five years compared to years prior to 2011. Approximately 50 percent of turboprop shipments were to North American customers.

Pistons: Single-engine piston deliveries increased slightly from 936 units during 2017 to 954 in 2018. Multi-engine piston deliveries also increased from 149 in 2017 to 185 in 2018. Approximately 62 percent of piston airplane shipments were to North American customers in 2018.

U.S. PILOT POPULATION

There were 633,317 active pilots certificated by the FAA at the end of 2018. All pilot categories, except for rotorcraft-only and recreational-only certificates, continued to increase. With the exception of student pilots and airline transport pilots (ATP), the number of active general aviation pilots is projected to decrease about 13,250 (down 0.2 percent annually) between 2018 and 2039. The ATP category is forecast to increase by 25,755 (up 0.7 percent annually). The FAA has currently suspended the student pilot forecast for the second year in a row.

RISKS TO THE FORECAST

While the FAA is confident that its forecasts for aviation demand and activity can be reached, this is dependent on several factors, including the strength of the global economy, security (including the threat of international terrorism), and oil prices. Higher oil prices could lead to further shifts in consumer spending away from aviation, dampening a recovery in air transport demand.

As stated previously, the rapid spread of the COVID-19 that began in early 2020 now presents a new risk without clear historical precedent. It is not known at this point how the virus will affect aviation in the long-term; however, impacts were felt in 2020 and have carried over into 2021. The long-term impact of COVID-19 on the aviation industry will not be understood until the full spread or intensity of the human consequences, as well as the breadth and depth of possible economic fallout, is known.

FORECASTING APPROACH

The development of aviation forecasts proceeds through both analytical and judgmental processes. A series of mathematical relationships is tested to establish statistical logic and rationale for projected growth. However, the judgment of the forecast analyst, based upon professional experience, knowledge of the aviation industry, and assessment of the local situation, is important in the final determination of the preferred forecast. The most reliable approach to estimating aviation demand is through the utilization of more than one analytical technique. Methodologies frequently considered include trend line/time-series projections, correlation/regression analysis, and market share analysis. The forecast analyst may elect to not use certain techniques depending on the reasonableness of the forecasts produced using other techniques.

Trend line/time-series projections are probably the simplest and most familiar of the forecasting techniques. By fitting growth curves to historical data, then extending them into the future, a basic trend line projection is produced. A basic assumption of this technique is that outside factors will continue to affect aviation demand in much the same manner as in the past. As broad as this assumption may be, the trend line projection does serve as a reliable benchmark for comparing other projections.

Correlation analysis provides a measure of direct relationship between two separate sets of historical data. Should there be a reasonable correlation between the data sets, further evaluation using regression analysis may be employed.

Regression analysis measures statistical relationships between dependent and independent variables, yielding a "correlation coefficient." The correlation coefficient (Pearson's "r") measures association between the changes in the dependent variable and the independent variable(s). If the "r^2" value (coefficient determination) is greater than 0.95, it indicates good predictive reliability. A value less than 0.95 may be used, but with the understanding that the predictive reliability is lower.

Market share analysis involves a historical review of the airport activity as a percentage, or share, of a larger regional, state, or national aviation market. A historical market share trend is determined, providing an expected market share for the future. These shares are then multiplied by the forecasts of the larger geographical area to produce a market share projection. This method has the same limitations as trend line projections but can provide a useful check on the validity of other forecasting techniques.

Forecasts will age the farther one is from the base year and the less reliable a forecast may become, particularly due to changing local and national conditions. Nonetheless, the FAA requires that a 20-year forecast be developed for long-range airport planning. Facility and financial planning usually require at least a ten-year view, since it often takes more than five years to complete a major facility development program. However, it is important to use forecasts which do not overestimate revenue-generating capabilities or understate demand for facilities needed to meet public (user) needs.

A wide range of factors is known to influence the aviation industry and can have significant impacts on the extent and nature of aviation activity in both the local and national markets. Historically, the nature and trend of the national economy has had a direct impact on the level of aviation activity. Recessionary periods have been closely followed by declines in aviation activity. Nonetheless, over time, trends emerge and provide the basis for airport planning.

Future facility requirements, such as hangar, apron, and terminal needs, are derived from projections of various aviation demand indicators. Using a broad spectrum of local, regional, and national socioeconomic and aviation information, and analyzing the most current aviation trends, forecasts are presented for the following aviation demand indicators:

- Based Aircraft
- Based Aircraft Fleet Mix
- General Aviation Operations
- Air Taxi and Military Operations
- Operational Peaks

EXISTING FORECASTS

Consideration is given to any forecasts of aviation demand for the airport that have been completed in the recent past. For CHD, the previous forecasts reviewed are those in the FAA *Terminal Area Forecast* (TAF) and the 2007 master plan.

FAA *TERMINAL AREA FORECAST* (TAF February 2019)

On an annual basis, the FAA publishes the TAF for each airport included in the *National Plan of Integrated Airport Systems* (NPIAS). The TAF is a generalized forecast of airport activity used by FAA for internal planning purposes primarily. It is available to airports and consultants to use as a baseline projection and important point of comparison while developing local forecasts. The TAF was published in February 2019 and is based on the federal fiscal year (October-September).

Table 2C presents the 2019 TAF for CHD. It is important to note that the TAF based aircraft count is significantly lower than the current FAA-validated count from the based aircraft registry. The TAF reflects 160 based aircraft, while the registry reflects 441 based aircraft. The total operations count used in the TAF, however, is only 346 operations less than what was reported by the CHD ATCT for 2019 (ATCT reported 220,662 operations in 2019). The FAA may choose to submit the forecasts developed for this master plan to headquarters to update the TAF.

TABLE 2C
2019 FAA Terminal Area Forecast
Chandler Municipal Airport

	2019	2025	2030	2040	CAGR 2019-2040
ANNUAL OPERATIONS					
Itinerant					
Air Carrier	0	0	0	0	--
Air Taxi	2,784	2,784	2,784	2,784	0.0%
General Aviation	68,293	68,706	69,916	72,402	0.3%
Military	213	213	213	213	0.0%
Total Itinerant	71,290	71,703	72,913	75,399	0.3%
Local					
General Aviation	148,964	151,488	153,378	157,233	0.3%
Military	62	62	62	62	0.0%
Total Local	149,026	151,550	153,440	157,295	0.3%
Total Operations	***220,316***	***223,253***	***226,353***	***232,694***	0.3%
BASED AIRCRAFT					
Based Aircraft	***160***	***193***	***224***	***301***	3.1%

Source: FAA Terminal Area Forecast (TAF), February 2019

The TAF for CHD shows total operations increasing from 220,316 annually to 232,694 by 2040 for an annual growth rate of 0.3 percent. Air taxi and military categories show a flat-line projection. CHD does not report any air carrier operations now or in the future. Based aircraft are projected in the TAF to grow at a CAGR of 3.1 percent through 2040 adding 141 new planes.

PREVIOUS FORECASTS

Forecasts of aviation activity at CHD were previously prepared within the 2007 Airport Master Plan and the 2018 *Arizona State Aviation System Plan* (SASP). **Table 2D** summarizes both forecasts of operations and based aircraft at CHD. Regarding the previous master plan, the CHD ATCT counts for 2019 report a total of 220,662 operations and the based aircraft count is at 441, which are lower than the base year of the last master plan. As has been previously noted, since the completion of the previous master plan, a national recession caused a significant reduction in aviation activity not only at CHD but across the country. As a result, the projections from the previous master plan are no longer relevant.

TABLE 2D
Previous Forecasts
Chandler Municipal Airport

Year	Itinerant Operations	Local Operations	Total Operations	Based Aircraft
2007 Airport Master Plan (2005 Base Year)				
2005	65,606	169,505	235,111	457
2010	74,939	193,661	268,600	515
2015	85,625	221,275	306,900	581
2020	97,817	252,783	350,600	656
2025	111,767	288,833	400,600	740
2018 *Arizona State Aviation System Plan* Update (2016 Base Year)				
2016	78,750	142,180	220,930	440
2021	89,880	162,290	252,170	481
2026	102,590	185,230	287,820	524
2036	133,650	241,310	374,960	619

Sources: 2007 Master Plan; 2018 Arizona State Aviation System Plan Update

The SASP projections were prepared more recently accounting for the effects of the recession. The SASP forecasted operations to grow by approximately 32,000 and based aircraft to grow by 41 by 2021. Through 2019, activity at CHD has not met these projections with operations remaining relatively static in the 220,000 range and the number of based aircraft declining from the figure reported for 2016 in the SASP. Based on recent activity trends at CHD and the time that has passed since the preparation of these previous forecasts, it is necessary to develop new forecasts utilizing the most current information available.

GENERAL AVIATION FORECASTS

General aviation encompasses all portions of civil aviation except commercial service and military operations. To determine the types and sizes of facilities that should be planned to accommodate general aviation activity at the airport, certain elements of this activity must be forecast. These indicators of general aviation demand include based aircraft, aircraft fleet mix, operations, and annual operations.

The number of based aircraft is the most basic indicator of general aviation demand. By first developing a forecast of based aircraft for the airport, other demand indicators can be projected. The process of developing forecasts of based aircraft begins with an analysis of aircraft ownership in the primary general aviation service area through a review of historical aircraft registrations. An initial forecast of county-

wide registered aircraft is developed and will be used as one data point to arrive at a based aircraft forecast for the airport.

BASED AIRCRAFT FORECAST

Forecasts of based aircraft may directly influence needed facilities and the applicable design standards. The needed facilities may include hangars, aprons, taxilanes, etc. The applicable design standards may include separation distances and object-clearing surfaces. The size and type of based aircraft are also an important consideration. The addition of numerous small aircraft may have no effect on design standards, while the addition of a few larger business jets can have a substantial impact on applicable design standards.

Because of the numerous variables known to influence aviation demand, several separate forecasts of based aircraft are developed. Each of the forecasts is then examined for reasonableness and any outliers are discarded or given less weight. The remaining forecasts collectively will create a planning envelope. A single planning forecast is then selected for use in developing facility needs for the airport. The selected forecast of based aircraft can be one of the several forecasts developed or, based on the experience and judgement of the forecaster, it can be a blend of the forecasts.

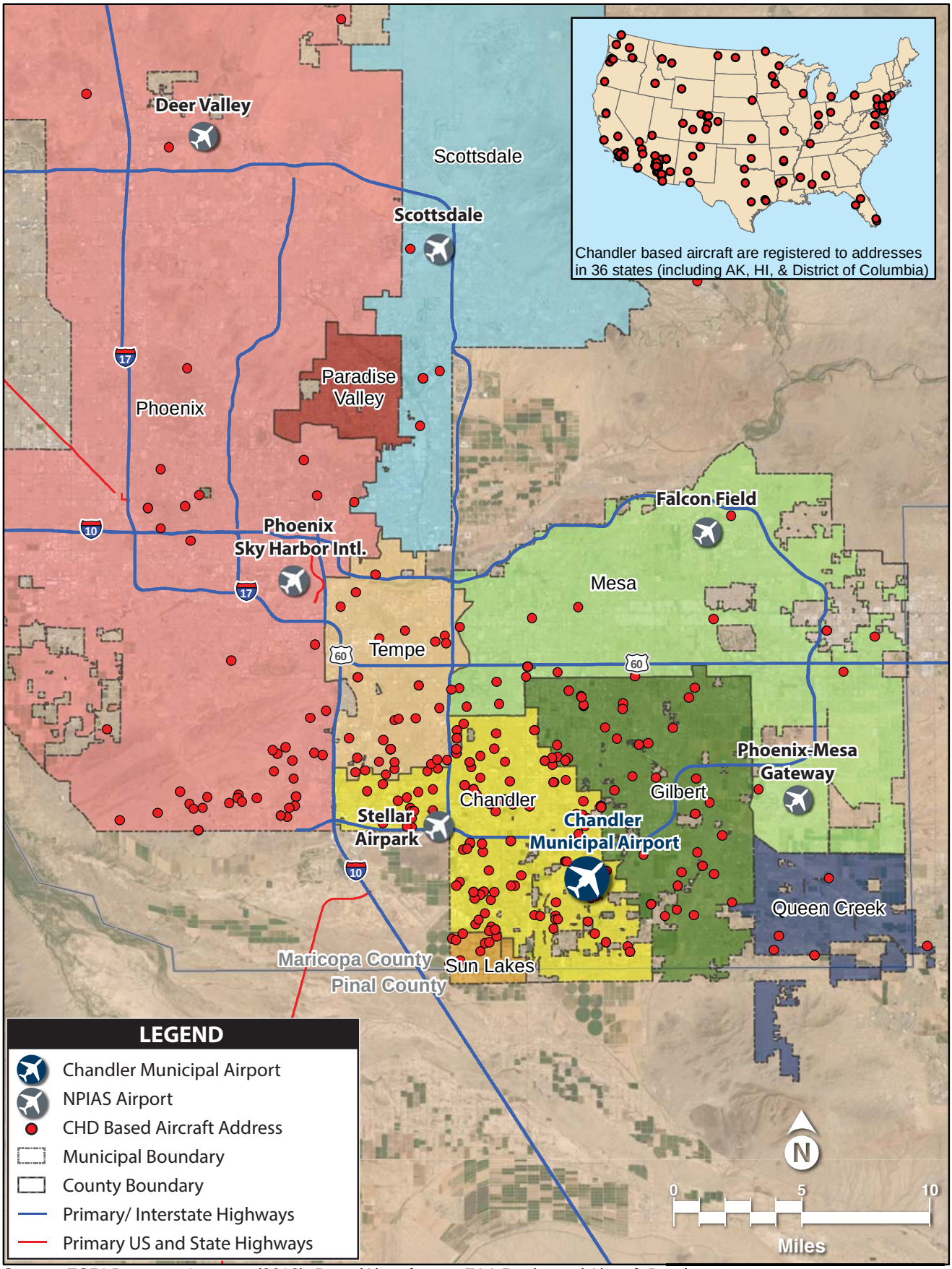
Based Aircraft Inventory

Documentation of the historical number of based aircraft at the airport has been somewhat intermittent. For many years, the FAA did not require airports to report the number of based aircraft. It is only in recent years that the FAA has established a based aircraft inventory in which it is possible to cross-reference based aircraft claimed by one airport with other airports. The FAA is now utilizing this based aircraft inventory as a baseline for determining how many and what type of aircraft are based at any individual airport. This database evolves daily as aircraft are added or removed, and it does not provide an annual history of based aircraft. It is the responsibility of the sponsor (owner) of each airport to input based aircraft information into the FAA database (www.basedaircraft.com).

Airport staff has undertaken a comprehensive physical count and submitted the count to the FAA for validation. The FAA has validated 441 based aircraft (including helicopters) at CHD. The mix of aircraft is comprised of 379 single-engine pistons, 26 multi-engine piston aircraft, six (6) multi-engine turboprops, eight (8) business jets, and 22 helicopters.

As shown on **Exhibit 2B**, based aircraft at CHD are registered to addresses spread throughout the Phoenix metropolitan area and across 36 different states throughout the country. Approximately 74 percent of based aircraft at CHD are registered to addresses in the metropolitan area. Within the communities that make up the metropolitan area, based aircraft are distributed as follows:

- Chandler – 137
- Gilbert – 48
- Phoenix – 46
- Tempe – 31



Source: ESRI Basemap Imagery (2018), BasedAircraft.com, FAA Registered Aircraft Database

- Mesa – 23
- Sun Lakes – 9
- Scottsdale – 6
- Queen Creek – 3

Despite competing with five other reliever airports[1] and five general aviation airports[2] in the region, CHD has managed to attract users from across the metropolitan area. For this reason, the Phoenix metropolitan area is considered CHD's based aircraft service area for purposes of this study.

Registered Aircraft Forecast

Aircraft ownership trends for the primary service area (Phoenix metropolitan area) typically dictate the based aircraft trends for an airport. Since aircraft registration data is only available at the county level, aircraft registration data from Maricopa County will be used to represent the service area. The metropolitan area also extends into Pinal County; however, the overwhelming majority of based aircraft are registered within Maricopa County, so Pinal County has been excluded. As such, a forecast of registered aircraft in Maricopa County is developed for use as an input to the subsequent based aircraft forecast.

In addition to the projections summarized below, several regressions were also prepared considering independent variables ranging from population, income, and employment. None of the resulting regressions produced an r^2 value of better than 0.70, which indicates poor correlation. Therefore, the regressions were not included in the discussion to follow.

Table 2E presents the history of registered aircraft in Maricopa County from 2009 through 2019. These figures are derived from the FAA aircraft registration database that categorizes registered aircraft by county based on the zip code of the registered aircraft. Although this information generally provides a correlation to based aircraft, it is not uncommon for some aircraft to be registered in the county but based at an airport outside the county or vice versa.

Over the ten-year period, aircraft registrations in Maricopa County have declined from almost 5,000 in 2009 to 3,744 in 2019, a drop of 24.9 percent. The fleet mix breakout shows that single-engine piston aircraft, while still accounting for most registered aircraft, has dropped by the largest total number of aircraft. The multi-engine piston category has dropped by the largest percentage (42.2 percent), which matches the national trend. Jet aircraft is the only category that had growth over the period, growing from 296 in 2009 to 305 in 2019. Like most areas of the country, the decline in registered aircraft since 2009 is in part attributable to two primary factors: the impact of the 2008-2009 recession and FAA's re-registration process, which took place between 2010 and 2013. Now that the actual number of registered aircraft has been identified, several projections of future registered aircraft are considered for the 20-year planning horizon.

[1] Falcon Field; Scottsdale Airport; Glendale Municipal; Phoenix Goodyear; and Phoenix Deer Valley
[2] Stellar Airpark; Memorial Airfield; Sky Ranch; Pleasant Valley Airport; and Buckeye Municipal

TABLE 2E
Registered Aircraft Fleet Mix in Maricopa County
Chandler Municipal Airport

Year	Single-Engine Piston	Multi-Engine Piston	Turboprop	Jet	Helicopter	Total
2009	3,723	438	160	296	370	4,987
2010	3,680	439	141	288	351	4,899
2011	3,608	419	130	293	353	4,803
2012	3,215	360	137	314	302	4,328
2013	2,937	337	142	337	265	4,018
2014	2,927	332	134	204	257	3,854
2015	2,949	314	130	220	242	3,855
2016	3,006	316	157	249	246	3,974
2017	3,005	302	139	261	250	3,957
2018	2,824	254	153	274	231	3,736
2019	2,831	253	139	305	216	3,744
10 year % Change	-24.0%	-42.2%	-13.1%	3.0%	-41.6%	-24.9%
Compound Annual Growth Rate from 2009 to 2019:						**-2.8%**

Source: FAA Aircraft Registry Database; FAA Census of U.S. Civil Aircraft

Trend Line/Historic Growth Rate Projection

Utilizing the last 10 years of registered aircraft data, a trendline projection was completed. This resulted in 822 registered aircraft by 2040 (-2.83% CAGR). A five-year trend projection was also prepared, which eliminates years (2010-2013) when there were fluctuations due to the FAA changing aircraft registration requirements. The five-year trendline projection results in 3,233 registered aircraft by 2040 (-0.7% CAGR).

Over the last five years, the number of registered aircraft in Maricopa County has a CAGR of -0.6 percent. By applying this CAGR to the current number of registered aircraft, a forecast emerges resulting in 3,315 by 2040.

Share of U.S. Active General Aviation Aircraft

Maricopa County's 3,744 registered aircraft in 2019 represents approximately 1.755 percent of the U.S. active general aviation fleet of aircraft. If the county maintained a constant market share, it would result in 3,721 registered aircraft by 2040 (-0.03% CAGR). Since the historic trend reflects a decreasing market share, another projection that maintains this trend was prepared, which results in registered aircraft declining to 2,718 by 2040 (-1.51% CAGR). The market share of U.S. active general aviation aircraft projections is included in **Table 2F**.

TABLE 2F
Registered Aircraft Projections – Market Share of U.S. Active GA Aircraft
Chandler Municipal Airport

Year	Registered Aircraft	U.S. Active GA Aircraft	% of U.S. Active GA Aircraft
2009	4,987	223,876	2.228%
2010	4,899	223,370	2.193%
2011	4,803	220,453	2.179%
2012	4,328	209,034	2.070%
2013	4,018	199,927	2.010%
2014	3,854	204,408	1.885%
2015	3,855	210,031	1.835%
2016	3,974	211,794	1.876%
2017	3,957	211,757	1.869%
2018	3,736	212,885	1.755%
2019	3,744	213,375	1.755%
Constant Market Share			
2025	3,728	212,435	1.755%
2030	3,709	211,355	1.755%
2040	3,721	212,065	1.755%
Decreasing Market Share			
2025	3,476	212,435	1.636%
2030	3,209	211,355	1.518%
2040	2,718	212,065	1.282%

Sources: FAA Aerospace Forecasts 2019-2039; Coffman Associates analysis

Ratio of Registered Aircraft to Population

The number of registered aircraft in an area often fluctuates based upon population trends. In 2019, Maricopa County had 0.86 registered aircraft per 1,000 residents. Over the past 10 years, this ratio has declined slightly as a result of a growing population and a decline in total registered aircraft. Two projections have been prepared based upon maintaining the current ratio constant over the forecast period and continuing the trend of a declining ratio. Maintaining the constant ratio (0.86) through 2040 results in 4,896 registered aircraft (1.29% CAGR). A decreasing ratio projection is a more likely scenario since population growth typically outpaces registered aircraft growth. This scenario results in 4,175 registered aircraft by 2040 (0.52% CAGR).

Registered Aircraft Forecast Summary

Table 2G summarizes the seven registered aircraft forecasts for Maricopa County. Five of the seven resulted in a declining CAGR, which based on recent history is not an unreasonable scenario. However, since the end of 2013, which is when the effects of the FAA's new aircraft registration requirements were most greatly felt, registrations have had as many years of increasing numbers as decreasing (three up and three down). The down years were much more drastic than the up years, but it also provides some confidence that aircraft registrations may be stabilizing with potential to grow in the future assuming population growth occurs as forecast and economic conditions continue to improve. As mentioned, it is common for population growth to outpace registered aircraft growth; therefore, for this reason, the decreasing ratio

of registered aircraft per 1,000 population will be carried forward as the selected forecast. This modestly optimistic forecast results in 3,841 registered aircraft in 2025; 3,935 in 2030, and 4,175 in 2040.

TABLE 2G
Registered Aircraft Forecast Summary
Chandler Municipal Airport

Projection Sources	2025	2030	2040	CAGR 2019-2040
5-Year Trend	3,629	3,497	3,233	-0.70%
10-Year Trend	2,768	2,119	822	-6.97%
5-Year Growth Rate	3,616	3,513	3,315	-0.58%
Constant % of U.S. Active Aircraft	3,728	3,709	3,721	-0.03%
Decreasing % of U.S. Active Aircraft	3,476	3,209	2,718	-1.51%
Constant Aircraft per 1,000 Population	4,098	4,378	4,896	1.29%
Decreasing Aircraft per 1,000 Population	**3,841**	**3,935**	**4,175**	**0.52%**

Boldface indicates selected forecast.
CAGR: Compound annual growth rate
Source: Coffman Associates analysis

Based Aircraft Market Share of Registered Aircraft Forecast

Utilizing the forecast of registered aircraft in Maricopa County, a market share forecast of based aircraft at CHD has been developed. In 2019, the 441 aircraft based at CHD represented 11.78 percent of the aircraft registered in Maricopa County. By maintaining this market share as a constant through the planning years, a forecast emerges resulting in 492 based aircraft by 2040 (0.5% CAGR). An evaluation of various historical points (2005, 2009, and 2016) indicates that CHD's market share has grown slightly over time. Therefore, an increasing market share projection was also prepared with the assumption that this historic trend would continue to the point that CHD's market share would reach 16 percent of county registrations. This increasing share projection results in 668 based aircraft by 2040 (2.0% CAGR). **Table 2H** presents the two market share projections.

TABLE 2H
Based Aircraft Market Share of Registered Aircraft Forecast
Chandler Municipal Airport

Year	CHD Based Aircraft	Maricopa County Registered Aircraft	CHD Market Share %
2005	457	4,825	9.47%
2009	378	4,987	7.58%
2016	440	3,974	11.07%
2019	441	3,744	11.78%
Constant Market Share			
2025	452	3,841	11.78%
2030	463	3,935	11.78%
2040	492	4,175	11.78%
Increasing Market Share			
2025	493	3,841	12.83%
2030	547	3,935	13.89%
2040	668	4,175	16.00%

Source: Coffman Associates analysis

Statewide TAF Growth Rate Projection

For all NPIAS airports in Arizona, the FAA projects an annual growth rate in based aircraft of 1.49 percent. Assuming CHD's based aircraft count increases at the state's TAF rate, the count would reach 602 by 2040 (1.49% CAGR).

Historic Growth Rate Projection

According to based aircraft records, CHD's count has grown in the last 10 years from 378 in 2009 to 441 in 2019, which is a CAGR of 1.56 percent. Assuming CHD maintains this growth rate over the course of the forecast period, the count grows to 610 by 2040.

Socioeconomic Growth Projections

Based aircraft growth is often related to population and economic activity of the service area. For this reason, based aircraft projections tied to projected growth in population, employment, and gross regional product (GRP) for Maricopa County were also prepared. Through 2040, population in the county is projected to increase at a CAGR of 1.29 percent; employment is projected to have a CAGR of 1.79 percent; and GRP is projected to have a CAGR of 2.68 percent. Applying these CAGRs result in 577 based aircraft for population, 640 for employment, and 769 for GRP by 2040.

Selected Based Aircraft Forecast

Selecting a based aircraft forecast is ultimately based on the judgement of the forecast analyst. A selected forecast should be reasonable and based upon a sound methodology. The methodology presented in this analysis first examines the history of aircraft ownership in Maricopa County, the primary based aircraft service area. Utilizing the selected registered aircraft projection, a market share analysis was conducted based upon maintaining a constant market share and an increasing market share over the forecast period. Additional projections considered the FAA TAF's projection for based aircraft growth in the state, maintaining CHD's 10-year growth rate, and growth rates based on key socioeconomic indicators (population, employment, and GRP). Each of these seven projections are summarized in **Table 2J**.

Another important consideration is whether an airport has a hangar waiting list, which indicates what the current demand level is for new based aircraft. CHD maintains a current waiting list for hangar space that includes 112 individuals. Waiting lists are not verified so the actual demand is likely less than the total number of names on the list; however, this number indicates strong demand for new based aircraft. The selected based aircraft forecast should account for this potential growth plus room for additional demand that is not represented on the waiting list.

As has been mentioned previously, based aircraft levels are typically tied to economic conditions and availability of hangar space. CHD will likely not see significant based aircraft growth unless new hangar facilities are constructed. CHD has ample developable property for new hangars both on the north and

south sides of the airfield so the potential for available hangar space should not be a limiting factor in future based aircraft levels. Economic conditions within the county are also projected to increase at strong rates. Therefore, the employment growth rate projection has been selected as the preferred forecast. The selected forecast is reasonably optimistic and assumes CHD can continue to gain market share of registered aircraft in the county and that continued employment growth in the local area will drive demand for more based aircraft.

Exhibit 2C graphically presents the seven based aircraft forecasts that comprise the planning envelope.

TABLE 2J
Based Aircraft Forecast Summary
Chandler Municipal Airport

Projection	2025	2030	2040	2019-2040 CAGR
10-Year Growth Rate	484	522	610	1.56%
Constant Market Share of County Registrations	452	463	492	0.52%
Increasing Market Share of County Registrations	493	547	668	2.00%
State TAF Growth Rate	482	519	602	1.49%
County Population Growth Rate	476	508	577	1.29%
County GRP Growth Rate	517	590	769	2.68%
County Employment Growth Rate	**490**	**540**	**640**	**1.79%**

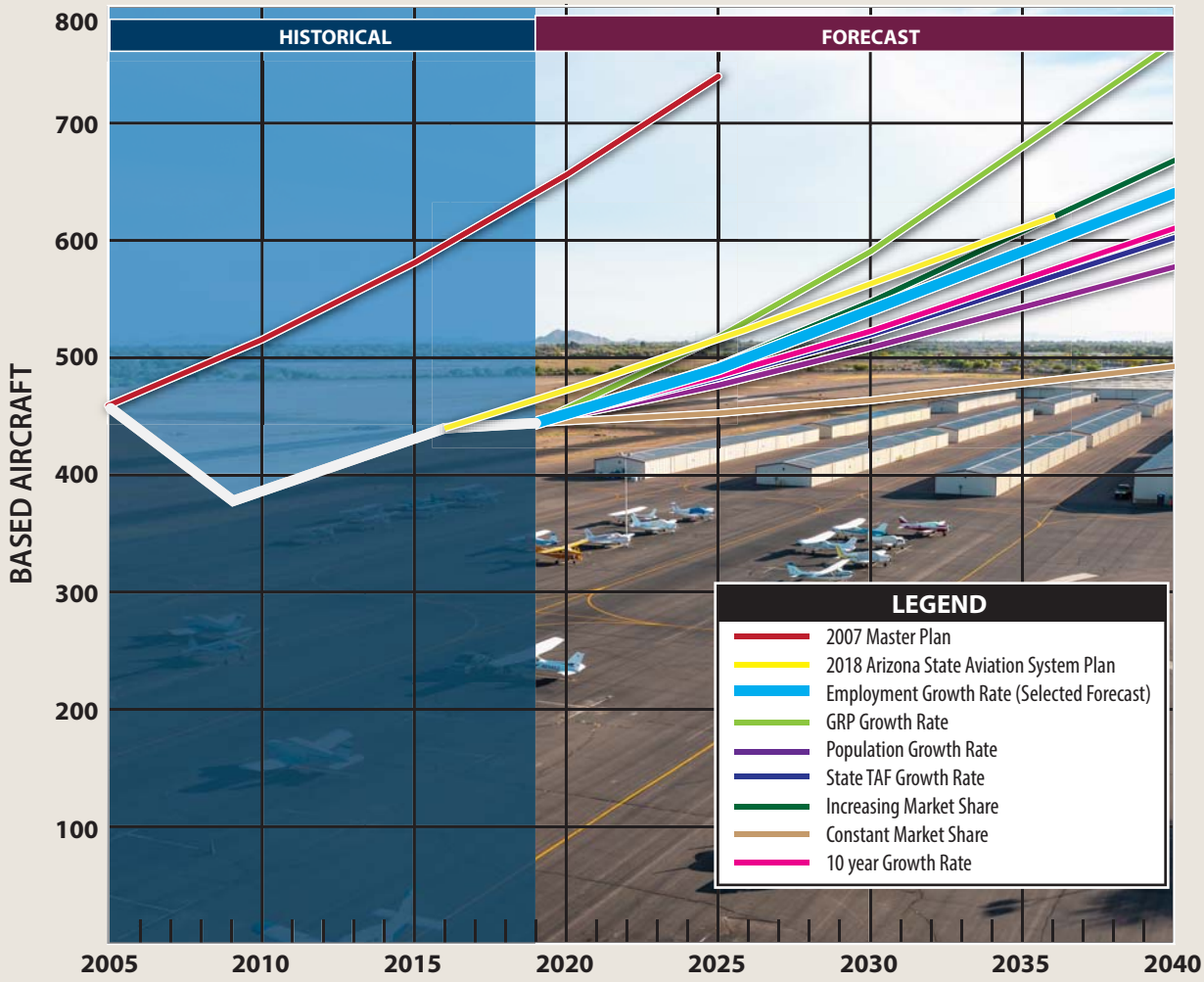
Boldface indicates selected forecast.
CAGR: Compound annual growth rate
Source: Coffman Associates analysis

BASED AIRCRAFT FLEET MIX FORECAST

It is important to understand the current and projected based aircraft fleet mix at an airport to ensure the planning of proper facilities. For example, the addition of one or several larger turboprop or business jet aircraft to the airfield can have a significant impact on the separation requirements and the various obstacle-clearing surfaces.

The current based aircraft fleet mix consists of 379 single-engine pistons, 26 multi-engine pistons, six turboprops, eight jets, and 22 helicopters. As a general aviation reliever airport with a significant level of flight training activities, CHD should continue to have a high level of piston-powered aircraft and helicopters; however, turbine aircraft are also becoming more prevalent. The forecasted growth trends in the CHD-based aircraft fleet mix are consistent with FAA projections of the national general aviation fleet mix. **Table 2K** presents the forecast fleet mix for based aircraft at CHD.

Based Aircraft



Based Aircraft Fleet Mix

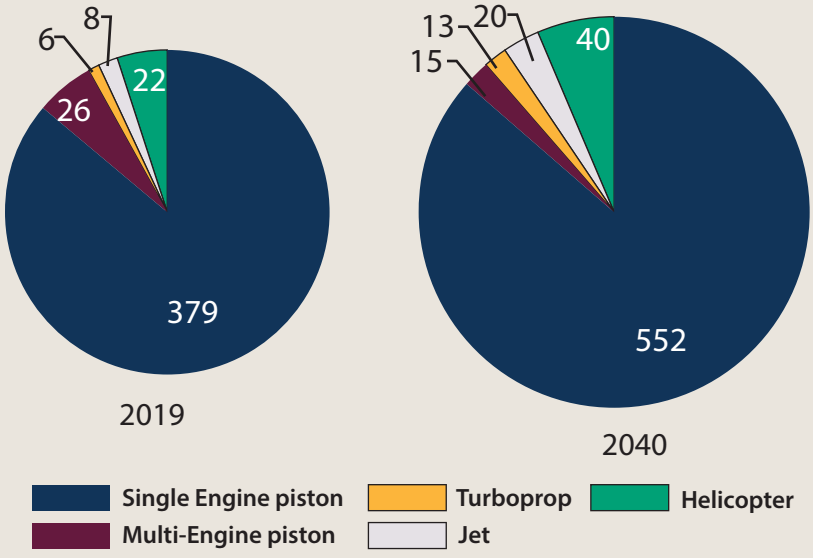


TABLE 2K
Based Aircraft Fleet Mix
Chandler Municipal Airport

Aircraft Type	2019[1]	Percent	2025	Percent	2030	Percent	2040	Percent
SEP	379	85.9%	424	86.5%	469	86.9%	552	86.3%
MEP	26	5.9%	24	4.9%	20	3.7%	15	2.3%
Turboprop	6	1.4%	7	1.4%	9	1.7%	13	2.0%
Jet	8	1.8%	10	2.0%	13	2.4%	20	3.1%
Helicopters	22	5.0%	25	5.1%	29	5.4%	40	6.3%
Total	441	100.0%	490	100.0%	540	100.0%	640	100.0%

SEP – Single-Engine Piston
MEP – Multi-Engine Piston
Sources: 2019 fleet mix - FAA Based Aircraft Registry; Projections - Coffman Associates analysis

OPERATIONS FORECAST

Operations at CHD are classified as either general aviation, air taxi, or military. General aviation operations include a wide range of activity from recreational use and flight training to business and corporate uses. Air taxi operations are those conducted by aircraft operating under FAR Part 135, otherwise known as "for-hire" or "on-demand" activity. Air taxi operations typically include commuter, air cargo, air ambulance, and many fractional ownership operations. Military operations include those operations conducted by various branches of the U.S. military.

It should be noted that the FAA's forecast of air taxi operations is lower than historic levels due to ongoing changes to the scheduled airline aircraft fleet mix. Airlines are transitioning away from 50-seat regional jets that are counted under the air taxi category to larger jets with seating capacities of 60 seats or more that are counted under the air carrier category. This airline fleet mix transition should have no impact on CHD air taxi operations.

Aircraft operations are further classified as local and itinerant. A local operation is a takeoff or landing performed by an aircraft that operates within sight of an airport, or which executes simulated approaches or touch-and-go operations at an airport. Generally, local operations are characterized by training activity. Itinerant operations are those performed by aircraft with a specific origin or destination away from an airport. Typically, itinerant operations increase with business and commercial use since business aircraft are used primarily to transport passengers from one location to another.

Several methods have been employed to develop a reasonable planning envelope. The following sections present several new operations forecasts. Counts from the CHD airport traffic control tower (ATCT) were utilized in this analysis.

Historic Growth Rate Projections

CHD's ATCT count indicate CAGRs of 0.3 percent for itinerant general aviation operations, 0.9 percent for local general aviation operations, and 3.4 percent for air taxi operations. Assuming these rates remain constant over the forecast period results in 2040 operations projections of 72,200 (itinerant general aviation), 181,900 (local general aviation), and 6,100 (air taxi).

Market Share Projections

Market share analysis compares known historical and forecast data points to arrive at a trend for the unknown variable (CHD operations). The first forecast considers the current market share of general aviation (itinerant and local) and air taxi operations at the airport as compared to the FAA national forecast for operations at towered airports. In 2019, CHD accounted for 0.476 percent of U.S. itinerant general aviation operations; 1.182 percent of U.S. local general aviation operations; and 0.042 percent of U.S. air taxi operations. By carrying these percentages forward to the plan years, a constant market share forecast emerges. **Table 2L** shows the results. The constant market share is considered a low-range projection since the historic data indicates that CHD's market share for each operational category is growing.

To carry forward historic trends, a mid-range increasing market share projection was prepared. The mid-range projection takes CHD's 2040 market share of itinerant general aviation operations to 0.580 percent, which is its 10-year high. CHD's 2040 market share of local general aviation operations is taken to 1.230 percent, which is also a 10-year high. CHD's 2040 market share of air taxi operations is taken to 0.061 percent, which reflects the increase in market share experienced between 2009 and 2019. The results of the mid-range projections are also shown on **Table 2L**.

High-range increasing market share projections were also prepared, which consider the potential for operations to exceed the peak periods and growth rates of the past ten years. The resulting projections take CHD's 2040 market shares to 0.600 percent (itinerant general aviation), 1.457 percent (local general aviation), and 0.080 percent (air taxi). The results of the high-range projections are shown on **Table 2L**.

TABLE 2L
Operations Market Share Projections
Chandler Municipal Airport

Year	General Aviation Itinerant			General Aviation Local			Air Taxi		
	CHD	U.S.	CHD Market %	CHD	U.S.	CHD Market %	CHD	U.S.	CHD Market %
2010	57,122	14,863,856	0.384%	106,197	11,716,274	0.906%	2,041	9,410,381	0.022%
2011	60,891	14,527,903	0.419%	98,068	11,437,028	0.857%	2,168	9,278,542	0.023%
2012	72,816	14,521,656	0.501%	121,951	11,608,306	1.051%	2,490	8,994,371	0.028%
2013	77,234	14,117,424	0.547%	131,231	11,688,301	1.123%	2,430	8,803,412	0.028%
2014	76,702	13,978,996	0.549%	138,887	11,675,040	1.190%	1,852	8,439,713	0.022%
2015	80,604	13,886,711	0.580%	137,425	11,691,338	1.175%	1,707	7,894,945	0.022%
2016	77,860	13,904,397	0.560%	141,586	11,632,078	1.217%	1,749	7,579,584	0.023%
2017	71,440	13,838,029	0.516%	119,204	11,731,596	1.016%	3,215	7,179,301	0.045%
2018	73,107	14,130,495	0.517%	151,972	12,354,014	1.230%	3,148	7,125,556	0.044%
2019	67,647	14,223,305	0.476%	149,754	12,672,345	1.182%	2,990	7,196,959	0.042%
Constant Market Share - Low Range									
2025	68,700	14,450,204	0.476%	152,600	12,911,636	1.182%	2,300	5,534,735	0.042%
2030	69,700	14,645,457	0.476%	155,100	13,124,605	1.182%	2,400	5,809,266	0.042%
2040	71,600	15,053,939	0.476%	160,400	13,571,495	1.182%	2,700	6,426,228	0.042%
CAGR	0.27%			0.33%			-0.48%		
Increasing Market Share - Mid Range									
2025	72,500	14,450,204	0.502%	154,100	12,911,636	1.194%	3,400	5,534,735	0.061%
2030	77,300	14,645,457	0.528%	158,300	13,124,605	1.206%	3,600	5,809,266	0.061%
2040	87,400	15,053,939	0.580%	166,900	13,571,495	1.230%	3,900	6,426,228	0.061%
CAGR	1.23%			0.52%			1.27%		
Increasing Market Share - High Range									
2025	73,200	14,450,204	0.507%	161,500	12,911,636	1.251%	3,900	5,534,735	0.070%
2030	78,800	14,645,457	0.538%	173,200	13,124,605	1.319%	4,400	5,809,266	0.075%
2040	90,300	15,053,939	0.600%	197,700	13,571,495	1.457%	5,100	6,426,228	0.080%
CAGR	1.38%			1.33%			2.58%		

CAGR – Compound Annual Growth Rate

Source: U.S. Operations – FAA Aerospace Forecasts 2019-2039 (2040 extrapolated); Historic CHD operations – CHD ATCT counts; CHD projections - Coffman Associates analysis.

Statewide TAF Growth Rate Forecast

FAA Order 5090.3C, *Field Formulation of the NPIAS,* provides a method for estimating future operations at an airport by applying the statewide TAF growth rate. While this is typically used for non-towered airports, it does provide a useful method for checking the reasonableness of other forecasts and, if determined to be the most reasonable, can be the selected forecast. For all NPIAS airports in Arizona, the FAA projects an annual growth rate of 0.16 percent for itinerant general aviation operations, 0.44 percent for local general aviation operations, and 0.57 percent for air taxi operations in the state. Applying these growth rates results in projections taking CHD's 2040 operations to 70,000 (itinerant general aviation), 164,300 (local general aviation), and 3,400 (air taxi).

Operations Forecast Summary

Table 2M summarizes each of the new projections prepared for itinerant and local general aviation operations and air taxi operations at CHD. The selected forecasts for each category represent healthy yet modest growth scenarios for CHD in which itinerant general aviation operations grow to 87,400 by 2040; local general aviation operations grow to 181,900 by 2040; and air taxi operations grow to 5,100 by 2040. **Exhibit 2D** graphically presents the operations projections that comprise the planning envelope. The FAA TAF is included for comparison.

TABLE 2M
Operations Forecast Summary
Chandler Municipal Airport

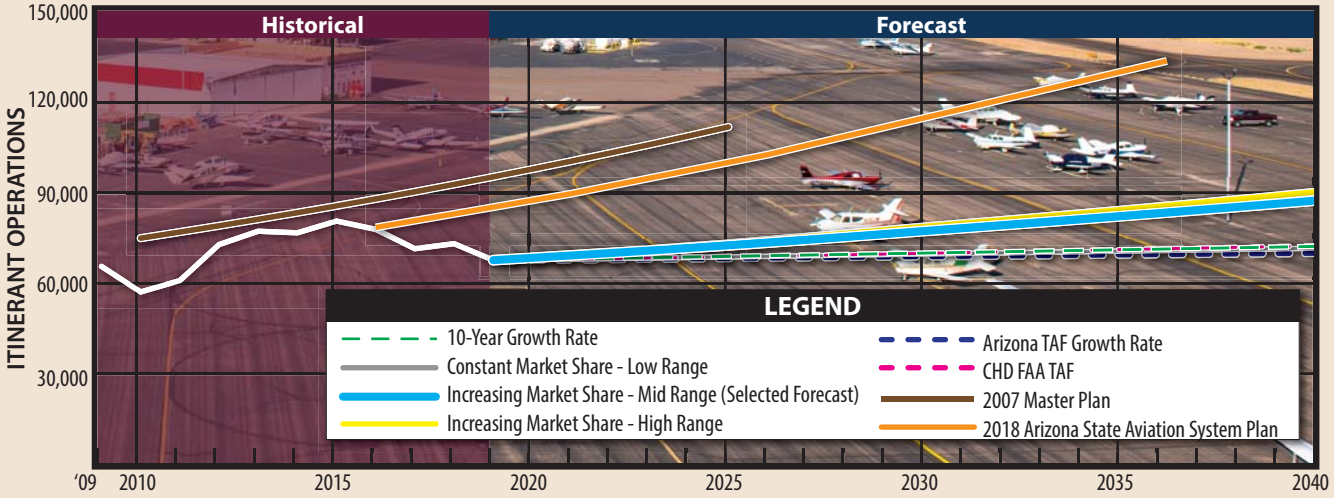
Projections	2019	2025	2030	2040	2019-2040 CAGR
Itinerant General Aviation					
10-Year Growth Rate	67,647	68,900	70,000	72,200	0.31%
Constant Market Share – Low-Range		68,700	69,700	71,600	0.27%
Increasing Market Share – Mid-Range		**72,500**	**77,300**	**87,400**	**1.23%**
Increasing Market Share – High-Range		73,200	78,800	90,300	1.38%
Arizona 2019 TAF Growth Rate		68,300	68,900	70,000	0.16%
CHD 2019 TAF		68,706	69,916	72,402	0.32%
Local General Aviation					
10-Year Growth Rate	149,754	**158,300**	**165,800**	**181,900**	**0.93%**
Constant Market Share – Low-Range		152,600	155,100	160,400	0.33%
Increasing Market Share – Mid-Range		154,100	158,300	166,900	0.52%
Increasing Market Share – High-Range		161,500	173,200	197,700	1.33%
Arizona 2019 TAF Growth Rate		153,800	157,200	164,300	0.44%
CHD 2019 TAF		151,488	153,378	157,233	0.23%
Air Taxi					
10-Year Growth Rate	2,990	3,700	4,300	6,100	3.45%
Constant Market Share – Low-Range		2,300	2,400	2,700	-0.48%
Increasing Market Share – Mid-Range		3,400	3,600	3,900	1.27%
Increasing Market Share – High-Range		**3,900**	**4,400**	**5,100**	**2.58%**
Arizona 2019 TAF Growth Rate		3,100	3,200	3,400	0.61%
CHD 2019 TAF		2,784	2,784	2,784	-0.34%

Boldface indicates selected forecast
CAGR – Compound Annual Growth Rate
Source: Coffman Associates Analysis

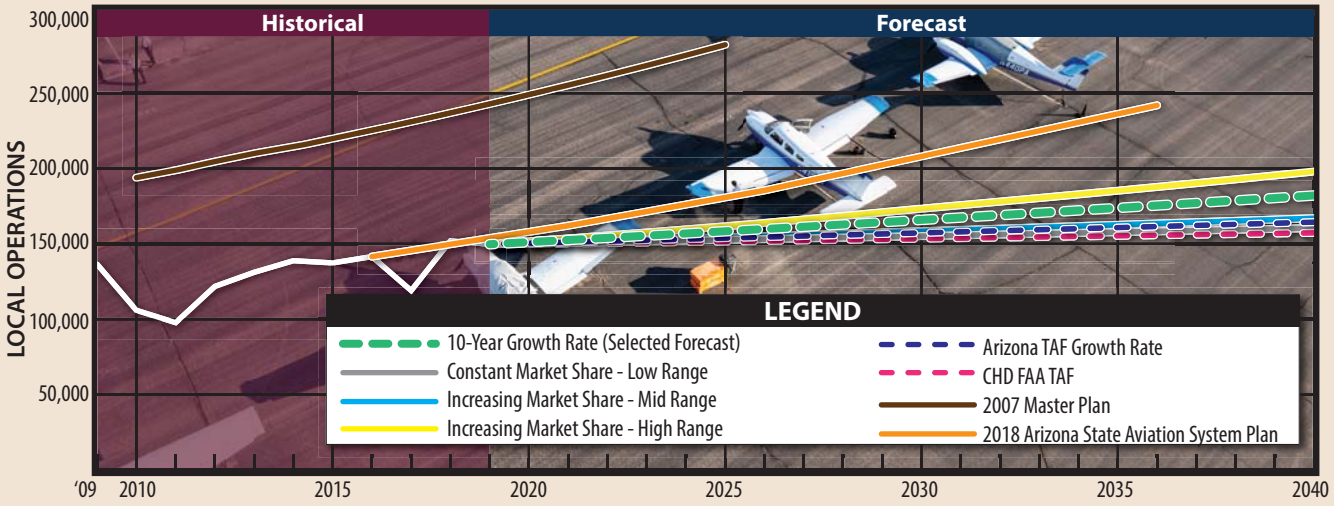
Military Operations Forecast

Military aircraft can and do utilize civilian airports across the country. CHD does, on occasion, have activity by military aircraft. Forecasts of military activity are inherently difficult to predict because of the national security nature of their operations and the fact that their missions can change without notice. Thus, it is typical for the FAA to use a flat-line forecast for military operations. For CHD, the FAA TAF projects itinerant military and local military operations to remain static at 213 and 62, respectively, over the forecast period. These TAF estimates are also utilized for the master plan forecast.

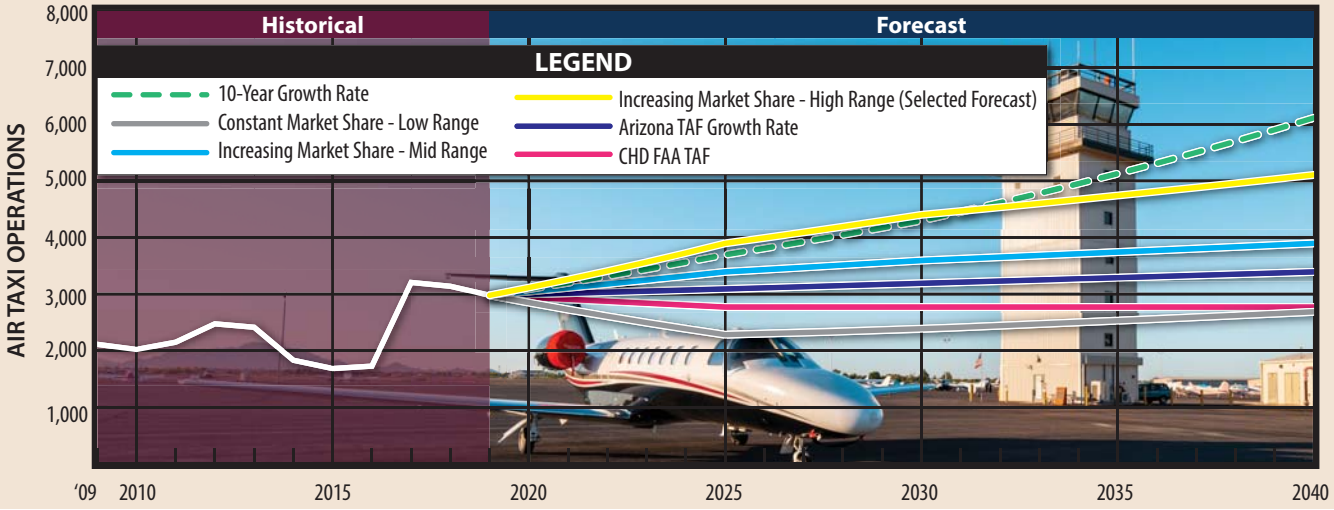
GENERAL AVIATION ITINERANT OPERATIONS FORECASTS



GENERAL AVIATION LOCAL OPERATIONS FORECASTS



AIR TAXI OPERATIONS FORECASTS



Total Operations Forecast Summary

Table 2N presents the summary of the selected operations forecasts.

TABLE 2N
Total Operations Forecast Summary
Chandler Municipal Airport

	Itinerant					Local			
Year	Air Carrier	Air Taxi	General Aviation	Military	Total	General Aviation	Military	Total	Total Operations
2019	0	2,990	67,647	199	70,836	149,754	72	149,826	220,662
2025	0	3,900	72,500	213	76,613	158,300	62	158,362	234,975
2030	0	4,400	77,300	213	81,913	165,800	62	165,862	247,775
2040	0	5,100	87,400	213	92,713	181,900	62	181,962	274,675
CAGR	--	2.58%	1.23%	0.32%	1.29%	0.93%	-0.71%	0.93%	1.05%

CAGR = Compound annual growth rate

PEAKING CHARACTERISTICS

Many aspects of facility planning relate to levels of peaking activity – times when an airport is busiest. For example, the appropriate size of terminal facilities can be estimated by determining the number of people that could reasonably be expected to use the facility at a given time. The following planning definitions apply to the peak periods:

- **Peak Month** -- The calendar month when peak aircraft operations occur.
- **Design Day** -- The average day in the peak month.
- **Design Hour** -- The peak hour within the design day.

The peak month is an absolute peak within a given year. All other peak periods will be exceeded at various times during the year. The peak period forecasts represent reasonable planning standards that can be applied without overbuilding or being too restrictive.

Tower operations data provides an understanding of the peak operational periods for the airport. Over the last three years, the peak month has averaged 10.4 percent of annual operations. The design day is the peak month average divided by the number of days in the peak month. The peak months for the last three years have been a month with 31 days; thus, the peak month is divided by 31 days. The busy day during the average week of the peak month was 41 percent more than the design day. The design hour averaged 15.16 percent of design day operations. **Table 2P** summarizes the peaking operational characteristics for the airport.

TABLE 2P
Peaking Characteristics
Chandler Municipal Airport

Peak Period	2019	2023	2028	2038
Annual Operations	220,662	234,975	247,775	274,675
Peak Month	22,930	24,410	25,740	28,540
Busy Day	1,042	1,131	1,192	1,321
Design Day	740	803	846	938
Design Hour	115	125	132	146

Source: Coffman Associates analysis

FORECAST SUMMARY

This chapter has outlined the various activity levels that might reasonably be anticipated over the planning period. **Exhibit 2E** presents a summary of the aviation forecasts prepared in this chapter. The base year for these forecasts is 2019, with a 21-year planning horizon to 2040. The primary aviation demand indicators are based aircraft and operations. Based aircraft are forecast to increase from 441 in 2019 to 640 by 2040 (1.79% CAGR). Total operations are forecast to increase from 220,662 in 2019 to 274,675 by 2040 (1.05% CAGR).

Projections of aviation demand will be influenced by unforeseen factors and events in the future. Therefore, it is not reasonable to assume that future demand will follow the exact projection line, but over time, forecasts of aviation demand tend to fall within the planning envelope. The forecasts developed for this master planning effort are considered reasonable for planning purposes. The need for additional facilities will be based upon these forecasts; however, if demand does not materialize as projected, then implementation of facility construction can be slowed. Likewise, if demand exceeds these forecasts, then implementation of facility construction can be accelerated.

FORECAST COMPARISON TO THE TAF

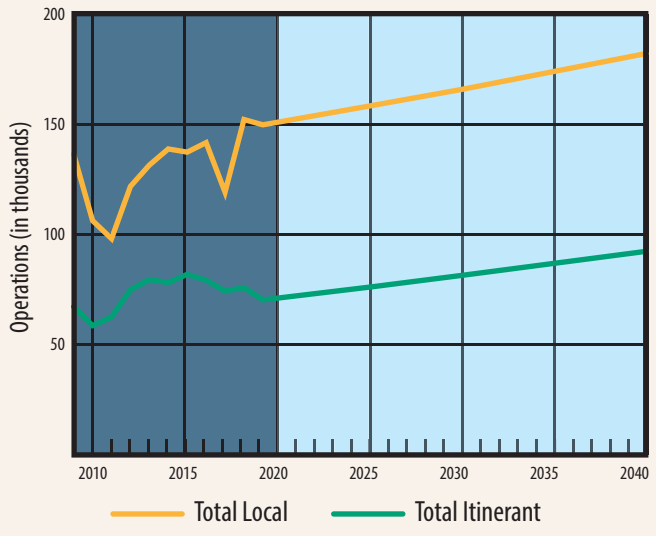
The FAA reviews the forecasts presented in this aviation planning study for comparison to the *Terminal Area Forecast*. The forecasts are considered consistent with the TAF if they meet the following criteria:

- Forecasts differ by less than 10 percent in the 5-year forecast period, and 15 percent in the 10-year forecast period, or
- Forecasts do not affect the timing or scale of an airport project, or
- Forecasts do not affect the role of the airport as defined in the current version of FAA Order 5090.3, *Field Formulation of the National Plan of Integrated Airport Systems*.

If the forecasts exceed these parameters, they may be sent to FAA headquarters in Washington, D.C. for further review. **Table 2Q** presents the direct comparison of the master planning forecasts with the TAF published in February 2019.

	2019	FORECAST 2025	2030	2040
AIRCRAFT OPERATIONS				
Itinerant				
Air Taxi	2,990	3,900	4,400	5,100
General Aviation	67,647	72,500	77,300	87,400
Military	199	213	213	213
Subtotal	***70,836***	***76,613***	***81,913***	***92,713***
Local				
General Aviation	149,754	158,300	165,800	181,900
Military	72	62	62	62
Subtotal	***149,826***	***158,362***	***165,862***	***181,962***
Total Operations	**220,662**	**234,975**	**247,775**	**274,675**
PEAKING				
Peak Month	22,930	24,410	25,740	28,540
Busy Day	1,042	1,131	1,192	1,321
Design Day	740	803	846	938
Design Hour	115	125	132	146
BASED AIRCRAFT				
Single-Engine Piston	379	424	469	552
Multi-Engine Piston	26	24	20	15
Turboprop	6	7	9	13
Jet	8	10	13	20
Helicopter	22	25	29	40
Total Based Aircraft	**441**	**490**	**540**	**640**

TOTAL OPERATIONS FORECAST



BASED AIRCRAFT FLEET MIX

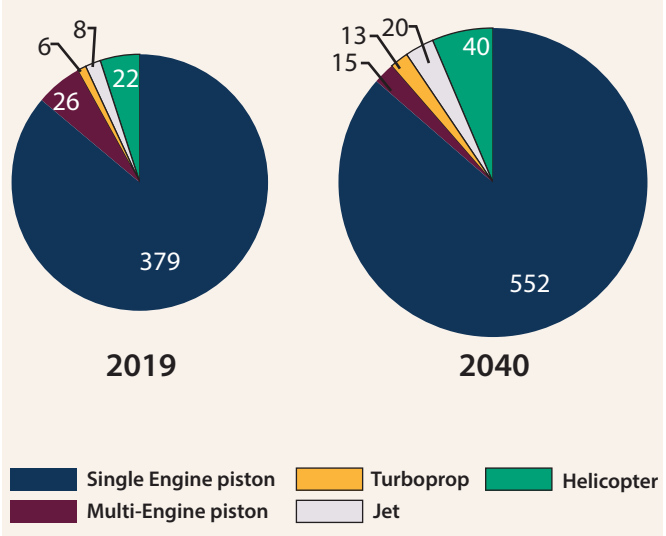


TABLE 2Q
Forecast Comparison to the *Terminal Area Forecast*
Chandler Municipal Airport

	BASE YEAR	FORECAST		
	2019	2025	2030	2040
Operations				
Master Plan Forecast	220,662	234,975	247,775	274,675
2019 FAA TAF	220,316	223,253	226,353	232,694
% Difference	0.16%	5.12%	9.04%	16.55%
Based Aircraft				
Master Plan Forecast	441	490	540	640
2019 FAA TAF	160	193	224	301
% Difference	93.51%	86.97%	82.72%	72.05%

CAGR: Average annual growth rate
TAF: *Terminal Area Forecast* (published February 2019)

Total operations are within the FAA range for consistency. The based aircraft forecasts are higher than the TAF and are not within the FAA range for consistency. The baseline for based aircraft must be consistent with what is documented in the FAA based aircraft database (www.basedaircraft.com). Currently, there are 441 validated based aircraft at the airport, thus this is the starting point for the based aircraft forecast. The FAA should update the TAF to reflect the actual number of validated based aircraft.

The forecasts are not expected to affect the timing or scale of any major airport projects, and the role of the airport as a reliever general aviation facility is not expected to change.

AIRCRAFT/AIRPORT/RUNWAY CLASSIFICATION

The FAA has established several aircraft classification systems that group aircraft types based on their performance (approach speed in landing configuration) and design characteristics (wingspan and landing gear configuration). These classification systems are used to determine the appropriate airport design standards for specific airport elements, such as runways, taxiways, taxilanes, and aprons.

AIRCRAFT CLASSIFICATION

The selection of appropriate FAA design standards for the development and location of airport facilities is based primarily upon the characteristics of the aircraft which are currently using, or are expected to use, an airport. The critical design aircraft is used to define the design parameters for an airport. The design aircraft may be a single aircraft type or a composite aircraft representing a collection of aircraft with similar characteristics. The design aircraft is classified by three parameters: Aircraft Approach Category (AAC), Airplane Design Group (ADG), and Taxiway Design Group (TDG). FAA AC 150/5300-13A, *Airport Design*, describes the following airplane classification systems, the parameters of which are presented on **Exhibit 2F.**

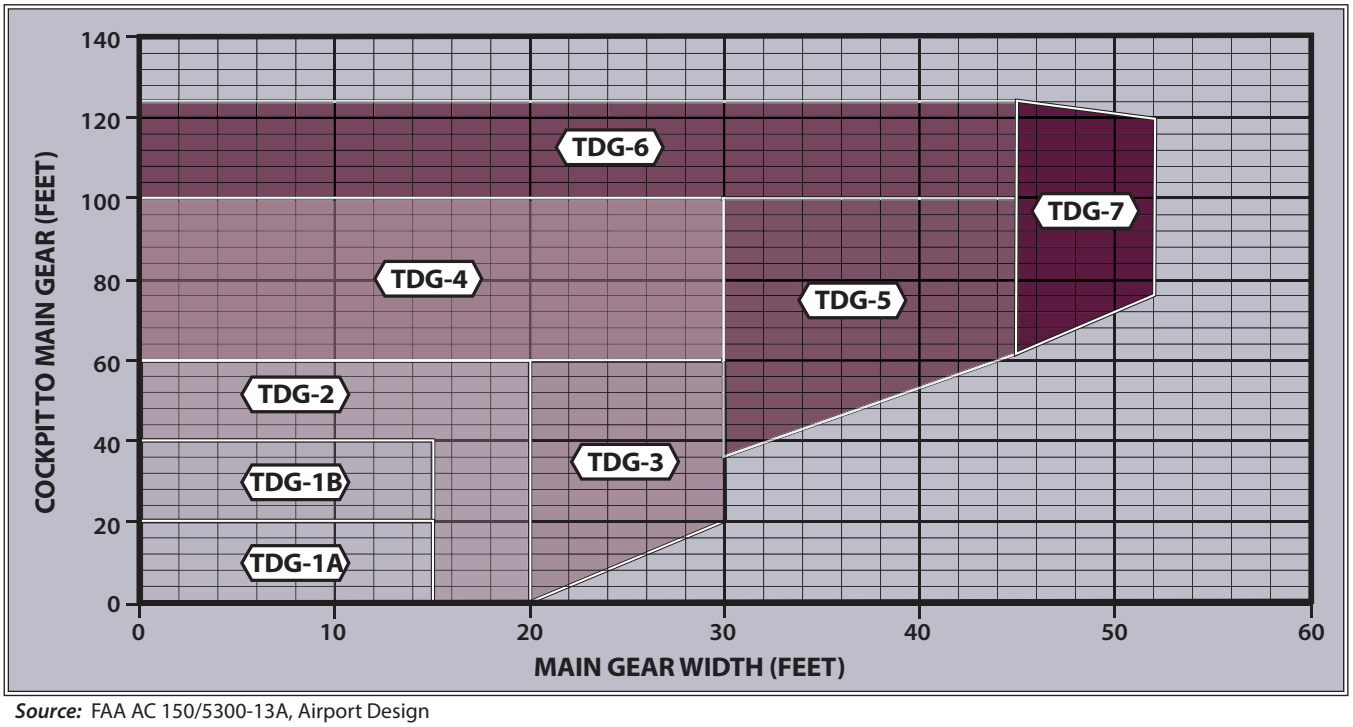
AIRCRAFT APPROACH CATEGORY (AAC)	
Category	**Approach Speed**
A	less than 91 knots
B	91 knots or more but less than 121 knots
C	121 knots or more but less than 141 knots
D	141 knots or more but less than 166 knots
E	166 knots or more

AIRPLANE DESIGN GROUP (ADG)		
Group #	**Tail Height (ft)**	**Wingspan (ft)**
I	<20	<49
II	20-<30	49-<79
III	30-<45	70-<118
IV	45-<60	118-<171
V	60-<66	171-<214
VI	66-<80	214-<262

VISIBILITY MINIMUMS	
RVR* (ft)	**Flight Visibility Category (statute miles)**
VIS	3-mile or greater visibility minimums
5,000	Not lower than 1-mile
4,000	Lower than 1-mile but not lower than ¾-mile
2,400	Lower than ¾-mile but not lower than ½-mile
1,600	Lower than ½-mile but not lower than ¼-mile
1,200	Lower than ¼-mile

***RVR**: Runway Visual Range

TAXIWAY DESIGN GROUP (TDG)



Source: FAA AC 150/5300-13A, Airport Design

A-I



Aircraft	TDG
• Beech Baron 55	1A
• **Beech Bonanza**	**1A**
• Cessna 150, 172	1A
• Eclipse 500	1A
• Piper Archer, Seneca	1A

B-I



• **Beech Baron 58**	**1A**
• Beech King Air 90	1A
• Cessna 421	1A
• Cessna Citation CJ1 (525)	1A
• Cessna Citation 1(500)	2
• Embraer Phenom 100	1B

A/B-II *12,500 lbs. or less*



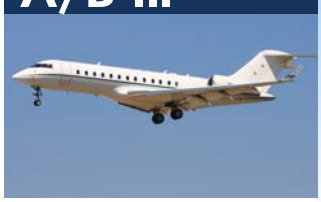
• **Beech Super King Air 200**	**2**
• Cessna 441 Conquest	1A
• Cessna Citation CJ2 (525A)	2
• Pilatus PC-12	1A

B-II *over 12,500 lbs.*



• Beech Super King Air 350	2
• Cessna Citation CJ3(525B), Bravo (550), V (560)	2
• **Cessna Citation CJ4 (525C)**	**1B**
• Cessna Citation Latitude/Longitude	1B
• Embraer Phenom 300	1B
• Falcon 10, 20, 50	1B
• Falcon 900, 2000	2
• Hawker 800, 800XP, 850XP, 4000	1B
• Pilatus PC-24	1B

A/B-III



• Bombardier Dash 8	3
• **Bombardier Global 5000**, 6000, 7000, 8000	**2**
• Falcon 6X, 7X, 8X	2

C/D-I



Aircraft	TDG
• **Lear** 25, 31, 45, 55, **60**	**1B**
• Learjet 35, 36 (D-I)	1B

C/D-II



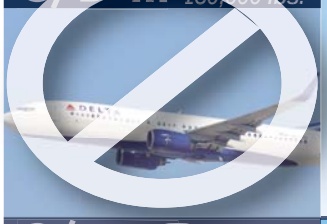
• Challenger 600/604/ 800/850	1B
• Cessna Citation VII, X+	1B
• CRJ-700	2
• Embraer Legacy 450/500	1B
• ERJ-135, 140, 145	2
• **Gulfstream IV**, 350, 450 (D-II)	2
• Gulfstream G200/G280	1B
• Lear 70, 75	1B

C/D-III *less than 150,000 lbs.*



• Boeing 737-700, BBJ	3
• CRJ-900, 1000	2
• ERJ-170, 175, 190, 195	3
• Gulfstream V	2
• **Gulfstream** G500, 550, 600, **650 (D-III)**	**2**

C/D-III *over 150,000 lbs.*



• Airbus A319-100, 200	3
• **Boeing 737 -800**, 900, BBJ2 (D-III)	**3**
• MD-83, 88 (D-III)	4

C/D-IV



• Airbus A300-100, 200, 600	5
• Boeing 757-200	4
• **Boeing 767**-300, **400**	**5**
• MD-11	6

D-V



• Airbus A330-200, 300	5
• Airbus A340-500, 600	6
• Boeing 747-100 - 400	5
• Boeing 777-300	6
• **Boeing 787-8**, 9	**5**

Note: Aircraft pictured is identified in bold type.

Aircraft Approach Category (AAC): A grouping of aircraft based on a reference landing speed (V_{REF}), if specified, or if V_{REF} is not specified, 1.3 times stall speed (V_{SO}) at the maximum certificated landing weight. V_{REF}, V_{SO}, and the maximum certificated landing weight are those values as established for the aircraft by the certification authority of the country of registry.

The AAC generally refers to the approach speed of an aircraft in landing configuration. The higher the approach speed, the more restrictive the applicable design standards. The AAC, depicted by a letter A through E, is the aircraft approach category and relates to aircraft approach speed (operational characteristics). The AAC generally applies to runways and runway-related facilities, such as runway width, runway safety area (RSA), runway object free area (ROFA), runway protection zone (RPZ), and separation standards.

Airplane Design Group (ADG): The ADG, depicted by a Roman numeral I through VI, is a classification of aircraft which relates to aircraft wingspan or tail height (physical characteristics). When the aircraft wingspan and tail height fall in different groups, the higher group is used. The ADG influences design standards for taxiway safety area (TSA), taxiway object free (TOFA), taxilane object free area, apron wingtip clearance, and various separation distances.

Taxiway Design Group (TDG): A classification of airplanes based on outer-to-outer Main Gear Width (MGW) and Cockpit to Main Gear (CMG) distance. The TDG relates to the undercarriage dimensions of the design aircraft. The TDG is classified by an alphanumeric system: 1A, 1B, 2, 3, 4, 5, 6, and 7. The taxiway design elements determined by the application of the TDG include the taxiway width, taxiway edge safety margin, taxiway shoulder width, taxiway fillet dimensions, and, in some cases, the separation distance between parallel taxiways/taxilanes. Other taxiway elements, such as the taxiway safety area (TSA), taxiway/taxilane object free area (TOFA), taxiway/taxilane separation to parallel taxiway/taxilanes or fixed or movable objects, and taxiway/taxilane wingtip clearances, are determined solely based on the wingspan (ADG) of the design aircraft utilizing those surfaces. It is appropriate for taxiways to be planned and built to different TDG standards based on expected use.

The back side of **Exhibit 2F** summarizes the classification of the most common aircraft in operation today. Generally, recreational and business piston and turboprop aircraft will fall in AAC A and B, and ADG I and II. Business jets typically fall in AAC B and C, while the larger commercial aircraft will fall in AAC C and D.

AIRPORT AND RUNWAY CLASSIFICATIONS

Airport and runway classifications, along with the aircraft classifications defined previously, are used to determine the appropriate FAA design standards to which the airfield facilities are to be designed and built.

Runway Design Code (RDC): A code signifying the design standards to which the runway is to be built. The RDC is based upon planned development and has no operational component.

The AAC, ADG, and runway visual range (RVR) are combined to form the RDC of a runway. The RDC provides the information needed to determine certain design standards that apply. The first component, depicted by a letter, is the AAC and relates to aircraft approach speed (operational characteristics). The

second component, depicted by a Roman numeral, is the ADG and relates to either the aircraft wingspan or tail height (physical characteristics), whichever is most restrictive. The third component relates to the available instrument approach visibility minimums expressed by RVR values in feet of 1,200 (⅛-mile), 1,600 (¼-mile), 2,400 (½-mile), 4,000 (¾-mile), and 5,000 (1-mile). The RVR values approximate standard visibility minimums for instrument approaches to the runways. The third component reads "VIS" for runways designed for visual approach use only.

Approach Reference Code (APRC): A code signifying the current operational capabilities of a runway and associated parallel taxiway with regard to landing operations. Like the RDC, the APRC is composed of the same three components: the AAC, ADG, and RVR. The APRC describes the current operational capabilities of a runway under particular meteorological conditions where no special operating procedures are necessary, as opposed to the RDC, which is based upon planned development with no operational component. The APRC for a runway is established based upon the minimum runway-to-taxiway centerline separation.

Departure Reference Code (DPRC): A code signifying the current operational capabilities of a runway and associated parallel taxiway with regard to takeoff operations. The DPRC represents those aircraft that can takeoff from a runway while any aircraft are present on adjacent taxiways, under particular meteorological conditions with no special operating conditions. The DPRC is similar to the APRC, but is composed of two components: AAC and ADG. A runway may have more than one DPRC depending on the parallel taxiway separation distance.

***Airport Reference Code (ARC)*:** An airport designation that signifies the airport's highest Runway Design Code (RDC), minus the third (visibility) component of the RDC. The ARC is used for planning and design only and does not limit the aircraft that may be able to operate safely at an airport. The current Airport Layout Plan (ALP) for CHD identifies the ARC as B-II.

CRITICAL DESIGN AIRCRAFT

The selection of appropriate FAA design standards for the development and location of airport facilities is based primarily upon the characteristics of the aircraft which are currently using, or are expected to use, an airport. The critical design aircraft is used to define the design parameters for an airport. The design aircraft may be a single aircraft or a composite aircraft representing a collection of aircraft classified by the three parameters: AAC, ADG, and TDG.

The first consideration is the safe operation of aircraft likely to use an airport. Any operation of an aircraft that exceeds design criteria of an airport may result in a lesser safety margin; however, it is not the usual practice to base the airport design on an aircraft that uses the airport infrequently.

The design aircraft is defined as the most demanding aircraft type, or grouping of aircraft with similar characteristics, that make regular use of the airport. Regular use is 500 annual operations, excluding touch-and-go operations. Planning for future aircraft use is of importance, since the design standards are used to plan separation distances between facilities. These future standards must be considered now to ensure that short-term development does not preclude the reasonable long-range potential needs of the airport.

According to FAA AC 150/5300-13A, *Airport Design*, "airport designs based only on existing aircraft can severely limit the ability to expand the airport to meet future requirements for larger, more demanding aircraft. Airport designs that are based on large aircraft never likely to be served by the airport are not economical." Selection of the current and future critical design aircraft must be realistic in nature and supported by current data and realistic projections.

AIRPORT DESIGN AIRCRAFT

There are three elements for classifying the airport design aircraft. The three elements are the AAC, ADG, and the TDG. The AAC and ADG are examined first, followed by the TDG.

The FAA's Traffic Flow Management System Count (TFMSC) database captures an operation when a pilot files a flight plan and/or when flights are detected by the National Airspace System, usually via radar. It includes documentation of commercial traffic (air carrier and air taxi), general aviation, and military aircraft. Due to factors, such as incomplete flight plans, limited radar coverage, and VFR operations, TFMSC data does not account for all aircraft activity at an airport by a given aircraft type. However, the TFMSC does provide an accurate reflection of IFR activity. Operators of high-performance aircraft, such as turboprops and jets, tend to file flight plans at a high rate. **Exhibit 2G** presents the TFMSC operational mix at the airport for turboprops and jets since 2009. According to this data, operations at CHD within AAC B and ADG II have exceeded the 500 operations threshold each year since 2009. Operations within AAC C at CHD have grown in the past couple years; however, they are still well below the 500 annual operations threshold.

Airport Design Aircraft Summary

The current aircraft approach category is "B." The current airplane design group is "II." The most active B-II airplane at CHD is the Beechcraft King Air 200/300/350, which are TDG 2 aircraft. **Therefore, the current airport design aircraft is classified as B-II-2. The future airport design aircraft is planned to remain as B-II-2 represented by small to mid-sized business jet aircraft such as the Cessna Citation Jet CJ4 or Citation X.** As a general aviation reliever, CHD's operations portfolio is anticipated to remain within the AAC A/B and ADG I/II categories. Operations for AAC C/D and ADG III are not anticipated to exceed 500 annual operations in the future.

RUNWAY DESIGN CODE

The RDC relates to specific FAA design standards that should be met in relation to a runway. The RDC takes into consideration the AAC, ADG, and the RVR. In most cases, the critical design aircraft will also be the RDC for the primary runway.

Current RDC

Runway 4R-22L, as the primary runway, should be designed to accommodate the overall airport design aircraft, which has been identified as B-II-2. The primary runway is 4,870 feet long, 75 feet wide, and has non-precision instrument approaches with visibility minimums as low as one mile on the Runway 4R end. Based on the current activity, the applicable RDC is **B-II-5000**.

Runway 4L-22R, as the secondary runway, has been previously planned to accommodate primarily small aircraft that weigh less than 12,500 pounds. As such, the applicable RDC for the secondary runway is **B-II-VIS (small aircraft exclusive)**.

Future RDC

Since the future critical design aircraft for CHD remains within the B-II category, the future RDC for Runway 4R-22L is planned to remain as **B-II-5000**. The future RDC for Runway 4L-22R is also planned to remain as RDC B-II-VIS (small aircraft exclusive).

APPROACH AND DEPARTURE REFERENCE CODES

The approach and departure reference codes (APRC and DPRC) describe the current operational capabilities of each runway and the adjacent parallel taxiways, where no special operating procedures are necessary. Essentially, the APRC and DPRC describe the current conditions at an airport in runway classification terms when considering the parallel taxiway.

The parallel taxiway for Runway 4R-22L is located 400 feet from the runway (centerline to centerline). Runway 4R has non-precision instrument approaches with one-mile visibility minimums. The APRC for Runway 4R-22L is D/IV/5000 and D/V/5000 and its DPRC is D/IV and D/V.

Runway 4L-22R is separated from its parallel taxiway by 240 feet and has no published instrument approaches. Therefore, its APRC is B/II/VIS and its DPRC is B/II.

CRITICAL AIRCRAFT SUMMARY

Table 2R summarizes the airport and runway classification currently and in the future. The critical aircraft is now defined by those aircraft in ARC B-II and is expected to remain in this category.

ARC	Aircraft Model	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
A-I	Cirrus Vision Jet	0	0	0	0	0	0	0	0	4	8
	Eclipse 400/500	4	6	8	22	8	10	18	10	16	8
	Epic Dynasty	0	0	0	0	4	2	2	2	0	0
	Kodiak Quest	2	10	42	24	18	0	0	4	2	2
	Lancair 4	6	0	0	0	0	0	0	0	0	0
	Lancair Evolution/Legacy	6	26	18	20	38	10	4	6	4	36
	Piper Malibu/Meridian	26	28	44	72	90	96	82	136	76	66
	Socata TBM 7/850/900	106	72	76	32	28	26	30	40	126	250
	TOTAL	150	142	188	170	186	144	136	198	228	370
A-II	Cessna Caravan	2	2	4	6	4	4	10	12	14	16
	De Havilland Twin Otter	0	0	0	2	0	2	0	0	0	8
	Pilatus PC-12	36	32	40	66	80	110	50	38	100	114
	TOTAL	38	34	44	74	84	116	60	50	114	138
B-I	Beechjet 400	16	14	18	18	10	14	6	6	0	6
	Cessna 425 Corsair	48	30	24	26	20	46	68	40	34	66
	Citation CJ1	180	218	176	70	70	70	78	124	90	82
	Citation I/SP	2	12	6	22	6	6	10	10	22	8
	Citation M2	0	0	0	0	0	0	0	2	0	2
	Citation Mustang	8	4	14	86	84	82	48	18	16	4
	Falcon 10	4	0	0	0	0	0	0	2	2	2
	Honda Jet	0	0	0	0	0	0	50	28	6	14
	King Air 90/100	124	144	62	46	42	56	76	88	88	96
	Mitsubishi MU-2	22	16	12	2	4	2	0	4	6	2
	Phenom 100	4	22	4	6	18	22	16	8	6	8
	Piaggio Avanti	4	10	4	0	0	0	2	2	2	0
	Piper Cheyenne	14	12	4	0	6	4	10	0	4	2
	Premier 1	0	6	0	2	2	0	4	4	4	0
	TOTAL	426	488	324	278	262	302	368	336	280	292
B-II	Aero Commander 690	32	14	6	16	84	124	90	116	116	88
	Beech 1900	2	2	0	0	0	4	0	0	0	0
	Cessna Conquest	40	54	36	14	22	38	36	20	16	30
	Challenger 300	0	0	2	4	0	2	8	12	16	26
	Citation CJ2/CJ3/CJ4	74	66	142	166	172	160	166	174	218	188
	Citation II/SP/Latitude	4	8	22	8	24	20	36	24	32	46
	Citation Longitude	0	0	0	0	0	0	0	0	0	4
	Citation V/Sovereign	34	72	114	148	136	152	54	92	102	94
	Citation X	0	16	6	14	8	12	10	0	6	8
	Citation XLS	74	36	64	32	30	62	132	82	70	46
	Dornier 328	0	0	0	0	2	0	0	0	4	0
	Falcon 20/50	2	2	0	0	4	2	2	6	2	2
	Falcon 2000	2	0	2	0	0	0	0	0	4	0
	Falcon 900	14	2	0	8	2	0	0	2	0	0
	King Air 200/300/350	212	260	180	146	212	230	226	264	348	340
	King Air F90	2	0	2	0	0	0	0	0	0	0
	Phenom 300	0	6	4	2	10	26	36	70	62	50
	Swearingen Merlin	0	0	0	2	2	4	0	0	2	0
	TOTAL	492	538	580	560	708	836	796	862	998	922

ARC	Aircraft Model	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
B-III	Bombardier Global Express	0	0	0	0	0	0	0	0	2	0
	Grumman E-2 Hawkeye	0	0	0	0	0	0	0	0	2	0
	TOTAL	0	0	0	0	0	0	0	0	4	0
C-I	BAe HS 125 Series	2	0	0	0	0	0	0	0	0	0
	Learjet 20 Series	4	0	0	4	0	8	14	18	4	0
	Learjet 31	10	0	0	2	0	0	0	2	2	4
	Learjet 40 Series	6	22	16	2	0	6	2	98	152	250
	Learjet 60 Series	2	0	2	2	2	0	2	4	4	0
	Westwind II	0	0	0	0	0	2	0	0	2	0
	TOTAL	24	22	18	10	2	16	18	122	164	254
C-II	Challenger 600/604	0	0	0	0	2	2	2	2	2	2
	Citation III/VI	0	2	2	4	2	0	2	2	0	0
	Embraer ERJ-135/140/145	0	0	0	2	0	0	0	0	0	0
	Gulfstream 100/150	8	6	2	6	4	4	8	2	6	4
	Gulfstream 280	0	0	0	0	0	0	0	2	0	0
	Hawker 800 (Formerly Bae-125-800)	4	2	10	4	6	4	6	4	4	2
	Learjet 70 Series	0	0	0	0	0	0	0	0	0	2
	TOTAL	2	10	14	16	14	10	18	12	12	10
D-I	Learjet 35/36	4	0	0	0	4	0	6	0	0	0
	TOTAL	4	0	0	0	4	0	6	0	0	0
D-II	Gulfstream 200	2	0	0	0	0	2	0	0	0	0
	Gulfstream 450	0	0	2	0	0	0	6	2	4	0
	TOTAL	2	0	2	0	0	2	6	2	4	0

ARC CODE SUMMARY

ARC CODE	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
A-I	150	142	188	170	186	144	136	198	228	370
A-II	38	34	44	74	84	116	60	50	114	138
B-I	426	488	324	278	262	302	368	336	280	292
B-II	492	538	580	560	708	836	796	862	998	922
B-III	0	0	0	0	0	0	0	0	4	0
C-I	24	22	18	10	2	16	18	122	164	254
C-II	12	10	14	16	14	10	18	12	12	10
D-I	4	0	0	0	4	0	6	0	0	0
D-II	2	0	2	0	0	2	6	2	4	0
TOTAL	1,148	1,234	1,170	1,108	1,260	1,426	1,408	1,582	1,804	1,986

APPROACH CATEGORY SUMMARY

AC	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
A	188	176	232	244	270	260	196	248	342	508
B	918	1,026	904	838	970	1,138	1,164	1,198	1,282	1,214
C	36	32	32	26	16	26	36	134	176	264
D	6	0	2	0	4	2	12	2	4	0
TOTAL	1,148	1,234	1,170	1,108	1,260	1,426	1,408	1,582	1,804	1,986

AIRPLANE DESIGN GROUP SUMMARY

DG	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
I	604	652	530	458	454	462	528	656	672	916
II	544	582	640	650	806	964	880	926	1,128	1,070
III	0	0	0	0	0	0	0	0	4	0
TOTAL	1,148	1,234	1,170	1,108	1,260	1,426	1,408	1,582	1,804	1,986

Note: ARC- Airport Reference Code *Source: Traffic Flow Management System Counts*

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TABLE 2R
Airport and Runway Classifications
Chandler Municipal Airport

	Runway 4R-22L (existing/ultimate)	Runway 4L-22R (existing/ultimate)
Airport Reference Code (ARC)	B-II	B-II (small airplane)
Airport Design Aircraft	B-II-2	B-II-2 (small airplane)
Critical Aircraft (Typ.)	Beechcraft King Air 200/300/350 (existing) Cessna Citation Jet CJ4/Citation X (ultimate)	Beechcraft King Air C/F90
Runway Design Code (RDC)	B-II-5000	B-II-VIS (small airplane)
Approach Reference Code (APRC)	D/IV/5000 and D/V/5000	B/II/VIS
Departure Reference Code (DPRC)	D/IV and D/V	B/II

Source: FAA AC 150/5300-13A, Airport Design

SUMMARY

This chapter has outlined the various activity levels that might reasonably be anticipated over the planning period, as well as the critical design aircraft for the airport. Based aircraft are forecast to grow from 441 currently to 640 by 2040. Operations are forecast to grow from 220,662 in 2019 to 274,675 by 2040. The projected growth is driven by FAA's positive outlook for general activity nationwide, as well as positive outlooks for socioeconomic growth (population, employment, and income/GRP) in the Phoenix metropolitan area.

The critical design aircraft for the airport was determined by examining the FAA TFMSC database of flight plans. The current critical design aircraft is described as B-II-2 and is best represented by a Beechcraft King Air 200/300/350, a twin-engine turboprop typically utilized for business operations or air charters. The future design aircraft is projected to remain in the same category represented by small to mid-sized business jets such as the Cessna Citation Jet CJ4 or Citation X.

As noted previously, the forecasts of aviation demand were developed in 2019 prior to the Covid-19 pandemic and the associated economic downturn. Commercial aviation throughout the country has experienced a significant downturn; however certain segments of general aviation, specifically charters, air taxi, and fractionals have appeared to maintain pre-pandemic levels and in many cases, were showing increases as people sought alternatives to flying commercial. Prior to implementation of suggested projects identified later in this report, the forecast element may need to be re-validated. Based upon the types of aircraft using CHD throughout its history, the proposed existing and ultimate design aircraft are considered reasonable and valid for planning purposes.

The next step in the planning process is to assess the capabilities of the existing facilities to determine what upgrades may be necessary to meet future demands. The range of forecasts developed here will be taken forward in the next chapter as planning horizon activity levels that will serve as milestones or activity benchmarks in evaluating facility requirements.



Chapter Three

FACILITY REQUIREMENTS

Proper airport planning requires the translation of forecast aviation demand into the specific types and quantities of facilities that can adequately serve the identified demand. This chapter will analyze the existing capacities of Chandler Municipal Airport (CHD) facilities. The existing capacities will then be compared to the forecast activity levels prepared in Chapter Two to determine the adequacy of existing facilities, as well as to identify if deficiencies currently exist or may be expected to materialize in the future. The chapter will present the following elements:

- Planning Horizon Activity Levels
- Airfield Capacity
- Airport Physical Planning Criteria
- Airside and Landside Facility Requirements

The objective of this effort is to identify, in general terms, the adequacy of existing airport facilities, outline what new facilities may be needed, and determine when these may be needed to accommodate forecast demands. Having established these facility requirements, alternatives for providing these facilities will be evaluated to determine the most practical, cost-effective, and efficient means for implementation.

CHANDLER MUNICIPAL AIRPORT CHD

The facility requirements for CHD were evaluated using guidance contained in several Federal Aviation Administration (FAA) publications, including the following:

- Advisory Circular (AC) 150/5300-13A, *Airport Design*
- AC 150/5060-5, *Airport Capacity and Delay*
- AC 150/5325-4B (and Draft 4C), *Runway Length Requirements for Airport Design*
- Federal Aviation Regulation (FAR) Part 77, *Objects Affecting Navigable Airspace*
- FAA Order 5090.5, *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS) and the Airports Capital Improvement Plan (ACIP)*

DEMAND-BASED PLANNING HORIZONS

An updated set of aviation demand forecasts for CHD has been established and was detailed in Chapter Two. These activity forecasts include passenger enplanements, annual aircraft operations, based aircraft, aircraft fleet mix, and peaking characteristics. With this information, specific components of the airfield and landside system can be evaluated to determine their capacity to accommodate future demand.

Cost-effective, efficient, and orderly development of an airport should rely more upon actual demand at an airport than on a time-based forecast figure. In order to develop a master plan that is demand-based rather than time-based, a series of planning horizon milestones have been established that take into consideration the reasonable range of aviation demand projections. The planning horizons are the short term (years 1-5), the intermediate term (years 6-10), and the long term (years 11-20).

It is important to consider that the actual activity at the airport may be higher or lower than what the annualized forecast portrays. By planning according to activity milestones, the resultant plan can accommodate unexpected shifts or changes in the area's aviation demand by allowing airport management the flexibility to make decisions and develop facilities based upon need generated by actual demand levels. The demand-based schedule provides flexibility in development, as development schedules can be slowed or expedited according to demand at any given time over the planning period. The resultant plan provides airport officials with a financially responsible and needs-based program. **Table 3A** presents the short-, intermediate-, and long-term planning horizon milestones for each aircraft activity level forecasted in Chapter Two.

TABLE 3A
Aviation Demand Planning Horizons
Chandler Municipal Airport

	Base Year (2019)	Short Term (1-5 Years)	Intermediate Term (6-10 Years)	Long Term (11-20 Years)
BASED AIRCRAFT				
Single Engine	379	424	469	552
Multi-Engine	26	24	20	15
Turboprop	6	7	9	13
Jet	8	10	13	20
Helicopter	22	25	29	40
TOTAL BASED AIRCRAFT	441	490	540	640
ANNUAL OPERATIONS				
Itinerant				
Air Taxi	2,990	3,900	4,400	5,100
General Aviation	67,647	72,500	77,300	87,400
Military	199	213	213	213
Total Itinerant	70,836	76,613	81,913	92,713
Local				
General Aviation	149,754	158,300	165,800	181,900
Military	72	62	62	62
Total Local	149,826	158,362	165,862	181,962
TOTAL OPERATIONS	220,662	234,975	247,775	274,675

Source: Coffman Associates analysis

AIRFIELD CAPACITY

An airport's airfield capacity is expressed in terms of its annual service volume (ASV). ASV is a reasonable estimate of the maximum level of aircraft operations that can be accommodated in a year without incurring significant delay factors. As aircraft operations near or surpass the ASV, delay factors increase exponentially. The airport's ASV was examined utilizing FAA AC 150/5060-5, *Airport Capacity and Delay*.

FACTORS AFFECTING ANNUAL SERVICE VOLUME

This analysis takes into account specific factors about the airfield in order to calculate the airport's ASV. These various factors are depicted in **Exhibit 3A**. The following describes the input factors as they relate to CHD and include airfield layout, weather conditions, aircraft mix, and operations.

- **Runway Configuration –** The existing airfield configuration consists of parallel runways supported by full-length and partial-length parallel taxiways. Runway 4R-22L is 4,870 feet long and 75 feet wide. Runway 4L-22R is 4,401 feet long and 75 feet wide. The runways have a separation distance of 700 feet, which allows for simultaneous visual flight rule (VFR) operations.

AIRFIELD LAYOUT

Runway Configuration



Runway Use



Number of Exits





WEATHER CONDITIONS

VMC- Visual Meteorological Conditions



IMC- Instrument Meteorological Conditions



PVC- Poor Visibility Conditions



OPERATIONS

Arrivals



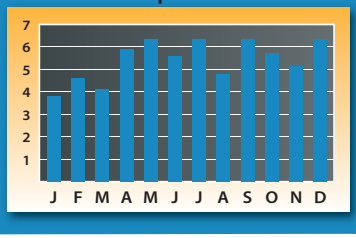
Departures



Touch-and-Go Operations



Total Annual Operations



AIRCRAFT MIX

Category A & B Aircraft


Single Engine


Small Turboprop


Twin Piston

Category C Aircraft

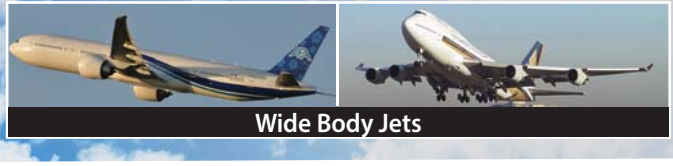

Business Jet


Regional Jet


Commuter


Commercial Jet

Category D Aircraft


Wide Body Jets

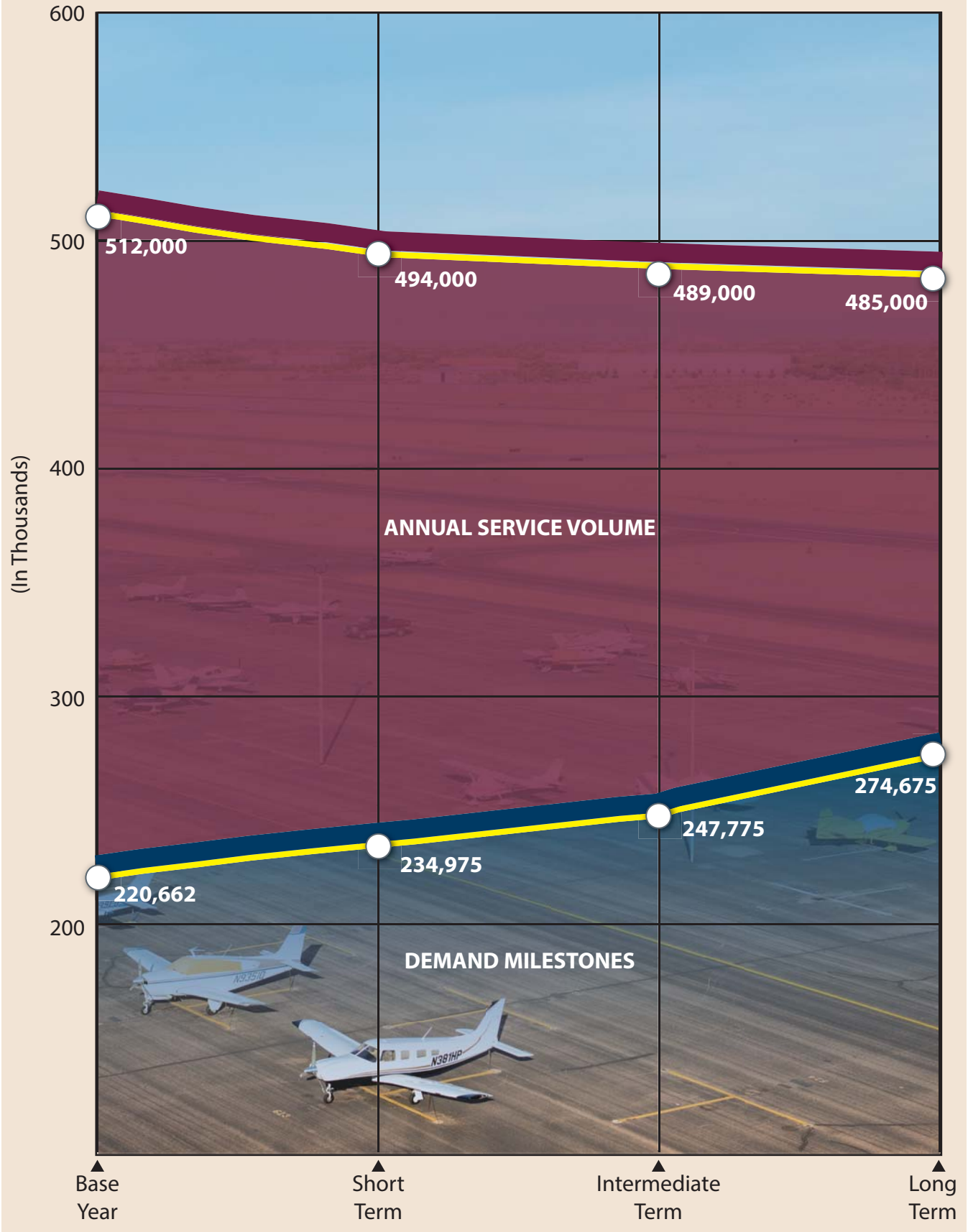


Exhibit 3A continued
AIRFIELD DEMAND VS CAPACITY

- **Runway Use –** Runway use in capacity conditions is controlled by wind and/or airspace conditions. For CHD, the direction of takeoffs and landings is typically determined by the speed and direction of the wind or as directed by the airport traffic controller. It is generally safest for aircraft to takeoff and land into the wind, avoiding a crosswind (wind that is blowing perpendicular to the travel of the aircraft) or tailwind components during these operations.

  Discussions with the CHD airport traffic control tower indicate that Runway 4R-22L is used primarily for touch-and-go activity, which positions flight training traffic patterns on the south side of the airport. Runway 4L-22R, is used more frequently for transient operations since it is closer to the FBO/SASO operations on the north side. Direction of operations is equally split between Runways 4 and 22 as dictated by wind conditions and ATCT.

- **Exit Taxiways –** Exit taxiways have a significant impact on airfield capacity since the number and location of exits directly determine the occupancy time of an aircraft on the runway. The airfield capacity analysis gives credit to taxiway exits located within the prescribed range from a runway's threshold. This range is based upon the mix index of the aircraft that use the runways. Based upon mix, only exit taxiways between 2,000 feet and 4,000 feet from the landing threshold count in the exit rating at CHD. The exits must be at least 750 feet apart to count as separate exit taxiways. Utilizing these criteria, both runways are credited with two exit taxiways in each direction.

- **Weather Conditions –** Weather conditions can have a significant impact on airfield capacity. Airport capacity is usually highest in clear weather when flight visibility is at its best. Airfield capacity is diminished as weather conditions deteriorate and cloud ceilings and visibility are reduced. As weather conditions deteriorate, the spacing of aircraft must increase to provide allowable margins of safety and air traffic vectoring. The increased distance between aircraft reduces the number of aircraft which can operate at the airport during any given period, thus reducing overall airfield capacity.

  According to local meteorological data, the airport operates under visual meteorological conditions (VMC) approximately 99 percent of the time. VMC exist whenever the cloud ceiling is greater than 1,000 feet above ground level (AGL) and visibility is greater than three statute miles. Instrument meteorological conditions (IMC) are defined when cloud ceilings are between 500 and 1,000 feet AGL or visibility is between one and three miles. Poor visibility conditions (PVC) apply for cloud ceilings below 500 feet and visibility minimums below one mile. According to the weather observations, IMC and PVC prevailed less than one percent of the time. **Table 3B** summarizes the weather conditions experienced at the airport over a 10-year period of time.

TABLE 3B
Weather Conditions
Chandler Municipal Airport

Condition	Cloud Ceiling	Visibility	Percent of Total
VMC	≥ 1,000' AGL	> 3 statute miles	99.64%
IMC	≥ 500' AGL to < 1,000' AGL	1-3 statute miles	0.25%
PVC	< 500' AGL	< 1 statute mile	0.11%

VMC- Visual Meteorological Conditions
IMC- Instrument Meteorological Conditions
PVC- Poor Visibility Conditions
AGL- Above Ground Level
Source: 50,436 All Weather Observations from Jan 1, 2010 thru Dec 31, 2019, Chandler Municipal Airport Weather Station

- **Aircraft Mix** – The aircraft mix for the capacity analysis is defined in terms of four aircraft classifications. Classes A and B consist of small- and medium-sized propeller and some jet aircraft, all weighing 12,500 pounds or less. These aircraft are associated primarily with general aviation activity, but do include some air taxi, air cargo, and commuter aircraft. Most operations at CHD are by Classes A and B aircraft. Class C consists of aircraft weighing between 12,500 pounds and 300,000 pounds. These aircraft include most business jets and some turboprop aircraft which utilize the airport on a regular basis. According to the FAA's Traffic Flow Management System Count (TFMSC) data for 2019, there were approximately 1,200 total operations by Class C aircraft at CHD, which represents approximately 0.5 percent of all operations. Over the course of the planning period it is anticipated that Class C operations will increase as these aircraft become more prevalent in the local and national fleet mix. Despite this, Class C operations are not anticipated to make up more than two percent of total operations by the long-range planning horizon. Class D aircraft consist of aircraft weighing more than 300,000 pounds. The airport does not experience operations by Class D aircraft.

- **Percent Arrivals** – The percentage of arrivals as they relate to total operations of the airport is important in determining airfield capacity. Under most circumstances, the lower the percentage of arrivals, the higher the hourly capacity. The aircraft arrival-departure percentage split is typically 50/50, which is the case at CHD.

- **Touch-and-Go Activity** – A touch-and-go operation involves an aircraft making a landing and then an immediate takeoff without coming to a full stop or exiting the runway. As previously discussed in Chapter Two, these operations are normally associated with general aviation training activity and classified as a local operation. A high percentage of touch-and-go traffic normally results in a higher operational capacity because one landing and takeoff occurs within a shorter time period than individual operations. Touch-and-go operations at CHD accounted for 68 percent of total annual operations in 2019. This percentage is anticipated to drop slightly as itinerant operations are expected to grow at a slightly faster pace; however, touch-and-go operations will still account for most operations in the future.

- **Peak Period Operations** – Average daily operations and average peak hour operations during the peak month are utilized for the airfield capacity analysis. Operations activity is important in the calculation of an airport's ASV as "peak demand" levels occur sporadically. The peak periods used in the capacity analysis are representative of normal operational activity and can be exceeded at various times throughout the year.

CALCULATION OF ANNUAL SERVICE VOLUME

The preceding information was used in conjunction with the airfield capacity methodology developed by the FAA to determine airfield capacity for CHD.

Hourly Runway Capacity

The first step in determining ASV involves the computation of the hourly capacity of the runway configuration. The percentage use of the runway, the amount of touch-and-go activity, and the number and locations of runway exits are the important factors in determining hourly capacity.

As the operational mix of aircraft at the airport changes to include a higher percentage of large aircraft weighing over 12,500 pounds, the hourly capacity of the system declines slightly. This is a result of the additional spacing and time required by larger aircraft in the traffic pattern and on the runway.

The current and future weighted hourly capacities are presented in **Table 3C**. Weighted hourly capacity is the measure of the maximum number of aircraft operations that can be accommodated on the airfield in a typical hour. It is a composite of estimated hourly capacities for different airfield operating configurations adjusted to reflect the percentage of time in an average year that the airfield operates under each specific configuration. The current weighted hourly capacity on the airfield is 267 operations; likewise, the capacity is expected to decline slightly to 258 operations by the long-term horizon.

TABLE 3C
Airfield Capacity Summary
Chandler Municipal Airport

	Base Year (2019)	Short Term (1-5 Years)	Intermediate Term (6-10 Years)	Long Term (11-20 Years)
Operational Demand				
Annual	220,662	234,975	247,775	274,675
Capacity				
Annual Service Volume	512,000	494,000	489,000	485,000
Percent Capacity	43.1%	47.6%	50.7%	56.6%
Weighted Hourly Capacity	267	263	260	258

Source: FAA AC 150/5060-5, *Airport Capacity and Delay*

Annual Service Volume

The ASV is determined by the following equation:

Annual Service Volume = C x D x H
C = weighted hourly capacity
D = ratio of annual demand to the average daily demand during the peak month
H = ratio of average daily demand to the design hour demand during the peak month

The current ASV for the airfield has been estimated at 512,000 operations. The increasing percentage of larger Class C aircraft over the planning period will attribute to a decline in ASV, lowering it to a level of approximately 485,000 operations by the end of the planning period. With 2019 operations at 220,662, the airport is currently at 43.1 percent of its ASV. Long range annual operations are forecast to reach 274,675, which would equate to 56.6 percent of the Airport's ASV.

Table 3C and the back side of **Exhibit 3A** summarize and compare the airport's ASV and projected annual operations over the short, intermediate, and long-range planning horizons.

AIRCRAFT DELAY

The affect that the anticipated ratio of demand to capacity will have on users of CHD can be measured in terms of delay. As the number of annual aircraft operations approaches the airfield's capacity, increasing operational delays begin to occur. Delays occur to arriving and departing aircraft in all weather conditions. Arriving aircraft delays result in aircraft holding outside the airport traffic pattern area. Departing aircraft delays result in aircraft holding at the runway end until they can safely takeoff.

Aircraft delay can vary depending on different operational activities at an airport. At airports where large air carrier aircraft dominate, delay can be greater given the amount of time these aircraft require in the traffic pattern and on approach to land. For airports that accommodate primarily small general aviation aircraft, such as CHD, experienced delay is typically less since these aircraft are more maneuverable and require less time in the airport traffic pattern.

Table 3D summarizes the potential aircraft delay for CHD. Estimates of delay provide insight into the impacts that steady increases in aircraft operations have on the airfield and signify the airport's ability to accommodate projected annual aircraft operations. The delay per operation represents an average delay per aircraft. It should be noted that delays of five to ten times the average could be experienced by individual aircraft during peak periods. As an airport's percent capacity increases toward the ASV, delay increases exponentially. Furthermore, complexities in the airspace system that surrounds an airport can also factor into additional delay experienced at the facility.

TABLE 3D
Airfield Delay Summary
Chandler Municipal Airport

	Base Year (2019)	Short Term (1-5 years)	Intermediate Term (6-10 years)	Long Term (11-20 years)
Percent Capacity	43.1%	47.6%	50.7%	56.6%
Delay				
Per Operation (Minutes)	0.28	0.30	0.39	0.43
Total Annual (Hours)	1,030	1,175	1,611	1,969

Source: FAA AC 150/5060-5, *Airport Capacity and Delay*

Current annual delay is estimated at 0.28 minutes per aircraft operation or 1,030 annual hours. Analysis of delay factors for the long-term planning horizon indicates that annual delays can be expected to reach 0.43 minutes per aircraft operation, or 1,969 annual hours.

CAPACITY ANALYSIS CONCLUSION

FAA Order 5090.3C, *Field Formulation of the National Plan of Integrated Airport Systems*, indicates that improvements for airfield capacity purposes should be considered when operations reach 60 to 75 percent of the ASV. This is an approximate level to begin the detailed planning of capacity improvements. When 80 percent of the ASV is reached, capacity improvement projects should become higher priority capital improvements. According to this analysis, operations levels at CHD are not anticipated to reach these percentages in the next 20 years. While no significant capacity improvements will be necessary, options to improve airfield efficiency will still be considered as part of this master plan.

AIRSIDE FACILITY REQUIREMENTS

Airside facilities include those facilities related to the arrival, departure, and ground movement of aircraft. Airside facility requirements are based primarily upon the Runway Design Code (RDC) for each runway. Analysis in Chapter Two identified the existing/ultimate RDC as RDC B-II-5000 for Runway 4R-22L and RDC B-II-VIS (small Aircraft) Runway 4L-22R.

RUNWAYS

Runway conditions, such as orientation, length, width, and pavement strength, were analyzed at CHD. From this information, requirements for runway improvements were determined for the airport.

Runway Orientation

Key considerations in the runway configuration of an airport involve the orientation for wind coverage and the operational capacity of the runway system. FAA AC 150/5300-13A, *Airport Design*, recommends that a crosswind runway should be made available when the primary runway orientation provides less than 95 percent wind coverage for any aircraft forecast to use the airport on a regular basis.

The 95 percent wind coverage is computed on the basis of the crosswind component not exceeding 10.5 knots (12 mph) for ARC A-I and B-I; 13 knots (15 mph) for ARC A-II and B-II; 16 knots (18 mph) for ARC A-III, B-III, and C-I through D-II; and 20 knots (23 mph) for ARC C-III through D-IV.

Exhibit 3B presents the all-weather wind rose for the airport. The previous 10 years of wind data[1] was obtained from the on-airport AWOS and has been analyzed to identify wind coverage provided by the existing runway orientations. At CHD, the orientation of the parallel runways (4-22) provides 94.97 percent coverage for the 10.5-knot component, 97.52 percent coverage for 13 knots, and greater than 99 percent coverage for 16- and 20-knot components. Thus, the current runway orientation at CHD provides adequate wind coverage for all-weather conditions.

Runway Length

AC 150/5325-4B, *Runway Length Requirements for Airport Design*, provides guidance for determining runway length needs. A draft revision of this AC is currently available (150/5325-4C) and the FAA is utilizing the draft revision in most cases when evaluating runway length needs for airports.

The determination of runway length requirements for the airport is based on five primary factors:

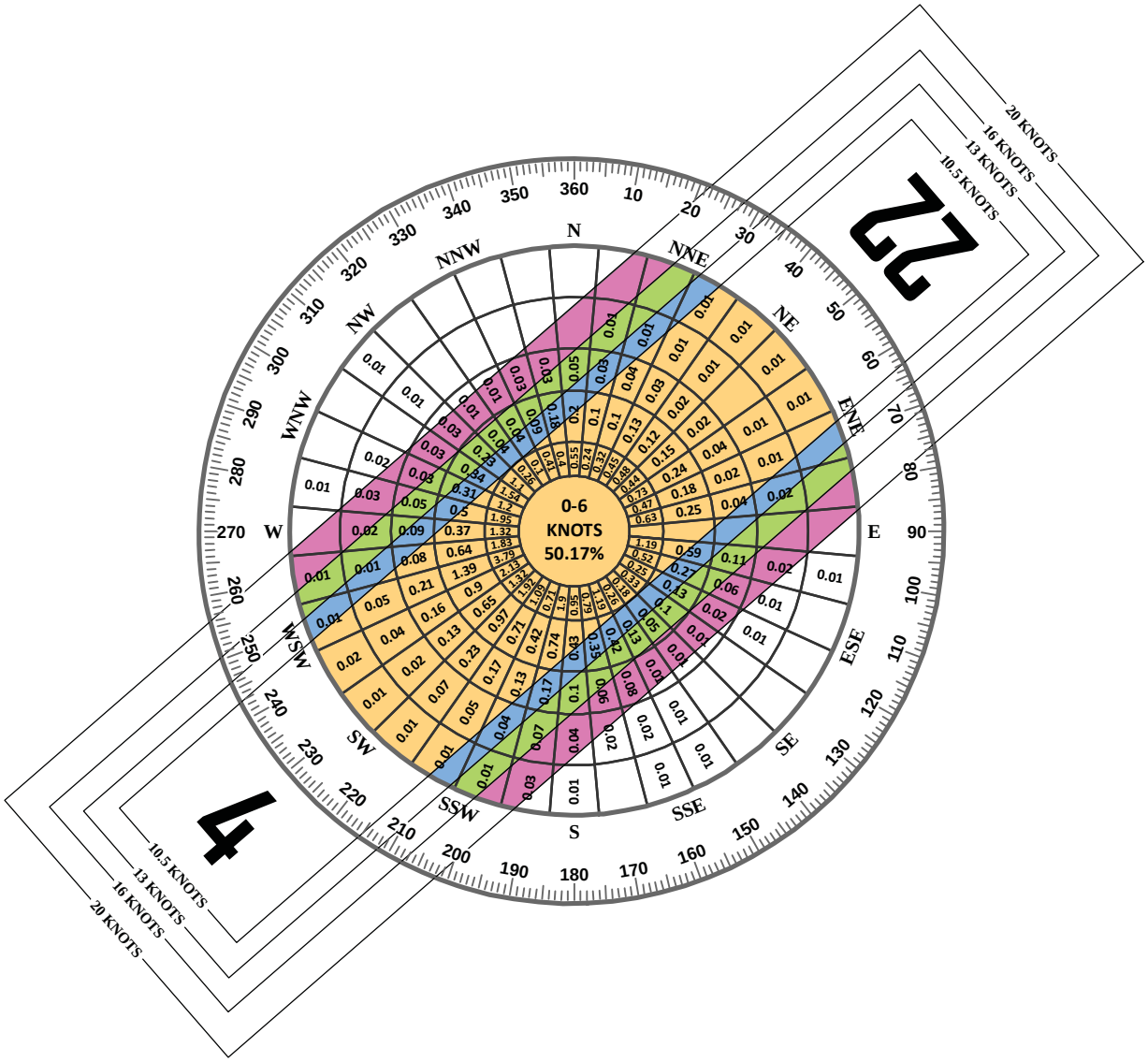
- Mean maximum temperature of hottest month
- Airport elevation
- Runway gradient
- Critical aircraft type expected to use the runway
- Stage length of the longest nonstop destination (specific to larger aircraft)

The mean maximum daily temperature of the hottest month for CHD is 106.1 degrees Fahrenheit (F), which occurs in July. The airport elevation is 1,243.1 feet mean sea level (MSL). The primary runway (4R-22L) has a gradient of 0.15 percent and secondary runway (4L-22R) has a gradient of 0.12 percent. As such, both runways conform to FAA design standards for gradient.

Airplanes operate on a wide variety of available runway lengths. Many factors will govern the sustainability of runway lengths for aircraft, such as elevation, temperature, wind, aircraft weight, wing flap settings, runway condition (wet or dry), runway gradient, vicinity airspace obstructions, and any special operating procedures. Airport operators can pursue policies that maximize the sustainability of the

[1] 50,436 observations were collected for the period January 1, 2010 through December 31, 2019.

ALL WEATHER WIND COVERAGE				
Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
Runway 4-22	94.97%	97.52%	99.21%	99.75%



Magnetic Declination
10° 02' 00" East (January 2020)
Annual Rate of Change
00° 06' 00" West (January 2020)

SOURCE:
NOAA National Climatic Center
Asheville, North Carolina
Chandler Municipal Airport
Chandler, AZ

OBSERVATIONS:
50,436 All Weather Observations
Jan. 1, 2010 - Dec, 31 2019

runway length. Policies such as area zoning and height and hazard restricting can protect an airport's runway length. Airport ownership (fee simple easement) of land leading to the runway ends reduces the possibility of natural growth or man-made obstructions. Planning of runways should include an evaluation of aircraft types expected to use the airport now and in the future. Future planning should be realistic and supported by the FAA-approved forecasts and should be based on the critical design aircraft (or family of aircraft).

General Aviation Aircraft

Most operations at CHD are conducted using smaller single engine piston-powered aircraft weighing less than 12,500 pounds. Following guidance from AC 150/ 5325-4B, to accommodate 95 percent of these small aircraft with less than 10 passenger seats, a runway length of 3,700 feet is recommended. For 100 percent of these small aircraft, a runway length of 4,400 feet is recommended. For small aircraft with 10 or more passenger seats, 4,800 feet of runway length is also recommended.

The airport is also utilized by aircraft weighing more than 12,500 pounds, including small- to medium-sized business jet aircraft. Runway length requirements for business jets weighing less than 60,000 pounds have also been calculated. These calculations take into consideration the runway gradient and landing length requirements for contaminated runways (wet). Business jets tend to need greater runway length when landing on a wet surface because of their increased approach speeds. AC 150/5325-4B stipulates that runway length determination for business jets consider a grouping of airplanes with similar operating characteristics. The AC provides two separate "family groupings of airplanes," each based upon their representative percentage of aircraft in the national fleet. The first grouping is those business jets that make up 75 percent of the national fleet, and the second group is those making up 100 percent of the national fleet. **Table 3E** presents a partial list of common aircraft in each aircraft grouping. A third group considers business jets weighing more than 60,000 pounds. Runway length determination for these aircraft must be based on the performance characteristics of the individual aircraft.

TABLE 3E
Business Jet Categories for Runway Length Determination

75 Percent of the National Fleet	MTOW (lbs.)	75-100 Percent of the National Fleet	MTOW (lbs.)	Greater than 60,000 Pounds	MTOW (lbs.)
Lear 35	20,350	Lear 55	21,500	Gulfstream II	65,500
Lear 45	20,500	Lear 60	23,500	Gulfstream IV	73,200
Cessna 550	14,100	Hawker 800XP	28,000	Gulfstream V	90,500
Cessna 560XL	20,000	Hawker 1000	31,000	Global Express	98,000
Cessna 650 (VII)	22,000	Cessna 650 (III/IV)	22,000	Gulfstream 650	99,600
IAI Westwind	23,500	Cessna 750 (X)	36,100		
Beechjet 400	15,800	Challenger 604	47,600		
Falcon 50	18,500	IAI Astra	23,500		

MTOW: Maximum Takeoff Weight
Source: FAA AC 150/5325-4B, *Runway Length Requirements for Airport Design*

Table 3F presents the results of the runway length analysis for business jets developed following the guidance provided in AC 150/5325-4B. To accommodate 75 percent of the business jet fleet at 60 percent useful load, a runway length of 5,500 feet is recommended. This length is derived from a raw length of 5,200 feet that is adjusted, as recommended, for runway gradient and consideration of landing length needs on a contaminated runway (wet and slippery). To accommodate 100 percent of the business jet fleet at 60 percent useful load, a runway length of 7,100 feet is recommended.

Utilization of the 90 percent category for runway length determination is generally not considered by the FAA unless there is a demonstrated need at an airport. This could be documented activity by a business jet operator that flies out frequently with heavy loads. To accommodate 75 percent of the business jet fleet at 90 percent useful load, a runway length of 8,300 feet is recommended. To accommodate 100 percent of business jets at 90 percent useful load, a runway length of 11,100 feet is recommended.

TABLE 3F
Runway Length Requirements
Chandler Municipal Airport

Airport Elevation	1,243.1 feet MSL
Average High Monthly Temperature	106.1 degrees F (July)
Primary Runway End Elevation Difference	7.4'

Fleet Mix Category	Raw Runway Length from FAA AC	Runway Length with Gradient Adjustment (+74')	Wet Surface Landing Length for Jets (+15%)*	Final Runway Length
75% of fleet at 60% useful load	5,200	5,274	5,500	5,500
100% of fleet at 60% useful load	7,000	7,074	5,500	7,100
75% of fleet at 90% useful load	8,200	8,274	7,000	8,300
100% of fleet at 90% useful load	11,000	11,074	7,000	11,100

*Max 5,500' for 60% useful load and max 7,000' for 90% useful load in wet condition.
Source: FAA AC 150/5325-4B, *Runway Length Requirements for Airport Design*

Another method to determine runway length requirements for aircraft at CHD is to examine aircraft flight planning manuals under conditions specific to the airport. Several aircraft were analyzed for takeoff length required with a design temperature of 106.1 degrees F at a field elevation of 1,243.1 feet MSL. **Table 3G** provides a detailed runway length analysis for several of the most common turbine aircraft in the national fleet. This data was obtained from Ultranav software, which computes operational parameters for specific aircraft based on flight manual data. The analysis includes the maximum takeoff weight (MTOW) allowable and the percent useful load from 60 percent to 100 percent. This analysis shows that the length of 4,870 feet on Runway 4R-22L presents weight restrictions for 16 of the 39 aircraft evaluated beginning at 60 percent useful load. The average takeoff length needed for all turbine aircraft analyzed at 60 percent useful load is 4,500 feet. Progressively fewer turbine aircraft can operate on the available runway at CHD as the useful load increases. Only 10 evaluated turbine aircraft can operate at 90 percent useful load and only seven can operate at 100 percent useful load. Ultimately, the average length needed in the 70 percent useful load and higher categories exceeds the available runway length at CHD.

TABLE 3G
Business Aircraft Takeoff Length Requirements
Chandler Municipal Airport

Aircraft Name	MTOW lbs.	Takeoff Length Requirements (feet)				
		Useful Load				
		60%	70%	80%	90%	100%
Pilatus PC-12	9,921	2,312	2,508	2,714	2,930	3,156
King Air C90B	10,100	2,789	3,402	3,638	3,899	4,183
Citation Ultra	16,300	3,160	3,441	3,727	4,037	4,372
Beechjet 400A	16,300	3,288	4,870	5,249	5,659	O/L
Citation CJ3	13,870	3,316	3,581	3,875	4,228	4,642
Citation Sovereign	30,300	3,430	3,676	3,942	4,232	4,578
Citation Mustang	8,645	3,508	3,944	4,433	5,174	O/L
Citation Encore	16,630	3,563	3,928	4,333	4,781	5,283
Citation (525A) CJ2	12,375	3,645	3,938	4,253	4,602	O/L
Citation II (550)	13,300	3,689	4,101	4,543	5,015	5,514
Citation V (Model 560)	15,900	3,810	3,466	3,769	4,088	4,429
King Air 200 GT	12,500	3,818	3,976	4,118	4,242	4,353
Citation Bravo	14,800	3,836	4,143	4,499	4,902	5,342
Citation 560 XLS	20,200	3,942	4,265	4,629	5,046	O/L
King Air 350	15,000	4,004	4,168	4,330	4,646	5,002
King Air 1900D	17,120	4,276	4,551	4,875	4,964	5,602
Lear 40XR	21,000	4,290	4,634	5,034	5,514	6,086
Lear 45XR	21,500	4,446	4,836	5,273	5,884	6,494
Hawker 900 XP	28,000	4,668	5,144	5,661	6,229	O/L
Hawker 4000	39,500	4,725	5,129	5,588	6,121	9,500
Gulfstream 350	70,900	4,770	5,207	5,686	6,202	6,748
Premier 1A	12,500	4,807	5,230	5,659	6,156	6,838
Gulfstream 300	72,000	4,844	5,163	5,745	6,304	6,917
Global 5000	92,500	4,894	5,443	6,020	6,626	O/L
Falcon 900EX	49,200	4,920	5,500	6,140	6,830	7,510
Falcon 7X	70,000	4,929	5,468	6,079	6,741	7,459
Challenger 300	38,850	5,070	5,552	6,053	6,586	7,210
Citation X	35,700	5,128	5,609	6,168	O/L	O/L
Gulfstream 450	74,600	5,131	5,664	6,244	6,858	7,557
Gulfstream 550	91,000	5,320	6,044	6,893	7,757	8,754
Global Express	98,000	5,346	5,991	6,671	O/L	O/L
Falcon 2000	35,800	5,361	5,826	6,298	6,998	8,398
Challenger 604/605	48,200	5,538	6,094	6,740	7,442	8,165
Gulfstream 100	24,650	5,680	6,303	6,956	7,603	O/L
Embraer 135	49,604	5,682	6,223	6,467	7,272	7,929
Lear 60	23,500	6,008	6,552	7,187	7,876	8,615
Gulfstream 200	35,450	6,157	6,902	7,728	O/L	O/L
Lear 55	21,500	6,485	7,245	8,068	O/L	O/L
Gulfstream II/IISP	65,500	6,626	7,205	O/L	O/L	O/L
Average Takeoff Length		**4,500**	**5,000**	**5,400**	**5,700**	**6,300**

Green figures are less than or equal to the length of the primary runway at CHD. Red figures are greater than the length of the primary runway at CHD. O/L indicates the input data is outside the operating limits of the aircraft planning manual. Runway length calculation assumptions: 1,243.1 MSL field elevation; 106.1° F ambient temperature; 0.15% runway grade.
MTOW - Maximum Takeoff Weight
Source: Ultranav software

Table 3H presents the runway length required for landing under three operational categories: Title 14 Code of Federal Regulations (CFR) Part 25, CFR Part 135, and CFR Part 91k. CFR Part 25 operations are those conducted by individuals or companies which own their aircraft. CFR Part 135 applies to all for-hire charter operations, including most fractional ownership operations. CFR Part 91k includes operations in fractional ownership which utilize their own aircraft under direction of pilots specifically assigned to said aircraft. Part 91k and Part 135 rules regarding landing operations require operators to land at the destination airport within 60 percent of the effective runway length. An additional rule allows for operators to land within 80 percent of the effective runway length if the operator has an approved destination airport analysis in the airport's program operating manual. The landing length analysis conducted accounts for both scenarios.

The landing length analysis shows that all but one aircraft can land on the available runway length at CHD under Part 25 or under the 80 percent rule during dry runway conditions. Only 14 of 39 aircraft evaluated can land at CHD under the 60 percent rule during dry runway conditions. Under wet runway conditions, the number of aircraft that are capable of landing at CHD is further restricted. In fact, none of the jet aircraft evaluated are capable of landing under the 60 percent rule.

Runway Length Summary

Many factors are considered when determining appropriate runway length for safe and efficient operations of aircraft at CHD. The airport should strive to accommodate business jets and turboprop aircraft to the greatest extent possible as demand would dictate. Runway 4R-22L is currently 4,870 feet long and can accommodate many of these aircraft under moderate loading conditions, especially with shorter trip lengths and during cool to warm temperatures. It is the hotter days and heavier useful loads that limit business jets at CHD.

Justification for any runway extension to meet the needs of turbine aircraft would require regular use on the order of 500 annual itinerant operations. This is the minimum threshold required to obtain FAA grant funding assistance. The current Airport Layout Plan (ALP) for CHD includes an extension to 5,550 feet for Runway 4R-22L to meet the needs of turbine aircraft operators. Analysis in the next chapter will examine potential extensions on Runway 4R-22L, while considering appropriate safety design standards (these standards will be detailed later in this chapter).

At 4,401 feet, Runway 4L-22R can accommodate all small general aviation piston-powered aircraft and some small turbine aircraft. Since the secondary runway is intended to serve primarily small aircraft, its current length is adequate and should be maintained through the planning period.

Runway Width

Runway width design standards are primarily based on the critical aircraft but can also be influenced by the visibility minimums of published instrument approach procedures. For Runway 4R-22L, existing RDC B-II-5000 design criteria stipulate a runway width of 75 feet. For Runway 4L-22R, RDC B-II-VIS (small aircraft) standards stipulate a runway width of 75 feet. Both runways are 75 feet wide and therefore meet the existing and ultimate design standards.

TABLE 3H
Business Aircraft Landing Length Requirements
Chandler Municipal Airport

Aircraft Name	MLW lbs.	Landing Length Requirements (feet)					
		Dry Runway Condition			Wet Runway Condition		
		Part 25	80% Rule	60% Rule	Part 25	80% Rule	60% Rule
King Air 200 GT	12,500	1,276	1,595	2,127	N/A	N/A	N/A
King Air C90B	9,600	1,312	1,640	2,187	N/A	N/A	N/A
Pilatus PC-12	9,921	2,451	3,064	4,085	N/A	N/A	N/A
Citation II (550)	12,700	2,567	3,209	4,278	N/A	N/A	N/A
Citation Mustang	8,000	2,637	3,296	4,395	3,706	4,633	6,177
Challenger 300	33,750	2,671	3,339	4,452	5,119	6,399	8,532
Hawker 800XP	23,350	2,726	3,408	4,543	4,247	5,309	7,078
Global 5000	78,600	2,730	3,413	4,550	3,139	3,924	5,232
Global Express	78,600	2,730	3,413	4,550	3,139	3,924	5,232
Embraer 135	40,785	2,757	3,446	4,595	3,161	3,951	5,268
Gulfstream 550	75,300	2,843	3,554	4,738	5,177	6,471	8,628
Challenger 604/605	38,000	2,871	3,589	4,785	4,554	5,693	7,590
King Air 350	15,000	2,901	3,626	4,835	N/A	N/A	N/A
Citation Sovereign	27,100	2,906	3,633	4,843	3,698	4,623	6,163
Lear 40XR	19,200	2,962	3,703	4,937	3,809	4,761	6,348
Falcon 7X	62,400	3,000	3,750	5,000	3,450	4,313	5,750
Falcon 50 EX	35,715	3,002	3,753	5,003	3,453	4,316	5,755
King Air 1900D	16,765	3,019	3,774	5,032	3,472	4,340	5,787
Citation CJ3	12,750	3,080	3,850	5,133	4,194	5,243	6,990
Citation III	19,000	3,100	3,875	5,167	4,377	5,471	7,295
Citation Encore	15,200	3,116	3,895	5,193	4,674	5,843	7,790
Citation Ultra	15,200	3,151	3,939	5,252	4,681	5,851	7,802
Citation V	15,200	3,180	3,975	5,300	4,720	5,900	7,867
Gulfstream 150	21,700	3,192	3,990	5,320	4,604	5,755	7,673
Falcon 2000	33,000	3,205	4,006	5,342	3,685	4,606	6,142
Citation (525A) CJ2	11,500	3,257	4,071	5,428	4,722	5,903	7,870
Citation VII	20,000	3,264	4,080	5,440	4,423	5,529	7,372
Hawker 4000	33,500	3,302	4,128	5,503	3,797	4,746	6,328
Gulfstream 350	66,000	3,344	4,180	5,573	3,845	4,806	6,408
Gulfstream 450	66,000	3,344	4,180	5,573	5,800	7,250	9,667
Citation 560 XLS	18,700	3,512	4,390	5,853	5,533	6,916	9,222
Premier 1A	11,600	3,531	4,414	5,885	4,538	5,673	7,563
Lear 55	18,000	3,535	4,419	5,892	5,656	7,070	9,427
Gulfstream 200	30,000	3,648	4,560	6,080	4,195	5,244	6,992
Citation Bravo	13,500	3,754	4,693	6,257	5,900	7,375	9,833
Falcon 900EX	44,500	3,763	4,704	6,272	4,328	5,410	7,213
Lear 60	19,500	3,773	4,716	6,288	5,102	6,378	8,503
Beechjet 400A	15,700	3,879	4,849	6,465	5,693	7,116	9,488
Citation X	31,800	3,925	4,906	6,542	5,603	7,004	9,338
Average Landing Length		**3,200**	**4,000**	**5,300**	**4,400**	**5,500**	**7,400**

Green figures are less than or equal to the length of the primary runway at CHD. Red figures are greater than the length of the primary runway at CHD.
Runway length calculation assumptions: 1,243' MSL field elevation; 106.1° F ambient temperature; 0.15% runway grade.
MLW – Maximum Landing Weight
N/A – Not Applicable. Turboprop aircraft landing lengths are not adjusted for wet runway conditions.
Source: Ultranav software

Pavement Strength

An important feature of airfield pavement is its ability to withstand repeated use by aircraft. The FAA reports the pavement strength for both runways at 30,000 pounds single wheel loading (SWL). SWL indicates an aircraft with a single wheel on each landing gear.

The strength rating of a runway does not preclude aircraft weighing more than the published strength rating from using the runway. All federally obligated airports must remain open to the public, and it is typically up to the pilot of the aircraft to determine if a runway can support their aircraft safely. An airport sponsor cannot restrict an aircraft from using the runway simply because its weight exceeds the published strength rating. On the other hand, the airport sponsor has an obligation to properly maintain the runway and protect the useful life of the runway, typically for 20 years.

The strength rating of a runway can change over time. Regular usage by heavier aircraft can decrease the strength rating, while periodic runway resurfacing can increase the strength rating. The current runway strength ratings are adequate to accommodate most aircraft that currently operate at the airport and are forecast to continue utilizing the airport in the future.

Runway Stopways

A runway stopway is a surface beyond the end of the runway that can support an aircraft during an aborted takeoff without causing structural damage to the aircraft. Runway 4R-22L has 90-foot long and 90-foot wide stopways off both ends of the runway. The stopways should be maintained in their current location until such time that the runway is extended.

SAFETY AREA DESIGN STANDARDS

The FAA has established several imaginary surfaces to protect aircraft operational areas and keep them free from obstructions. These include the runway safety area (RSA), runway object free area (ROFA), runway obstacle free zone (ROFZ), and runway protection zone (RPZ).

The entire RSA, ROFA, and ROFZ must be under the direct ownership of the airport sponsor to ensure these areas remain free of obstacles and can be readily accessed by maintenance and emergency personnel. RPZs should also be under airport ownership. An alternative to outright ownership of the RPZ is the purchase of avigation easements (acquiring control of designated airspace within the RPZ) or having sufficient land use control measures in place which ensure the RPZ remains free of incompatible development. The various airport safety areas are presented on **Exhibit 3C**. **Table 3J** presents the FAA design standards as they apply to each runway at CHD.

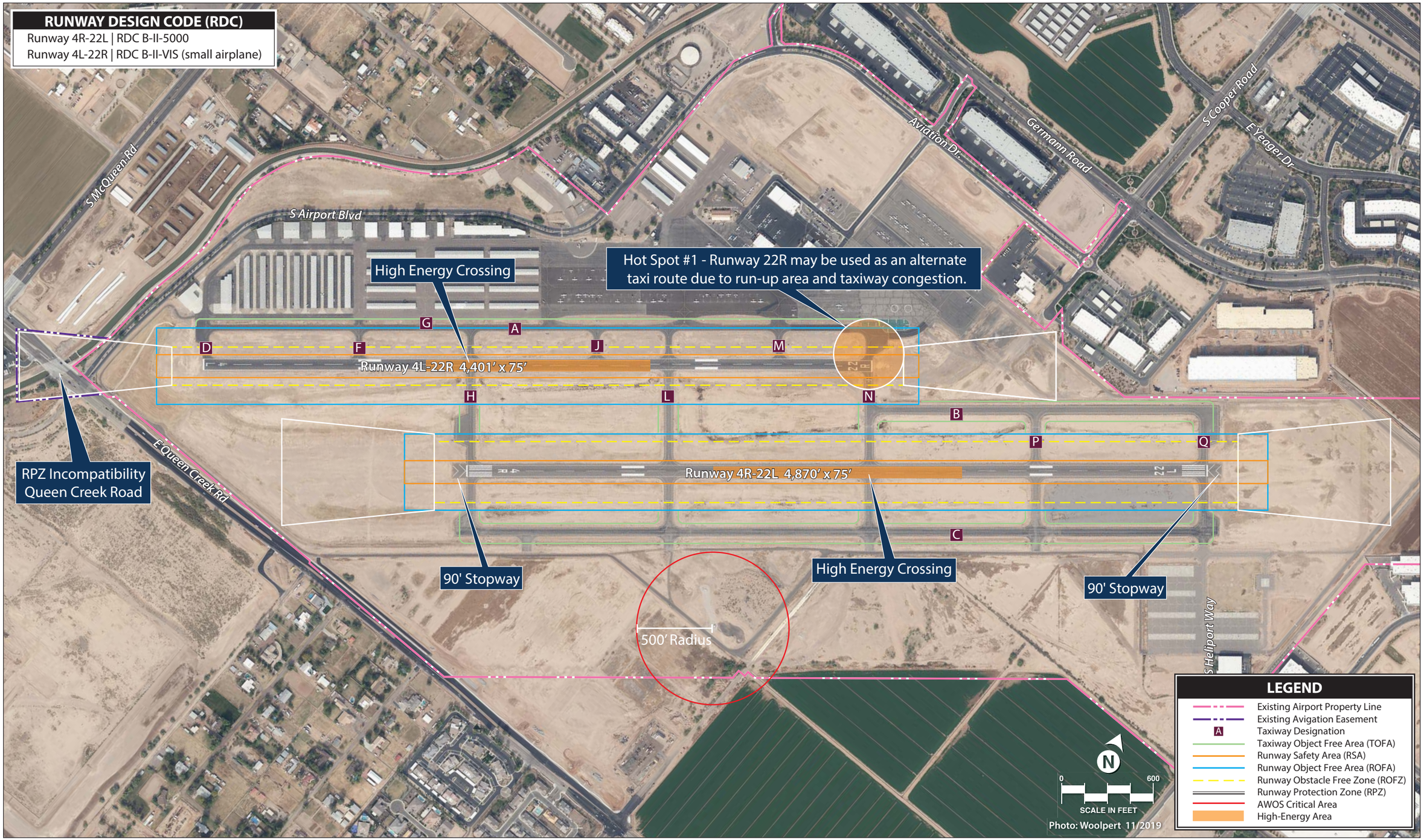

RUNWAY DESIGN CODE (RDC)
Runway 4R-22L | RDC B-II-5000
Runway 4L-22R | RDC B-II-VIS (small airplane)
S McQueen Rd
S Airport Blvd
Aviation Dr.
Germann Road
S Cooper Road
E Yeager Dr.
High Energy Crossing
Hot Spot #1 - Runway 22R may be used as an alternate taxi route due to run-up area and taxiway congestion.
G
A
D
F
J
M
Runway 4L-22R 4,401' x 75'
22R
H
L
N
B
P
Q
Runway 4R-22L 4,870' x 75'
22L
C
RPZ Incompatibility Queen Creek Road
E Queen Creek Rd
90' Stopway
High Energy Crossing
90' Stopway
500' Radius
S Heliport Way
LEGEND
Existing Airport Property Line
Existing Avigation Easement
A Taxiway Designation
Taxiway Object Free Area (TOFA)
Runway Safety Area (RSA)
Runway Object Free Area (ROFA)
Runway Obstacle Free Zone (ROFZ)
Runway Protection Zone (RPZ)
AWOS Critical Area
High-Energy Area
N
0
600
SCALE IN FEET
Photo: Woolpert 11/2019

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TABLE 3J
Runway Design Standards
Chandler Municipal Airport

	Runway 4R-22L (Existing/Ultimate)	Runway 4L-22R (Existing/Ultimate)
Runway Design Code	B-II-5000	B-II-VIS (small aircraft)
Visibility Minimums	≥ 1 mile (4R end)	Visual only (both ends)
Runway Design		
Runway Width	75	75
Stopway Length/Width	90'x90'	None
Runway Protection		
Runway Safety Area		
Width	150	150
Length Beyond Departure End	300	300
Length Prior to Threshold	300	300
Runway Object Free Area		
Width	500	500
Length Beyond Departure End	300	300
Length Prior to Threshold	300	300
Runway Obstacle Free Zone		
Width	400	250
Length Beyond Runway End	200	200
Approach Runway Protection Zone		
Inner Width	500	250
Outer Width	700	450
Length	1,000	1,000
Departure Runway Protection Zone		
Inner Width	500	250
Outer Width	700	450
Length	1,000	1,000
Runway Separation		
Runway Centerline to:		
Hold Line Position	200	125
Parallel Taxiway	240	240
Aircraft Parking Apron	250	250

Note: All dimensions in feet unless otherwise noted.
Source: FAA AC 150/5300-13A, *Airport Design*

Runway Safety Area

The RSA is defined in FAA AC 150/5300-13A, *Airport Design,* as a "surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of undershoot, overshoot, or excursion from the runway." The RSA is centered on the runway and dimensioned in accordance to the approach speed of the critical design aircraft using the runway. The FAA requires the RSA to be cleared and graded, drained by grading or storm sewers, capable of accommodating the design aircraft and fire and rescue vehicles, and free of obstacles not fixed by navigational purpose such as runway edge lights or approach lights.

The FAA has placed a higher significance on maintaining adequate RSA at all airports. Under Order 5200.8, effective October 1, 1999, the FAA established the *Runway Safety Area Program.* The Order

states, "The objective of the Runway Safety Area Program is that all RSAs at federally-obligated airports…shall conform to the standards contained in AC 150/5300-13, *Airport Design*, to the extent practicable." Each Regional Airports Division of the FAA is obligated to collect and maintain data on the RSA for each runway at the airport and perform airport inspections.

For RDC B-II-5000 and B-II-VIS (small aircraft) design standards, the FAA calls for the RSA to be 150 feet wide and extend 300 feet beyond the runway ends. An examination of the RSAs for both runways did not identify any non-standard conditions.

Runway Object Free Area

The ROFA is "a two-dimensional ground area, surrounding runways, taxiways, and taxilanes, which is clear of objects except for objects whose location is fixed by function (i.e., airfield lighting)." The ROFA does not have to be graded and level like the RSA; instead, the primary requirement for the ROFA is that no object in the ROFA penetrates the lateral elevation of the RSA. The ROFA is centered on the runway, extending out in accordance to the critical design aircraft utilizing the runway.

For RDC B-II-5000 and B-II-VIS (small aircraft) design, the FAA calls for the ROFA to be 500 feet wide, extending 300 feet beyond each runway end. An evaluation of both ROFAs did not identify any non-standard conditions.

Runway Obstacle Free Zone

The ROFZ is an imaginary surface which precludes object penetrations, including taxiing and parked aircraft. The only allowance for ROFZ obstructions is navigational aids mounted on frangible bases which are fixed in their location by function, such as airfield signs. The ROFZ is established to ensure the safety of aircraft operations. If the ROFZ is obstructed, the airport's approaches could be removed or approach minimums could be increased.

For all runways serving aircraft over 12,500 pounds, the ROFZ is 400 feet wide, centered on the runway, and extends 200 feet beyond the runway ends. This standard applies to Runway 4R-22L at CHD. For Runway 4L-22R, a smaller ROFZ applies since the runway is served by aircraft weighing 12,500 pounds or less. In this case, the ROFZ is dimensioned at 250 feet wide and extends 200 feet beyond the runway ends. Under current evaluation with available data, there are no ROFZ obstructions at the airport. Future planning should maintain the ROFZ for the appropriate runway type.

Runway Protection Zone

The RPZ is a trapezoidal area centered on the runway, beginning 200 feet beyond the runway end. The RPZ has been established by the FAA to provide an area clear of obstructions and incompatible land uses, to enhance the protection of people and property on the ground. The RPZ is comprised of the central portion of the RPZ and the controlled activity area. The central portion of the RPZ extends from the

beginning to the end of the RPZ, is centered on the runway, and is the width of the ROFA. The controlled activity area is any remaining portions of the RPZ. The dimensions of the RPZ vary per the visibility minimums serving the runway and the type of aircraft (design aircraft) operating on the runway.

While the RPZ is intended to be clear of incompatible objects or land uses, some uses are permitted with conditions and other land uses are prohibited. According to AC 150/5300-13A, the following land uses are permissible within the RPZ:

- Farming that meets the minimum buffer requirements;
- Irrigation channels, as long as they do not attract birds;
- Airport service roads, as long as they are not public roads and are directly controlled by the airport operator;
- Underground facilities, as long as they meet other design criteria, such as RSA requirements, as applicable; and
- Unstaffed navigational aids (NAVAIDs) and facilities, such as required for airport facilities that are fixed by function in regard to the RPZ.

Any other land uses considered within RPZ land owned by the airport sponsor must be evaluated and approved by the FAA Office of Airports. The FAA has published *Interim Guidance on Land Uses within a Runway Protection Zone* (September 2012), which identifies several potential land uses that must be evaluated and approved prior to implementation. The specific land uses requiring FAA evaluation and approval include:

- Buildings and structures. Examples include, but are not limited to residences, schools, churches, hospitals or other medical care facilities, commercial/industrial buildings, etc;
- Recreational land use. Examples include, but are not limited to golf courses, sports fields, amusement parks, other places of public assembly, etc;
- Transportation facilities. Examples include, but are not limited to:
  - Rail facilities - light or heavy, passenger or freight,
  - Public roads/highways, and
  - Vehicular parking facilities;
- Fuel storage facilities (above and below ground);
- Hazardous material storage (above and below ground);
- Wastewater treatment facilities; and
- Above-ground utility infrastructure (i.e., electrical substations), including any type of solar panel installations.

The *Interim Guidance on Land within a Runway Protection Zone* states, “RPZ land use compatibility also is often complicated by ownership considerations. Airport owner control over the RPZ land is emphasized to achieve the desired protection of people and property on the ground. Although the FAA recognizes that in certain situations the airport sponsor may not fully control land within the RPZ, the FAA expects airport sponsors to take all possible measures to protect against and remove or mitigate incompatible land uses.”

Currently, the RPZ review standards are applicable to any new or modified RPZ. The following actions or events could alter the size of an RPZ, potentially introducing an incompatibility:

- An airfield project (e.g., runway extension, runway shift);
- A change in the critical design aircraft that increases the RPZ dimensions;
- A new or revised instrument approach procedure that increases the size of the RPZ; and/or
- A local development proposal in the RPZ (either new or reconfigured).

Since the interim guidance only addresses a new or modified RPZ, existing incompatibilities are generally (but not always) grandfathered under certain circumstances. While it is still necessary for the airport sponsor to take all reasonable actions to meet the RPZ design standard, FAA funding priority for certain actions, such as relocating existing roads in the RPZ, will be determined on a case-by-case basis.

RPZs have been further designated as approach and departure RPZs. The approach RPZ is a function of the Aircraft Approach Category (AAC) and approach visibility minimums associated with the approach runway end. The departure RPZ is a function of the AAC and departure procedures associated with the runway. For a particular runway end, the more stringent RPZ requirements (usually associated with the approach RPZ) will govern the property interests and clearing requirements that the airport sponsor should pursue.

As shown on **Exhibit 3C**, the airport owns all property within the Runway 4R, 22L and 22R RPZs. A portion of the Runway 4L RPZ extends beyond airport property but is controlled by an avigation easement. E. Queen Creek Road, a public-use road, extends through the Runway 4L RPZ. Public roadways are considered an incompatible land use within an RPZ; however, since it is an existing condition the FAA can "grandfather" the condition so that no corrective action is necessary. The perimeter service road passes through the Runway 22L and 22R RPZs but since this is a non-public use road it is not considered an incompatible RPZ land use.

RUNWAY SEPARATION STANDARDS

There are several other standards related to separation distances from runways. Each of these is designed to enhance the safety of the airfield.

Runway/Taxiway Separation

The design standard for the separation between runways and parallel taxiways is a function of the critical design aircraft and the instrument approach visibility minimum. The separation standard for both runways at CHD is 240 feet from the runway centerline to the parallel taxiway centerline. Parallel Taxiway A is 240 feet north of Runway 4L-22R, and Taxiways B and C are both 400 feet from the Runway 4R-22L centerline.

Hold Line Position Separation

Hold line position markings are placed on taxiways leading to runways. When instructed, pilots are to stop short of the holding position marking line. For Runway 4R-22L, hold line position markings are situated 200 feet from the runway centerline, which meets the B-II-5000 standard. For Runway 4L-22R, hold line position markings are situated 125 feet from the runway centerline, which meets the B-II-VIS (small airplane) standard.

Aircraft Parking Area Separation

Aircraft parking areas at CHD should be at least 250 feet from either runway centerline. The nearest parking positions on the north side are greater than 350 feet from the Runway 4L-22R centerline and the helicopter parking positions south of Runway 4R-22L are over 600 feet from the centerline. Therefore, the standard is met.

TAXIWAYS

The design standards associated with taxiways are determined by the Taxiway Design Group (TDG) or the ADG of the critical design aircraft. As determined previously, the applicable ADG for both runways is ADG II. **Table 3K** presents the various taxiway design standards related to ADG II.

TABLE 3K
Taxiway Dimensions and Standards
Chandler Municipal Airport

STANDARDS BASED ON WINGSPAN	*ADG II*	
Taxiway Protection		
Taxiway Safety Area width (feet)	79	
Taxiway Object Free Area width (feet)	131	
Taxilane Object Free Area width (feet)	115	
Taxiway Separation		
Taxiway Centerline to:		
Fixed or Movable Object (feet)	65.5	
Parallel Taxiway/Taxilane (feet)	105	
Taxilane Centerline to:		
Fixed or Movable Object (feet)	57.5	
Parallel Taxilane (feet)	97	
Wingtip Clearance		
Taxiway Wingtip Clearance (feet)	26	
Taxilane Wingtip Clearance (feet)	18	
STANDARDS BASED ON TDG	*TDG 1A/1B*	*TDG 2*
Taxiway Width Standard (feet)	25	35
Taxiway Edge Safety Margin (feet)	5	7.5
Taxiway Shoulder Width (feet)	10	15

ADG: Airplane Design Group
TDG: Taxiway Design Group
Source: FAA AC 150/5300-13A, Change 1, *Airport Design*

An examination of the taxiway system at CHD identified no taxiway safety area (TSA) or taxiway object free area (TOFA) incompatibilities. One area of note is that the separation distance between Taxiway A and the edge taxilane on the south side of the T-Hangar complex is 74 feet. This distance does not meet the ADG II standard of 105 feet; however, it does meet the ADG I separation standard of 70 feet. Aircraft should use caution in this area to ensure wingtip clearance is maintained with other aircraft particularly when Taxiway A is in use by an ADG II aircraft. The effected area is identified in **Figure 3A**.



FIGURE 3A – ADG I TAXIWAY CENTERLINE SEPARATION AREA

The table also shows those taxiway design standards related to TDG. The TDG standards are based on the Main Gear Width (MGW) and Cockpit to Main Gear (CMG) distance of the critical design aircraft expected to use those taxiways. Different taxiway and taxilane pavements can and should be planned to the most appropriate TDG design standards based on usage.

The current taxiway design for both runways should be TDG 2. As such, the taxiways on the airfield should be at least 35 feet wide. The entire taxiway system at CHD is at least 40 feet wide. Certain portions of the landside area that are utilized exclusively by small aircraft, such as the T-hangar areas, should adhere to TDG 1A/1B standards.

All taxiway widths on the airfield should at least be maintained unless financial constraints dictate. As such, the width could remain until such time as rehabilitation is needed and financial resources to support such are not available. FAA grant availability can only be provided if the project meets eligibility thresholds as determined by the FAA.

Taxiway Design Considerations

FAA AC 150/5300-13A, Change 1, *Airport Design*, provides guidance on recommended taxiway and taxilane layouts to enhance safety by avoiding runway incursions. A runway incursion is defined as "any occurrence at an airport involving the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing and takeoff of aircraft."

The taxiway system at CHD generally provides for the efficient movement of aircraft; however, AC 150/5300-13A, Change 1, *Airport Design*, provides recommendations for taxiway design. The following is a list of the taxiway design guidelines and the basic rationale behind each recommendation.

1. **Taxi Method**: Taxiways are designed for "cockpit over centerline" taxiing with pavement being sufficiently wide to allow a certain amount of wander. On turns, sufficient pavement should be provided to maintain the edge safety margin from the landing gear. When constructing new taxiways, upgrading existing intersections should be undertaken to eliminate "judgmental over-steering," which is where the pilot must intentionally steer the cockpit outside the marked centerline in order to assure the aircraft remains on the taxiway pavement.
2. **Steering Angle**: Taxiways should be designed such that the nose gear steering angle is no more than 50 degrees, the generally accepted value to prevent excessive tire scrubbing.
3. **Three-Node Concept**: To maintain pilot situational awareness, taxiway intersections should provide a pilot a maximum of three choices of travel. Ideally, these are right and left angle turns and a continuation straight ahead.
4. **Intersection Angles**: Turns should be designed to 90 degrees wherever possible. For acute angle intersections, standard angles of 30, 45, 60, 120, 135, and 150 degrees are preferred.
5. **Runway Incursions**: Taxiways should be designed to reduce the probability of runway incursions.
   - *Increase Pilot Situational Awareness*: A pilot who knows where he/she is on the airport is less likely to enter a runway improperly. Complexity leads to confusion. Keep taxiway systems simple using the "three-node" concept.
   - *Avoid Wide Expanses of Pavement*: Wide pavements require placement of signs far from a pilot's eye. This is especially critical at runway entrance points. Where a wide expanse of pavement is necessary, avoid direct access to a runway.
   - *Limit Runway Crossings*: The taxiway layout can reduce the opportunity for human error. The benefits are twofold – through simple reduction in the number of occurrences and through a reduction in air traffic controller workload.
   - *Avoid "High Energy" Intersections*: These are intersections in the middle third of runways. By limiting runway crossings to the first and last thirds of the runway, the portion of the runway where a pilot can least maneuver to avoid a collision is kept clear.
   - *Increase Visibility*: Right-angle intersections, both between taxiways and runways, provide the best visibility. Acute angle runway exits provide for greater efficiency in runway usage but should not be used as runway entrance or crossing points. A right-angle turn at the end of a parallel taxiway is a clear indication of approaching a runway.
   - *Avoid "Dual Purpose" Pavements*: Runways used as taxiways and taxiways used as runways can lead to confusion. A runway should always be clearly identified as a runway and only a runway.
   - *Indirect Access*: Do not design taxiways to lead directly from an apron to a runway. Such configurations can lead to confusion when a pilot typically expects to encounter a parallel taxiway.
   - *Hot Spots*: Confusing intersections near runways are more likely to contribute to runway incursions. These intersections must be redesigned when the associated runway is subject to reconstruction or rehabilitation. Other "hot spots" should be corrected as soon as practicable.

6. **Runway/Taxiway Intersections**:
   - *Right-Angle*: Right-angle intersections are the standard for all runway/taxiway intersections, except where there is a need for a high-speed exit. Right-angle taxiways provide the best visual perspective to a pilot approaching an intersection with the runway to observe aircraft in both the left and right directions. They also provide optimal orientation of the runway holding position signs so they are visible to pilots.
   - *Acute Angle*: Acute angles should not be larger than 45 degrees from the runway centerline. A 30-degree taxiway layout should be reserved for high-speed exits. The use of multiple intersecting taxiways with acute angles creates pilot confusion and improper positioning of taxiway signage.
   - *Large Expanses of Pavement*: Taxiways must never coincide with the intersection of two runways. Taxiway configurations with multiple taxiway and runway intersections in a single area create large expanses of pavement, making it difficult to provide proper signage, marking, and lighting.
7. **Taxiway/Runway/Apron Incursion Prevention**: Apron locations that allow direct access into a runway should be avoided. Increase pilot situational awareness by designing taxiways in such a manner that forces pilots to consciously make turns. Taxiways originating from aprons and forming a straight line across runways at mid-span should be avoided.
   - *Wide Throat Taxiways*: Wide throat taxiway entrances should be avoided. Such large expanses of pavement may cause pilot confusion and makes lighting and marking more difficult.
   - *Direct Access from Apron to a Runway*: Avoid taxiway connectors that cross over a parallel taxiway and directly onto a runway. Consider a staggered taxiway layout that forces pilots to make a conscious decision to turn.
   - *Apron to Parallel Taxiway End*: Avoid direct connection from an apron to a parallel taxiway at the end of a runway.

FAA AC 150/5300-13A, Change 1, *Airport Design*, states that "existing taxiway geometry should be improved whenever feasible, with emphasis on designated 'hot spots.'" To the extent practicable, the removal of existing pavement may be necessary to correct confusing layouts. CHD has taken steps to correct non-standard taxiway geometry conditions including relocating some taxiways to eliminate direct-access points from the north apron to Runway 4L-22R. There are, however, additional taxiway geometry issues still to be addressed.

The FAA has identified one taxiway hot spot at CHD. It is located at the Runway 22R threshold and is described as follows: Runway 22R may be used as an alternate taxi route due to run-up area and taxiway congestion.

Additional non-standard taxiway geometry conditions at CHD include:

- Taxiways F, M, and Q provide direct access to a runway from an apron area (see **Figure 3B**).
- Taxiway H crosses Runway 4L-22R in the high-energy area.
- Taxiway N crosses Runway 4R-22L in the high-energy area.

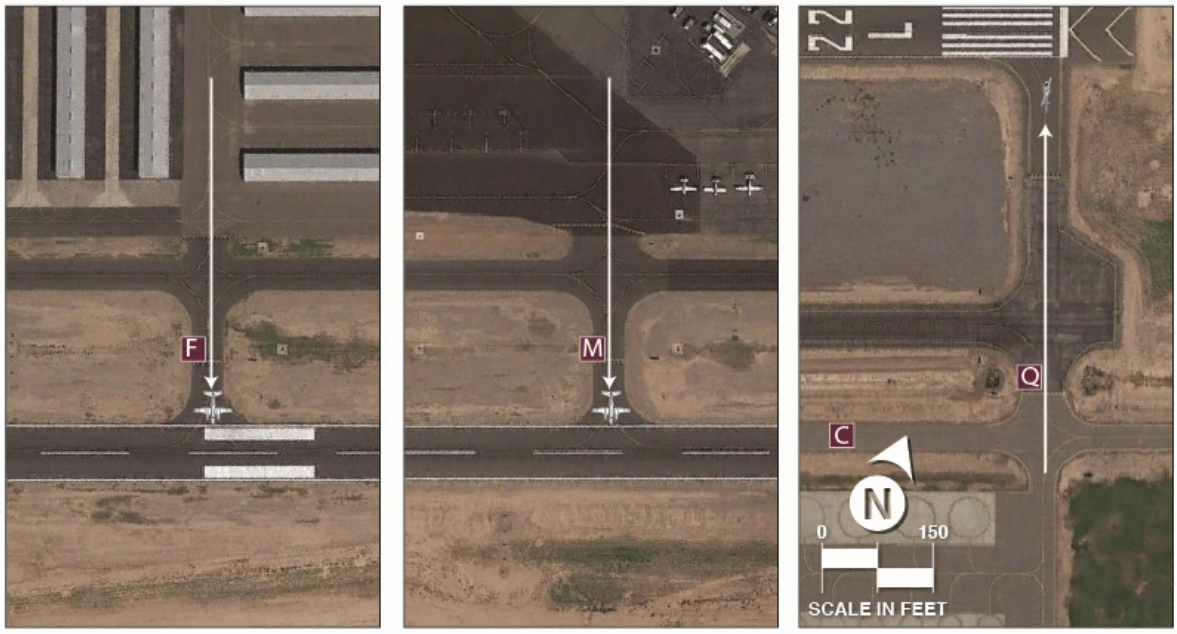

FIGURE 3B – DIRECT-ACCESS TAXIWAY POINTS

In the alternatives chapter, potential solutions to these non-standard conditions will be presented. Analysis in the next chapter will also consider improvements which could be implemented on the airfield to minimize runway incursion potential, improve efficiency, and conform to FAA standards for taxiway design. Any future taxiways planned will also take into consideration the taxiway design standards.

Taxilane Design Considerations

Taxilanes are distinguished from taxiways in that they do not provide access to or from the runway system directly. Taxilanes typically provide access to hangar areas. As a result, taxilanes can be planned to varying design standards depending on the type of aircraft utilizing the taxilane. For example, a taxilane leading to a T-hangar area only needs to be designed to accommodate those aircraft typically accessing the T-hangar.

NAVIGATIONAL AND APPROACH AIDS

Navigational aids are devices that provide pilots with guidance and position information when utilizing the runway system. Electronic and visual guidance to arriving aircraft enhance the safety and capacity of the airfield. Such facilities are vital to the success of an airport and provide additional safety to passengers using the air transportation system. While instrument approach aids are especially helpful during poor weather, they are often used by pilots conducting flight training and operating larger aircraft when visibility is good.

Instrument Approach Aids

CHD has two published non-precision straight-in instrument approach procedures to Runway 4R. These procedures provide down to one-mile visibility minimums and 500-foot cloud ceilings. Each of the procedures include circling approaches, allowing for minimums to any runway end at the airport. Analysis in the next chapter will consider improvements necessary for enhancing instrument approach capabilities to the runway system including achieving lower visibility minimums.

Visual Approach Aids

In most instances, the landing phase of any flight must be conducted in visual conditions. To provide pilots with visual guidance information during landings to the runway, electronic visual approach aids are commonly provided at airports. Currently, each runway end at CHD is equipped with a four-box precision approach path indicator (PAPI-4). These approach aids should be maintained through the planning period.

Runway end identification lights (REILs) are flashing lights located at the runway threshold end that facilitate rapid identification of the runway end at night and during poor visibility conditions. REILs provide pilots with the ability to identify the runway thresholds and distinguish the runway end lighting from the other lighting on the airport and in the approach areas. The FAA indicates that REILs should be considered for all lighted runway ends not planned for more sophisticated approach lighting systems. There are currently REIL systems on each end of Runway 4R-22L. REILs should also be considered for Runway 4L-22R.

Weather Reporting Aids

CHD has a lighted wind cone and segmented circle. The wind cone provides information to pilots regarding wind speed and direction. Typically, the wind cone is centralized on the airfield system and often co-located within a segmented circle, which is the case at CHD. The segmented circle consists of a system of visual indicators designed to provide traffic pattern information to pilots.

CHD is equipped with an AWOS, which provides weather observations 24 hours per day. The system updates weather observations every minute, continuously reporting significant weather changes as they occur in real time. This information is then transmitted via a designated radio frequency at regular intervals. This system should be maintained through the planning period.

AIRFIELD LIGHTING, MARKING, AND SIGNAGE

There are several lighting and pavement marking aids serving pilots using the airport. These aids assist pilots in locating an airport and runway at night or in poor visibility conditions. They also serve aircraft navigating the airport environment on the ground when transitioning to/from aircraft parking areas to the runway.

Airport Identification Lighting | CHD's rotating beacon is located on top of the ATCT. The beacon is in good working order and should be maintained through the planning period.

Runway and Taxiway Lighting | Both runways at CHD are equipped with medium intensity runway lighting (MIRL) systems. These systems are adequate and should be maintained. The taxiway system is equipped with medium intensity taxiway lighting (MITL). This system is also adequate and should be maintained. Planning should consider expansion of the MIRL and MITL systems when/if new pavements are constructed.

Pavement Markings | Runway markings are typically designed to the type of instrument approach available on the runway. FAA AC 150/5340-1K, *Standards for Airport Markings*, provides guidance necessary to design airport markings. Runway 4R-22L has non-precision markings which aid in accommodating the instrument approach procedures to Runway 4R and provides enhanced identification for both ends of the runway. These runway markings should be maintained through the long-term planning horizon. Runway 4L-22R has basic markings, which are adequate for existing and ultimate conditions.

Airfield Signs | Airfield identification signs assist pilots in identifying their location on the airfield and directing them to their desired location. Lighted signs are installed on the runway and taxiway system on the airfield. The signage system includes runway and taxiway designations, holding positions, routing/directional, runway exits, and runway distance remaining. All these signs should be maintained throughout the planning period.

It should be noted that many airports are transitioning to light emitting diode (LED) lighting systems. LEDs have many advantages, including lower energy consumption, longer lifespan, increased durability, reduced size, greater reliability, and faster switching. While a larger initial investment is required upfront, the energy savings and reduced maintenance costs will outweigh any additional costs in the long run. As systems need to be repaired/replaced, consideration should be given to upgrading to LED systems.

A summary of the airside facilities at CHD are presented on **Exhibit 3D**.

LANDSIDE FACILITY REQUIREMENTS

Landside facilities are those necessary for the handling of aircraft and passengers while on the ground. These facilities provide the essential interface between the air and ground transportation modes. The capacity of the various components of each element was examined in relation to projected demand to identify future landside facility needs. At CHD, this includes components for general aviation needs and support facilities.

GENERAL AVIATION ACTIVITIES

General aviation facilities are those necessary for handling general aviation aircraft, passengers, and cargo while on the ground. This section is devoted to identifying future general aviation facility needs during the planning period for the following types of facilities normally associated with general aviation terminal areas.

- General Aviation Terminal Services
- Aircraft Hangars
- Aircraft Parking Aprons

General Aviation Terminal Services

The general aviation terminal facilities at an airport are often the first impression of the community that corporate officials and other visitors will encounter. General aviation terminal facilities at an airport provide space for passenger waiting, pilot's lounge, flight planning, concessions, management, storage, and many other various needs. This space is not necessarily limited to a single, separate terminal building, but can include space offered by fixed base operators (FBOs) and other specialty operators for these functions and services. At CHD, general aviation terminal services are provided by the terminal building and the FBO, Chandler Air Service. The terminal building is 5,500 square feet (sf) and Chandler Air Service has approximately 2,000 sf of terminal services-equivalent space.

The methodology used in estimating general aviation terminal facility needs was based on the number of airport users expected to utilize general aviation facilities during the design hour. Space requirements for terminal facilities were based on providing 125 square feet per design hour itinerant passenger. A multiplier of 1.5 in the short term, increasing to 2.5 in the long term, was also applied to terminal facility needs to better determine the number of passengers associated with each itinerant aircraft operation. This increasing multiplier indicates an expected increase in larger aircraft operations through the long-term. These operations typically support larger turboprop and jet aircraft, which can accommodate an increasing passenger load factor. Such is the case at CHD, where an increasing number of turbine operations are anticipated.

Table 3L outlines the space requirements for general aviation terminal services at CHD through the long-term planning period. As shown in the table, up to 7,900 sf of additional space could be needed in the long-term for general aviation passengers. The amount of space currently offered by the terminal building and FBO combined is approximately 7,500 sf. Other SASOs on the airfield also provide space for pilots and passengers; however, these areas are not widely utilized by transient operators.

TABLE 3L
General Aviation Terminal Area Facilities
Chandler Municipal Airport

	Currently Available	Short-Term Need	Intermediate-Term Need	Long-Term Need
General Aviation Services Facility Area (s.f.)	7,500	7,800	11,000	15,400
General Aviation Design Hour Passengers		62	88	123
Passenger Multiplier		1.5	2.0	2.5
Terminal Vehicle Parking Spaces	29	31	44	61
FBO/SASO Vehicle Parking Spaces	169	185	207	237

N/A - Approximate terminal space offered by FBOs is unknown.
[a] Includes total spaces at the terminal building and within the FBO/SASO areas.
Source: Coffman Associates analysis

	AVAILABLE	SHORT TERM	LONG TERM
RUNWAYS		**Runway 4R-22L**	
	RDC B-II-5000	RDC B-II-5000	RDC B-II-5000
	4,870' x 75'	Maintain	Examine potential extension alternatives
	30,000 lbs. SWL	Maintain	Maintain
	Standard RSA; ROFA; ROFZ	Maintain	Maintain
	RPZs: 100% Owned by Airport Sponsor	Maintain	Maintain
		Runway 4L-22R	
	RDC B-II-VIS (small aircraft)	RDC B-II-VIS (small aircraft)	RDC B-II-VIS (small aircraft)
	4,401' x 75'	Maintain	Maintain
	30,000 lbs. SWL	Maintain	Maintain
	Standard RSA; ROFA; ROFZ	Maintain	Maintain
	RPZs: 100% Owned/Controlled by Avigation Easements	Maintain	Maintain
TAXIWAYS			
	TDG-2	TDG-2	TDG-2
	All taxiways at least 40' wide	Maintain	Maintain
	FAA Hot Spot #1	Consider Corrective Measures	Maintain Corrected Condition
	Direct Access Points - Taxiways F, M, and Q	Consider Corrective Measures	Maintain Corrected Condition
	High-Energy Crossings - Taxiways H and N	Consider Corrective Measures	Maintain Corrected Condition
NAVIGATIONAL AND APPROACH AIDS			
	RNAV (GPS) 1-Mile Visibility Minimums (4R)	Consider Improving to 3/4-Mile Visibility Minimums	Maintain
	VOR 1-Mile Visibility Minimums (4R)	Maintain	Maintain
	Runways 4L, 22R, 22L - Visual Only	Consider One-Mile or Greater GPS-based Instrument Approach	Maintain
	AWOS	Maintain	Maintain
	ATCT	Maintain	Maintain
	Segmented Circle/Lighted Windcone	Maintain	Maintain
	PAPI-4s (4R-22L) (4L-22R)	Maintain	Consider gradual replacement with LED technology
	REILs (4R-22L)	Consider REILs (4L-22R)	Consider gradual replacement with LED technology
LIGHTING, MARKING, AND SIGNAGE			
	Rotating Beacon	Maintain	Maintain
	Non-Precision Markings (4R-22L)	Maintain	Maintain
	Basic Markings (4L-22R)	Maintain	Maintain
	MIRL - (4R-22L & 4L-22R)	Maintain	Consider gradual replacement with LED technology
	MITL - All Taxiways	Maintain	Consider gradual replacement with LED technology
	Holding Position Markings - 200' from Runway 4R-22L Centerline	Maintain	Maintain
	Holding Position Markings - 125' from Runway 4L-22R Centerline	Maintain	Maintain
	Lighted airfield location and directional signage	Maintain	Consider gradual replacement with LED technology

ABBREVIATIONS

ATCT -Airport Traffic Control Tower
AWOS - Automated Weather Observation System
GPS - Global Positioning System
LED - Light Emitting Diode
MIRL - Medium Intensity Runway Lighting
MITL - Medium Intensity Taxiway Lighting
PAPI - Precision Approach Path Indicator
RDC - Runway Design Code
REILs - Runway End Identification Lights
ROFA- Runway Object Free Area
ROFZ- Runway Object Free Zone
RPZ- Runway Protection Zone
RSA- Runway Safety Area
RNAV - Area Navigation
SWL - Single Wheel Loading
TDG - Taxiway Design Group
VOR- Very-high Frequency Omni-Directional Range



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General aviation vehicle parking demands have also been determined for CHD. Space determinations for passengers were based on an evaluation of existing airport use, as well as standards set forth to help calculate projected terminal facility needs. There are currently 29 individual spaces at the terminal building and 169 spaces serving the FBO/SASOs at the airport. Parking requirements for general aviation activity call for approximately 29 terminal spaces in the short-term, increasing to approximately 61 spaces in the long-term planning horizon. For the FBO/SASO areas of the airport, vehicle parking needs are estimated at 185 in the short-term and 237 in the long-term reflecting growth in operational activity along with additional employee needs.

Aircraft Hangars

Utilization of hangar space varies as a function of local climate, security, and owner preference. The trend in general aviation aircraft is toward more sophisticated (and consequently, more expensive) aircraft; therefore, many aircraft owners prefer enclosed hangar space as opposed to outside tiedowns.

The demand for aircraft storage hangars is dependent upon the number and type of aircraft expected to be based at the airport in the future. For planning purposes, it is necessary to estimate hangar requirements based upon forecast operational activity. However, hangar development should be based upon actual demand trends and financial investment conditions. It was mentioned in Chapter Two that CHD maintains waiting lists for both T-hangars and the shade hangar. In total there are 112 individuals waiting for hangar space at CHD.

While most aircraft owners prefer enclosed aircraft storage, several based aircraft will still use outdoor tiedown spaces, usually due to lack of available hangar space, high hangar rental rates, or operational needs. Therefore, enclosed hangar facilities do not necessarily need to be planned for each based aircraft.

As discussed in Chapter One, hangar types vary greatly in size and function. T-hangars, box hangars, and shade hangars are popular with aircraft owners that need to store one private aircraft. These hangars often provide individual spaces within a larger structure or in standalone portable buildings. There is 289,069 sf of storage space at the airport comprised of T-hangars, box hangars, and shade hangars. For determining future aircraft storage needs, a planning standard of 1,200 square feet per aircraft is utilized for these types of hangars.

Executive box hangars are open space facilities with no interior supporting structure. These hangars can vary in size between 1,500 and 2,500 square feet, with some approaching 10,000 square feet. They are typically able to house single engine, multi-engine, turboprop, and jet aircraft, as well as helicopters. Executive box hangar space at CHD is estimated at 98,748 sf. For future planning, a standard of 3,000 sf per turboprop, 5,000 sf per jet, and 1,500 sf per helicopter is utilized for executive box hangars.

Conventional hangars are the large, open space facilities with no supporting interior structure. These hangars provide for bulk aircraft storage and are often utilized by airport businesses, such as an FBO or an aircraft maintenance operator. Conventional hangars are generally larger than executive box hangars and can range in size from 10,000 square feet to more than 20,000 square feet. Often, a portion of a conventional hangar is utilized for non-aircraft storage needs, such as maintenance or office space.

There are five conventional hangars at CHD totaling approximately 50,700 sf. The same aircraft sizing standards utilized for executive hangars is also utilized for conventional hangars. Since portions of the hangars are known to be used for aircraft maintenance servicing, requirements for maintenance/service hangar area were estimated using a planning standard of 125 square feet per based aircraft. In total, there is currently approximately 31,900 sf of conventional hangar space that is cross utilized for aircraft maintenance and storage on the airport.

Future hangar requirements for the airport are summarized in **Table 3M**. While some based aircraft will continue to utilize aircraft parking apron space as opposed to enclosed hangar space, the overall percentage of aircraft seeking hangar space is projected to increase during the long-term planning period.

TABLE 3M
Aircraft Hangar Requirements
Chandler Municipal Airport

	Currently Available	Short-Term Need	Intermediate-Term Need	Long-Term Need	Difference
Total Based Aircraft	441	490	540	640	+199
Hangar Area Requirements					
T-Hangar, Box Hangar, Shade (sf)	289,069	322,900	373,800	475,700	+186,631
Executive Box Hangar Area (sf)	98,748	102,700	116,200	148,000	+49,252
Conventional Hangar Area (sf)	50,700	59,500	73,000	104,800	+54,100
- Aircraft Maintenance Area (sf)	31,900	61,300	67,500	80,000	+48,100
Total Hangar Area (sf)	438,517	485,100	563,000	728,500	+289,983

Source: Coffman Associates analysis

The analysis shows that future hangar requirements indicate a potential need for almost 290,000 sf of new hangar storage capacity through the long-term planning period. This includes a mixture of hangar area, with the largest needs projected in the T-hangar/box hangar/shade hangar category. Due to the projected increase in based aircraft, annual general aviation operations, and hangar storage needs, facility planning will consider additional hangars at the airport. It is expected that the aircraft storage hangar requirements will continue to be met through a combination of hangar types.

It should be noted that hangar requirements are general in nature and based upon the aviation demand forecasts. The actual need for hangar space will further depend on the usage within the hangars. For example, some hangars may be utilized entirely for non-aircraft storage, such as maintenance; yet from a planning standpoint, they have an aircraft storage capacity. Therefore, the needs of an individual user may differ from the calculated space necessary.

Aircraft Parking Aprons

The aircraft parking apron is an expanse of paved area intended for aircraft parking and circulation. FAA Advisory Circular 150/5300-13A, *Airport Design*, suggests a methodology by which transient apron requirements can be determined from knowledge of busy day operations. The number of itinerant parking spaces required was determined to be approximately 20 percent of the busy day itinerant operations for general aviation operations. A planning standard of 800 square yards (sy) per aircraft was applied to

determine future transient apron requirements for single and multi-engine piston aircraft. For business jets, which oftentimes are much larger, a planning standard of 1,600 sy per aircraft position was used. In addition, CHD has aircraft that use outside aircraft tiedowns for storage. It is assumed that these aircraft require less space than transient aircraft; therefore, a planning standard of 650 sy per aircraft was applied. For local tiedown needs, an additional 10 percent was added for maintenance activities and temporary storage needs. Apron parking requirements are presented in **Table 3N**. Transient apron parking needs are divided into business jet needs and smaller single and multi-engine aircraft needs.

TABLE 3N
Aircraft Parking Apron Requirements
Chandler Municipal Airport

	Currently Available	Short-Term Need	Intermediate-Term Need	Long-Term Need	Difference
Local Aircraft Parking (sy)		164,515	175,110	193,700	
Transient General Aviation (sy)		59,200	63,200	71,200	
Jet/Turboprop Aircraft Parking (sy)		8,000	9,600	14,400	
Total Apron Area (sy)	235,854	231,715	247,910	279,300	+43,446

Source: Coffman Associates analysis

Currently, existing general aviation aircraft parking aprons at the airport total approximately 235,854 sy of space and provide 302 marked fixed-wing and helicopter parking positions. This includes tiedowns on all four aprons (terminal, FBO, north, and heliport). As shown in the table, the apron area currently available is adequate through the short-term period; however, an additional 43,446 sy of capacity is needed by the long-term period.

A summary of the general aviation landside facilities previously discussed is presented on **Exhibit 3E**.

SUPPORT FACILITIES

Various other landside facilities that play a supporting role in overall airport operations have also been identified. These support facilities include:

- Aviation Fuel Storage
- Perimeter Fencing and Gates

Aviation Fuel Storage

Chandler Air Service and the City of Chandler are the airport's only public fuel service providers. Chandler Air Service has a 12,000-gallon Jet A tank and a 10,000-gallon 100LL tank. The City of Chandler provides 100LL fuel utilizing a 12,000-gallon tank.

Based upon historic fuel flowage records provided by airport management, in 2019, the airport pumped 304,967 gallons of Jet A and 407,747 gallons of 100LL. Utilizing operations reported by the FAA's Traffic Flow Management System Count database, the number of turbine operations in 2019 totaled

	AVAILABLE	SHORT-TERM	INTERMEDIATE-TERM	LONG-TERM
GENERAL AVIATION TERMINAL FACILITIES AND PARKING				
Building Space (sf)	7,500	7,800	11,000	15,400
Total GA Parking Spaces	198	216	251	298



AIRCRAFT STORAGE HANGAR REQUIREMENTS				
T-Hangar/Box/Shade Area (sf)	289,069	321,700	373,800	475,700
Executive Hangar Area (sf)	98,748	102,700	116,200	148,000
Conventional Hangar Area (sf)	50,700	59,500	73,000	104,800
Service/Maintenance Area (sf)	31,900	61,300	67,500	80,000
Total Hangar Storage Area (sf)	438,517	483,900	563,000	728,500



AIRCRAFT PARKING APRON				
Transient Single/Multi-Engine Aircraft (sy)		59,200	63,200	71,200
Transient Business Jet/Turboprop (sy)		8,000	9,600	14,400
Local Based (sy)		164,515	175,110	193,700
Total Apron Area (sy)	235,854	231,715	247,910	279,300



SUPPORT FACILITIES				
14-Day Fuel Storage - 100LL	22,000	16,600	17,400	18,900
14-Day Fuel Storage - Jet A	12,000	14,400	30,400	67,400



approximately 1,986 with the remainder (218,676) being piston operations. Dividing the total fuel flowage by the total number of operations provides a ratio of fuel flowage per operation. In 2019, the airport pumped approximately 153.6 gallons of Jet A per turbine operation and 1.9 gallons of 100LL per piston operation. It is anticipated that, over the course of the planning period, the Jet A flowage ratio will remain around 160 gallons per operation and the AvGas flowage ratio will remain static at 1.9 gallons per operation.

Maintaining a 14-day fuel supply would allow the airport to limit the impact of a disruption of fuel delivery. Currently, the airport has enough static fuel storage to meet the 14-day supply criteria for 100LL fuel through the long-term horizon. The forecasted fuel storage requirements summarized in **Table 3P** show a need to expand Jet A fuel storage capacity by up to 55,400 gallons by the long-term horizon.

TABLE 3P
Fuel Storage Requirements
Chandler Municipal Airport

			Planning Horizon		
	Capacity	2019 Need	Short-Term	Intermediate-Term	Long-Term
Jet A					
Daily Usage (gal.)	[redacted]	836	1,030	2,172	4,816
14-Day Supply (gal.)	12,000	11,700	14,400	30,400	67,400
Annual Usage (gal.)	[redacted]	304,967	376,000	792,900	1,757,900
AvGas					
Daily Usage (gal.)	[redacted]	1,117	1,188	1,241	1,347
14-Day Supply (gal.)	22,000	15,600	16,600	17,400	18,900
Annual Usage (gal.)	[redacted]	407,747	433,800	452,800	491,700

Sources: Historic fuel flowage data provided by airport administration; Fuel supply projections prepared by Coffman Associates.

Fuel storage requirements are typically based upon keeping a two-week supply of fuel during an average month; however, more frequent deliveries can reduce the fuel storage capacity requirements. Generally, fuel tanks should be of adequate capacity to accept a full refueling tanker, which is approximately 8,000 gallons, while maintaining a reasonable level of fuel in the storage tank. Future aircraft demand experienced by the FBOs will determine the need for additional fuel storage capacity. It is important that airport personnel work with the FBOs to plan for adequate levels of fuel storage capacity through the long-term planning period of this study.

Perimeter Fencing and Gates

Perimeter fencing is used at airports primarily to secure the aircraft operational area. The physical barrier of perimeter fencing provides the following functions:

- Gives notice of legal boundary of the outermost limits of the facility or security sensitive area;
- Assists in controlling and screening authorized entries into a secured area by deterring entry elsewhere along the boundary;

- Supports surveillance, detection, assessment, and other security functions by providing a zone for installing intrusion detection equipment and closed-circuit television (CCTV);
- Deters casual intruders from penetrating the aircraft operations areas on the airport;
- Creates a psychological deterrent;
- Demonstrates a corporate concern for facilities; and
- Limits inadvertent access to the aircraft operations area by wildlife.

CHD operations areas are completely enclosed by a six-foot chain-link fence topped by three-strand barbed-wire. The fence does not always follow the airport property line due to the physical terrain of the area and the layout of the airport property. A series of controlled access gates are also available for use at the airport.

SUMMARY

This chapter has outlined the safety design standards and facilities required to meet potential aviation demand projected at CHD for the next 20 years. In an effort to provide a more flexible master plan, the yearly forecasts from Chapter Two have been converted to planning horizon levels. The short-term roughly corresponds to a 5-year timeframe, the intermediate-term is approximately 10 years, and the long-term is 20 years. By utilizing planning horizons, airport management can focus on demand indicators for initiating projects and grant requests rather than on specific dates in the future.

In Chapter Four, potential improvements to the airside and landside systems will be examined through a series of airport development alternatives. Most of the alternatives discussion will focus on those capital improvements that would be eligible for federal and state grant funds. Other projects of local concern will also be presented. Ultimately, an overall airport development plan that presents a vision beyond the 20-year scope of this master plan will be developed for CHD.



Chapter Four

AIRPORT ALTERNATIVES

In the previous chapter, aviation facilities required to satisfy airside and landside demand through the long-term planning period of the master plan were identified. In addition, various Federal Aviation Administration (FAA) standards were discussed that apply to airfield design. The next step in the planning process is to evaluate reasonable ways these facilities can be provided, and the design standards can be met. The purpose of this chapter is to formulate and examine rational development alternatives that address the short-, intermediate-, and long-term planning horizon levels. Because there are a multitude of possibilities and combinations, it is necessary to focus on those opportunities that have the greatest potential for success. Each alternative provides a differing approach to meet existing and future facility needs, and these layouts are presented for purposes of evaluation and discussion.

Some airports become constrained due to limited availability of space, while others may be constrained due to adjacent land use development. Careful consideration should be given to the layout of future facilities and impacts to potential airfield improvements at Chandler Municipal Airport (CHD). Proper planning at this time can ensure the long-term viability of the airport for aviation and economic growth.

The primary goal of this planning process is to develop a feasible plan for meeting the needs resulting from the projected market demand over the next 20 years. The plan of action should be developed in a manner that is consistent with the future goals and objectives of the City of Chandler, airport users, the local community, and the surrounding region, all of whom have a vested interest in the development and operation of CHD.

The goal is to develop an underlying rationale which supports the final recommended concept. Through this process, an evaluation of the highest and best uses of airport property will be made, while also weighing local development goals, efficiency, physical and environmental factors, capacity, and appropriate safety design standards.

The alternatives presented in this chapter have been formulated as potential means to meet the overall program objectives for the airport in a balanced manner. Through coordination with the City of Chandler, CHD management, the Planning Advisory Committee (PAC), and the public, an alternative (or combination thereof) will be refined and modified as necessary into a recommended development concept. Therefore, the planning considerations and alternatives presented in this chapter can be considered a beginning point in the evolution of a recommended concept for the future of CHD.

PLANNING OBJECTIVES

A set of basic planning objectives has been established to guide the alternatives development process. It is the goal of this master planning effort to produce a development plan for the airport that addresses forecast aviation demand and meets FAA design standards to the greatest degree possible. As owner and operator, the City of Chandler provides the overall guidance for the operation and development of the airport. It is of primary concern that CHD is marketed, developed, and operated for the betterment of the community and its users. The following basic planning principles and objectives will be utilized as general guidelines during this planning effort:

- To develop a safe, attractive, and efficient aviation facility in accordance with applicable federal, state, and local regulations;
- To preserve and protect public and private investments in existing airport facilities;
- To provide a means for the airport to grow as dictated by demand;
- To put into place a plan to ensure the long-term viability of the airport as well as to promote compatible land uses surrounding the airport;
- To develop a facility that is readily responsive to the changing needs of all aviation users;
- To be reflective and supportive of the long-term planning efforts currently applicable to the region;
- To develop a facility with a focus on self-sufficiency in both operational and developmental cost recovery; and,
- To ensure that future development is environmentally compatible.

REVIEW OF PREVIOUS AIRPORT PLANS

The previous master plan for CHD was completed in 2007. More recently, the Airport Layout Plan (ALP) was updated in 2016.

The existing Airport Layout Drawing is shown on **Exhibit 4A**. The Airport Layout Drawing graphically depicts airside and landside recommendations based upon previous airport planning that include:

- Extending Runway 4R-22L by 681 feet to the northeast for a full length of 5,550 feet.
- Taxiway improvements, including the extension of Taxiway B to the Runway 4L threshold, and geometry improvements to eliminate direct-access points from the apron to the runway and high-energy area crossings.
- Taxiway fillet improvements to meet current FAA design standards.
- Additional landside development in the form of T-hangars and shade hangars.

The analysis presented in this chapter will revisit the recommendations presented on the Airport Layout Drawing as well as in the previous Master Plan. Since completion of the last plan, the FAA has made significant modifications to design standards as outlined in the previous chapter. As such, some of the previous plan's elements may be carried over to this master plan and others may be changed and/or removed from further consideration.

NO ACTION/NON-DEVELOPMENT ALTERNATIVES

The City of Chandler is charged with managing the airport for the economic betterment of the community and region. In some cases, alternatives may include a no action option; however, for CHD, this would effectively reduce the quality of services being provided to the general public, affect the aviation facility's ability to meet FAA design standards, and affect the region's ability to support aviation needs. The ramifications of a no action alternative extend into impacts on the economic well-being of the region. **An analysis of the economic benefit of the airport completed in 2016 found that CHD generates $109.06 million dollars in revenue and almost 800 jobs.** If facilities are not maintained and improved so that the airport provides a pleasant experience for the visitor or business traveler, or if delays become unacceptable, then activity and business may shift elsewhere. The no action alternative is also inconsistent with the long-term goals of the FAA and Arizona Department of Transportation (ADOT) – Aeronautics Group, which is to enhance local and interstate commerce. Therefore, a no action alternative is not considered further in this master plan.

Likewise, this study will not consider the relocation of services to another airport or development of a new airport site. The development of a new facility such as CHD is a very complex and expensive option. A new site will require greater land area, duplication of investment in facilities, installation of supporting infrastructure that is already available at the existing site, and greater potential for negative impacts to natural, biological, and cultural resources.

The purpose of this master plan is to examine aviation needs at CHD over the course of the next 20 years. Therefore, this master plan will examine the needs of the existing airport and will present a program of needed capital improvement projects to cover the scope of the plan. The airport is a lucrative business, transportation utility, and economic asset for the region. It can accommodate existing and future demand and should be developed accordingly to support the interests of local residents and businesses which rely upon it. Ultimately, the final decision with regards to pursuing development rests with the City of Chandler and the FAA on an individual project basis. The analysis to follow considers airside and

landside development alternatives that take into account an array of facility demands, including safety, capacity, access, and efficiency.

AIRFIELD ALTERNATIVES

The development alternatives are categorized into two functional areas: airfield and landside. The airfield relates to runways, taxiways, navigational aids, lighting and marking aids, etc., which require the greatest commitment of land area to meet the physical layout of an airport, as well as the required airfield safety standards. The design of the airfield also defines minimum set-back distances from the runway and object clearance standards. These criteria are defined first to ensure that the fundamental needs of CHD are met. The landside includes terminal services, hangars, aircraft parking aprons, as well as utilization of remaining property to provide revenue support for the airport and to benefit the economic development and well-being of the regional area. This section focuses on airfield facilities.

Each functional area interrelates and affects the development potential of the others. Therefore, all areas must be examined individually, and then coordinated as a whole, to ensure the final plan is functional, efficient, and cost-effective. The total impact of all these factors must be evaluated to determine if the investment in CHD will meet the needs of the surrounding area, both during and beyond the planning period of this study.

As part of this alternatives analysis, Coffman Associates' subconsultant (Dibble Engineering) has prepared preliminary build-out cost estimates for each of the airfield and landside alternatives. Dibble Engineering is providing engineering support for the master plan and is familiar with CHD. A cost breakdown is provided at the end of each alternative description that outlines individual proposed projects so that a financial comparison can be made. These costs are planning-level estimates only that will need to be refined during the project design phase.

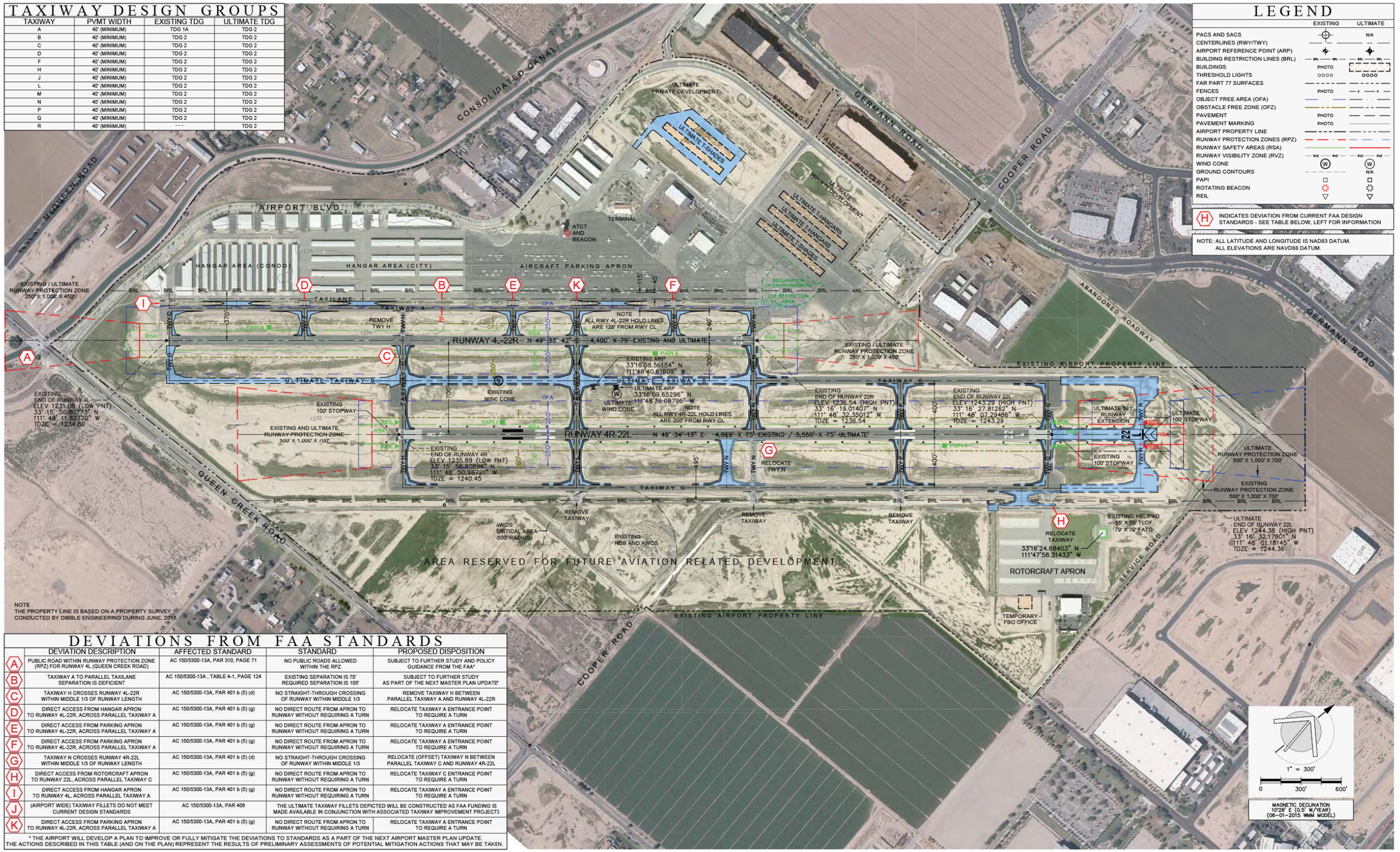
AIRFIELD CONSIDERATIONS

Table 4A presents a summary of the primary airfield planning considerations for the alternatives analysis. Landside planning considerations are outlined later in the chapter. These considerations are the result of the findings of the aviation demand forecasts and facility requirements evaluations, as well as input from the PAC, CHD management, and the public. In addition to these considerations, both runways should continue to meet applicable runway design code (RDC) standards[1]. Runway 4R-22L is planned to meet RDC B-II-5000 standards and Runway 4L-22R is planned to meet RDC B-II-VIS (small airplane) design standards.

[1] Applicable RDC standards are detailed in the Facility Requirements chapter.

TAXIWAY DESIGN GROUPS

TAXIWAY	PVMT WIDTH	EXISTING TDG	ULTIMATE TDG
A	40' (MINIMUM)	TDG 1A	TDG 2
B	40' (MINIMUM)	TDG 2	TDG 2
C	40' (MINIMUM)	TDG 2	TDG 2
D	40' (MINIMUM)	TDG 2	TDG 2
F	40' (MINIMUM)	TDG 2	TDG 2
H	40' (MINIMUM)	TDG 2	TDG 2
J	40' (MINIMUM)	TDG 2	TDG 2
L	40' (MINIMUM)	TDG 2	TDG 2
M	40' (MINIMUM)	TDG 2	TDG 2
N	40' (MINIMUM)	TDG 2	TDG 2
P	40' (MINIMUM)	TDG 2	TDG 2
Q	40' (MINIMUM)	TDG 2	TDG 2
R	40' (MINIMUM)	---	TDG 2



NOTE
THE PROPERTY LINE IS BASED ON A PROPERTY SURVEY CONDUCTED BY DIBBLE ENGINEERING DURING JUNE, 2016.

LEGEND

	EXISTING	ULTIMATE
PACS AND SACS		N/A
CENTERLINES (RWY/TWY)		
AIRPORT REFERENCE POINT (ARP)		
BUILDING RESTRICTION LINES (BRL)	BRL BRL	BRL BRL
BUILDINGS	PHOTO	
THRESHOLD LIGHTS		
FAR PART 77 SURFACES		
FENCES	PHOTO	X X
OBJECT FREE AREA (OFA)		
OBSTACLE FREE ZONE (OFZ)		
PAVEMENT	PHOTO	
PAVEMENT MARKING	PHOTO	
AIRPORT PROPERTY LINE		
RUNWAY PROTECTION ZONES (RPZ)		
RUNWAY SAFETY AREAS (RSA)		
RUNWAY VISIBILITY ZONE (RVZ)	RVZ RVZ	RVZ RVZ
WIND CONE	W	W
GROUND CONTOURS		N/A
PAPI		
ROTATING BEACON		
REIL		

(H) INDICATES DEVIATION FROM CURRENT FAA DESIGN STANDARDS - SEE TABLE BELOW, LEFT FOR INFORMATION

NOTE: ALL LATITUDE AND LONGITUDE IS NAD83 DATUM. ALL ELEVATIONS ARE NAVD88 DATUM.

DEVIATIONS FROM FAA STANDARDS

	DEVIATION DESCRIPTION	AFFECTED STANDARD	STANDARD	PROPOSED DISPOSITION
A	PUBLIC ROAD WITHIN RUNWAY PROTECTION ZONE (RPZ) FOR RUNWAY 4L (QUEEN CREEK ROAD)	AC 150/5300-13A, PAR 310, PAGE 71	NO PUBLIC ROADS ALLOWED WITHIN THE RPZ	SUBJECT TO FURTHER STUDY AND POLICY GUIDANCE FROM THE FAA*
B	TAXIWAY A TO PARALLEL TAXILANE SEPARATION IS DEFICIENT	AC 150/5300-13A , TABLE 4-1, PAGE 124	EXISTING SEPARATION IS 70' REQUIRED SEPARATION IS 105'	SUBJECT TO FURTHER STUDY AS PART OF THE NEXT MASTER PLAN UPDATE*
C	TAXIWAY H CROSSES RUNWAY 4L-22R WITHIN MIDDLE 1/3 OF RUNWAY LENGTH	AC 150/5300-13A, PAR 401 b (5) (d)	NO STRAIGHT-THROUGH CROSSING OF RUNWAY WITHIN MIDDLE 1/3	REMOVE TAXIWAY H BETWEEN PARALLEL TAXIWAY A AND RUNWAY 4L-22R
D	DIRECT ACCESS FROM HANGAR APRON TO RUNWAY 4L-22R, ACROSS PARALLEL TAXIWAY A	AC 150/5300-13A, PAR 401 b (5) (g)	NO DIRECT ROUTE FROM APRON TO RUNWAY WITHOUT REQUIRING A TURN	RELOCATE TAXIWAY A ENTRANCE POINT TO REQUIRE A TURN
E	DIRECT ACCESS FROM PARKING APRON TO RUNWAY 4L-22R, ACROSS PARALLEL TAXIWAY A	AC 150/5300-13A, PAR 401 b (5) (g)	NO DIRECT ROUTE FROM APRON TO RUNWAY WITHOUT REQUIRING A TURN	RELOCATE TAXIWAY A ENTRANCE POINT TO REQUIRE A TURN
F	DIRECT ACCESS FROM PARKING APRON TO RUNWAY 4L-22R, ACROSS PARALLEL TAXIWAY A	AC 150/5300-13A, PAR 401 b (5) (g)	NO DIRECT ROUTE FROM APRON TO RUNWAY WITHOUT REQUIRING A TURN	RELOCATE TAXIWAY A ENTRANCE POINT TO REQUIRE A TURN
G	TAXIWAY N CROSSES RUNWAY 4R-22L WITHIN MIDDLE 1/3 OF RUNWAY LENGTH	AC 150/5300-13A, PAR 401 b (5) (d)	NO STRAIGHT-THROUGH CROSSING OF RUNWAY WITHIN MIDDLE 1/3	RELOCATE (OFFSET) TAXIWAY N BETWEEN PARALLEL TAXIWAY C AND RUNWAY 4R-22L
H	DIRECT ACCESS FROM ROTORCRAFT APRON TO RUNWAY 22L, ACROSS PARALLEL TAXIWAY C	AC 150/5300-13A, PAR 401 b (5) (g)	NO DIRECT ROUTE FROM APRON TO RUNWAY WITHOUT REQUIRING A TURN	RELOCATE TAXIWAY C ENTRANCE POINT TO REQUIRE A TURN
I	DIRECT ACCESS FROM HANGAR APRON TO RUNWAY 4L, ACROSS PARALLEL TAXIWAY A	AC 150/5300-13A, PAR 401 b (5) (g)	NO DIRECT ROUTE FROM APRON TO RUNWAY WITHOUT REQUIRING A TURN	RELOCATE TAXIWAY A ENTRANCE POINT TO REQUIRE A TURN
J	(AIRPORT WIDE) TAXIWAY FILLETS DO NOT MEET CURRENT DESIGN STANDARDS	AC 150/5300-13A, PAR 406	THE ULTIMATE TAXIWAY FILLETS DEPICTED WILL BE CONSTRUCTED AS FAA FUNDING IS MADE AVAILABLE IN CONJUNCTION WITH ASSOCIATED TAXIWAY IMPROVEMENT PROJECTS	
K	DIRECT ACCESS FROM PARKING APRON TO RUNWAY 4L-22R, ACROSS PARALLEL TAXIWAY A	AC 150/5300-13A, PAR 401 b (5) (g)	NO DIRECT ROUTE FROM APRON TO RUNWAY WITHOUT REQUIRING A TURN	RELOCATE TAXIWAY A ENTRANCE POINT TO REQUIRE A TURN

* THE AIRPORT WILL DEVELOP A PLAN TO IMPROVE OR FULLY MITIGATE THE DEVIATIONS TO STANDARDS AS A PART OF THE NEXT AIRPORT MASTER PLAN UPDATE. THE ACTIONS DESCRIBED IN THIS TABLE (AND ON THE PLAN) REPRESENT THE RESULTS OF PRELIMINARY ASSESSMENTS OF POTENTIAL MITIGATION ACTIONS THAT MAY BE TAKEN.

CHANDLER MUNICIPAL AIRPORT (CHD)
Chandler, Arizona

△	REVISION DESCRIPTION	DATE

AIRPORT LAYOUT DRAWING

CHANDLER MUNICIPAL AIRPORT (CHD)
CHANDLER, ARIZONA

Planning:	NJP
Drawn:	NJP
Checked:	DE
Date:	11 / 22 / 2016

Sheet No. 2 of 11

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TABLE 4A
Airfield Planning Considerations
Chandler Municipal Airport

#	Non-Standard/Deficient Condition	Applicable Design Standard	Proposed Action(s) to be Evaluated
1	Runway 4R-22L, at 4,870 feet long, is deficient in length to safely serve most business jet aircraft.	FAA AC 150/5325-4B, *Runway Length Requirements for Airfield Design,* Paragraph 306.	Extend Runway 4R-22L.
2	Runway 4L-22R should be equipped with runway end identifier lights (REILS) to improve pilot situational awareness.	FAA AC 150/5300-13A, Change 1, *Airport Design,* Paragraph 317.a.(4).	Add REILs to both ends of Runway 4L-22R.
3	Taxiways F, M, and Q provide direct access from apron areas to the runways, which can result in a runway incursion.	FAA AC 150/5300-13A, Change 1, *Airport Design,* Paragraph 401.b.(5).(g).	Offset connecting taxiways to force pilots to make a turn prior to entering a runway.
4	Taxiways H and N create high-energy area runway intersections with a runway.	FAA AC 150/5300-13A, Change 1, *Airport Design,* Paragraph 401.b.(5).(d).	Move crossings to areas outside the high-energy area (middle 1/3rd of the runway).
5	Existing holding aprons are non-standard design.	FAA AC 150/5300-13A, Change 1, *Airport Design,* Paragraph 412.b.	Construct new holding bays that meet design standard.
6	Hot Spot #1 – Runway 22R may be used as an alternate taxi route due to run-up area and taxiway congestion.	FAA AC 150/5300-13A, Change 1, *Airport Design,* Paragraph 401.	Extend Taxiway B and redesign holding bay to mitigate congestion.
7	Existing blast pads at the ends of Runway 4R-22L do not meet design standards.	FAA AC 150/5300-13A, Change 1, *Airport Design,* Paragraph 304.d.	Upgrade blast pads at both ends of Runway 4R-22L.
8	Runway 4L-22R basic markings do not meet design standard for a non-precision approach runway.	FAA AC 150/5300-13A, Change 1, *Airport Design,* Paragraph 205.b.(2)	If non-precision approaches are established to the runway, the markings should be upgraded to include threshold markings.

Source: Coffman Associates analysis.

Consideration #1 – Runway Length

The primary runway at CHD, Runway 4R-22L, is currently 4,870 feet long and 75 feet wide. The existing width meets RDC B-II-5000 design standards; however, the length is insufficient to safely accommodate most turbine powered aircraft, particularly during hot weather conditions and when aircraft operate with heavier loads. The current Airport Layout Plan (ALP) for CHD includes a 680-foot extension of the runway to the northeast for a full length of 5,550 feet. Constraints in the form of E. Queen Creek Road to the southwest and the development of the SOLLiD Cabinetry facility along Germann Road to the

northeast prohibit any further extension of the runway beyond the currently planned 680-foot extension. For this reason, the 680-foot northeast extension is the only extension alternative considered.

Consideration #2 – Visual Aids

Both runways are equipped with precision approach path indicator (PAPI) systems and the primary runway is equipped with runway end identifier lights (REILs). Parallel Runway 4L-22R is not equipped with REILS, which help pilots locate and identify the end of the runway, particularly when an airport is located within a developed area with many light sources. As a result, REILs are recommended for both ends of Runway 4L-22R. The alternative exhibits to follow each reflect adding REILs to the parallel runway.

Consideration #3 – Direct-Access Points

FAA taxiway geometry design standards recommend offsetting taxiway connections between aprons and runways to mitigate the potential of pilots unfamiliar with the airport layout unintentionally taxiing directly onto a runway resulting in a runway incursion. Taxiways F, M, and Q provide for direct access to the runway and are, therefore, non-standard design. The airfield alternatives present options for eliminating the direct-access points and forcing pilots to make turns, which increases a pilot's situational awareness.

Consideration #4 – High Energy Intersections

FAA taxiway geometry design standards recommend avoiding runway/taxiway intersections in the middle third of a runway where a pilot can least maneuver. High energy intersections include Taxiway H and Runway 4L-22R, and Taxiway N and Runway 4R-22L. The airfield alternatives present options for eliminating the high energy area intersections.

Consideration #5 – Holding Bays

The airport has six existing holding bays: two of which are located at the end of Runway 4L-22R (north side) and four located near the end of Runway 4R-22L (north and south sides). These holding aprons are a traditional design consisting of a wide pavement area that allows aircraft to pull aside and perform pre-flight engine checks. The traditional design for these holding aprons is now considered non-standard since the wide expansive pavement area makes signage and lighting more difficult for pilots to see, which can lead to pilot confusion, particularly near the entrance of a runway. In 2014, the FAA changed the holding bay design standard to incorporate clearly marked entrance/exits with independent parking areas separated by islands that allow aircraft to safely bypass each other, while also decreasing the amount of pavement. The airfield alternatives consider closing the traditional holding bays and propose options for constructing new holding bays that meet current design standards.

Consideration #6 – Hot Spot Mitigation

Hot spot #1 at CHD has resulted from pilots using Runway 22R as an alternate route due to run-up area and taxiway congestion. Previous planning has included extending Taxiway B to the southwest to expand taxiway circulation routes, which would alleviate congestion at the end of Runway 22R. The alternatives analysis will examine this and other taxiway layouts to mitigate the hot spot. Furthermore, redesigning the holding bay at the Runway 22R end will also contribute to mitigating the hot spot issues.

Consideration #7 – Blast Pads

Runway 4R-22L is planned to accommodate more frequent operations by jet aircraft. Jet blast can cause soil erosion and sends dust and debris into the air. The existing blast pads on Runway 4R-22L, which also function as stopways, are 90 feet long and 90 feet wide. The RDC B-II-5000 blast pad design standard is 95 feet wide and 150 feet long. The airfield alternatives depict adding new blast pads to both ends of the runway that meet these dimensions.

Consideration #8 – Runway 4L-22R Markings

Runway 4L-22R does not currently have published instrument approach capabilities. It is recommended that the airport consider establishing non-precision approaches to both ends of the runway with visibility minimums of one mile or greater. Implementing a non-precision approach to the runway would not change the dimensions of the safety areas, including the Runway Protection Zones (RPZs), nor would it require the installation of new on-site equipment; however, the runway markings would need to be upgraded to include threshold markings. Each of the airfield alternatives reflect the upgraded non-precision markings on Runway 4L-22R.

AIRFIELD ALTERNATIVE 1

Depicted on **Exhibit 4B**, Airfield Alternative 1 presents a scenario focused on correcting non-standard airfield geometry and maintaining the primary runway at its current length of 4,870 feet. This is an important scenario to consider since an extension to Runway 4R-22L is not a foregone conclusion. **A runway extension still requires justification with the FAA to be eligible for funding through the Airport Improvement Program (AIP). Justification typically involves documentation of at least 500 annual operations by operators and aircraft expressing a need for the additional runway. An environmental assessment (EA) process would also need to be completed, along with extensive public outreach. If justification for a runway extension is not achieved for several years or ever, a contingency airfield plan should be available.**

The features of Airfield Alternative 1 include:

1. REILs are added to both ends of Runway 4L-22R.

2. Taxiway B is extended south to Taxiway H to improve taxiway circulation and mitigate hot spot #1 by providing additional access points to Taxiway B via Taxiway L.

3. The portion of Taxiway F north of Taxiway A is closed and the pavement removed to prevent direct access to the runway.

4. The portion of Taxiway H between Taxiway A and Runway 4L-22R is closed and the pavement removed to eliminate the high energy runway crossing point.

5. The portion of Taxiway M between Taxiway A and Runway 4L-22R is closed and the pavement removed to prevent direct access to the runway.

6. The holding bay at the Runway 22R end and the taxilane extending to the north along the edge of the environmental site is closed and the pavement removed. The holding bay and taxilane create a wide expansive pavement area that is non-standard.

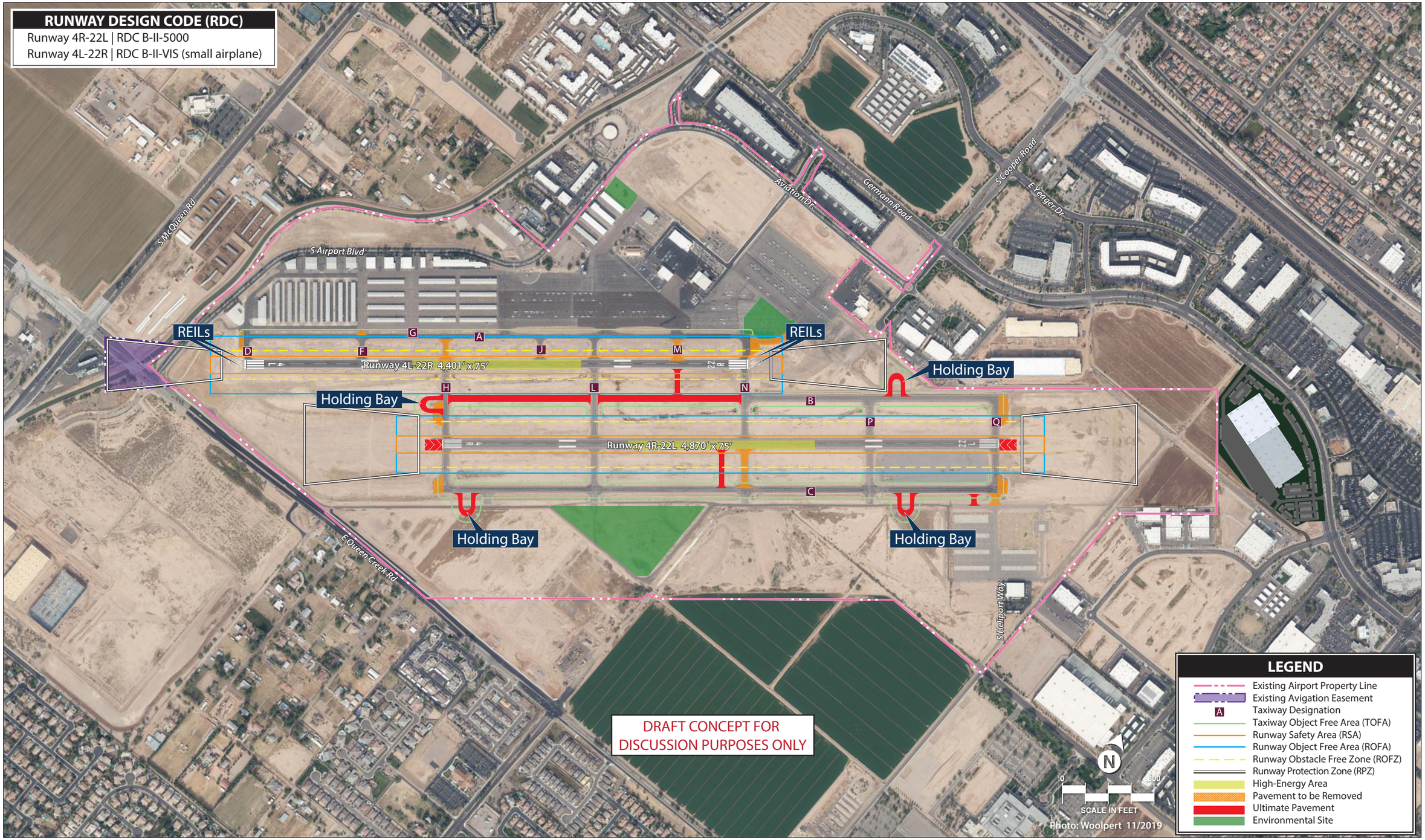
7. The existing holding bays throughout the airfield are closed and the pavement removed. New single lane holding bays are added along Taxiway B east of the Runway 22R RPZ, west of Taxiway H, and south of Taxiway C near the ends of the runway.

8. The portion of Taxiway N between Runway 4R-22L and Taxiway C is closed, and the pavement removed to eliminate the high energy runway crossing point. A new connecting taxiway is added approximately 200 feet west of the section to be closed.

9. The portion of Taxiway Q south of Taxiway C connecting to the heliport apron is closed and the pavement removed to prevent direct access to the runway. A new connecting taxiway to Taxiway C is added, approximately 100 feet west of the section to be closed.

10. Blast pads at the ends of Runway 4R-22L are expanded to meet design standards.

11. Upgraded Runway 4L-22R to non-precision markings by adding threshold markings.


RUNWAY DESIGN CODE (RDC)
Runway 4R-22L | RDC B-II-5000
Runway 4L-22R | RDC B-II-VIS (small airplane)
S McQueen Rd
S Airport Blvd
Aviation Dr
Germann Road
S Cooper Road
E Yeager Dr
REILs
REILs
Runway 4L-22R 4,401' x 75'
Holding Bay
Holding Bay
Runway 4R-22L 4,870' x 75'
Holding Bay
Holding Bay
E Queen Creek Rd
S Heliport Way
DRAFT CONCEPT FOR DISCUSSION PURPOSES ONLY
LEGEND
Existing Airport Property Line
Existing Avigation Easement
A Taxiway Designation
Taxiway Object Free Area (TOFA)
Runway Safety Area (RSA)
Runway Object Free Area (ROFA)
Runway Obstacle Free Zone (ROFZ)
Runway Protection Zone (RPZ)
High-Energy Area
Pavement to be Removed
Ultimate Pavement
Environmental Site
N
0
800
SCALE IN FEET
Photo: Woolpert 11/2019

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Airfield Alternative 1 Estimated Construction Cost

Item No.	Proposed Projects	Estimated Cost
	Runway 4R-22L	
1	Construct Blast Pads at both runway ends	$470,000
	Runway 4L-22R	
2	Install REILS at both runway ends	$110,000
	Parallel Taxiway A *(and projects along Taxiway A)*	
3	Remove Run-up near TWY A/D intersection	$110,000
4	Remove Run-up near TWY A/N intersection	$210,000
5	Remove Connector TWY H between TWY A and RWY 4L-22R	$120,000
6	Remove Connector TWY M between TWY A and RWY 4L-22R	$120,000
	Parallel Taxiway B *(and projects along Taxiway B)*	
7	Extend TWY B between TWY L and TWY N	$1,600,000
8	Extend TWY B between TWY N and TWY H	$1,600,000
9	Remove Run-up on TWY H between RW 4R-22L & RW 4L 22R	$140,000
10	Remove Run-up near TWY B/Q intersection	$180,000
11	Construct Holding Bay near TWY B/H intersection (1 aircraft)	$470,000
12	Construct Holding Bay near TWY B/P intersection (1 aircraft)	$450,000
13	Construct Connector TWY M between TWY B and RWY 4L-22R	$420,000
	Parallel Taxiway C *(and projects along Taxiway C)*	
14	Remove Run-up near TWY C/H intersection	$130,000
15	Remove Run-up near TWY C/Q intersection	$140,000
16	Construct Holding Bay near TWY C/H intersection (1 aircraft)	$510,000
17	Construct Holding Bay near TWY C/P intersection (1 aircraft)	$510,000
18	Relocate TWY N between TWY C and RWY 4R-22L	$630,000
19	Relocate TWY Q between TWY C and hangar area	$510,000
	TOTAL	**$8,430,000**

Source: Dibble Engineering

AIRFIELD ALTERNATIVE 2

Depicted on **Exhibit 4C**, Airfield Alternative 2 incorporates a 680-foot extension to Runway 4R-22L for a full length of 5,550 feet. This added length will make the airport more accessible to jet aircraft, particularly during hot weather conditions.

The features of Airfield Alternative 2 include:

1. Runway 4R-22L is extended by 680 feet to the northeast for a full length of 5,550 feet. The associated RDC B-II-5000 safety areas are extended for the same distance but remain entirely on airport property.

2. Taxiways B and C are extended to the new Runway 22L threshold.

3. Runway 4L-22R is maintained at its current length of 4,401 feet and fully meets RDC B-II-VIS (small airplane) design standards.

4. REILs are added to both ends of Runway 4L-22R.

5. Taxiway B is extended south to the Runway 4L threshold to improve taxiway circulation and mitigate hot spot #1 by providing additional access points to Taxiway B via Taxiway L and F.

6. The portion of Taxiway F north of Taxiway A is closed and the pavement removed to prevent direct access to the runway.

7. Taxiway J is closed, and the pavement removed. Taxiway J is located approximately 475 feet from Taxiway L. Taxiway exits should be spaced 750 feet or greater to have an effect on capacity. Since Taxiway J does not meet this spacing recommendation, it can be considered for removal.

8. The portion of Taxiway H between Taxiway A and Taxiway B (excluding the runway pavement) is closed and the pavement removed to eliminate the high energy runway crossing point. An alternate route is created by extending Taxiway F from Runway 4L-22R to Taxiway B.

9. The portion of Taxiway M between Taxiway A and Runway 4L-22R is closed and the pavement removed to prevent direct access to the runway.

10. The holding bay at the Runway 22R end and the taxilane extending to the north along the edge of the environmental site is closed and the pavement removed. The holding bay and taxilane create a wide expansive pavement area that is non-standard.

11. The existing holding bays throughout the airfield are closed and the pavement removed. New single lane holding bays are added on the environmental site near the Runway 22R threshold, east of the Runway 22R RPZ and south of Taxiway C.

12. A multi-lane holding bay is located near the Runway 4L threshold along Taxiway B. A multi-lane holding bay can accommodate multiple aircraft at once, ideally suited for areas that can become congested.

13. The portion of Taxiway N between Runway 4R-22L and Taxiway C is closed and the pavement removed to eliminate the high energy runway crossing point. A new connecting taxiway is added approximately 200 feet west of the section to be closed.

14. The portion of Taxiway Q south of Taxiway C connecting to the heliport apron is closed and the pavement removed to prevent direct access to the runway. A new connecting taxiway to Taxiway C is added approximately 100 feet west of the section to be closed.

15. Blast pads at the ends of Runway 4R-22L are expanded to meet design standards.

16. Upgrade Runway 4L-22R to non-precision markings by adding threshold markings.

RUNWAY DESIGN CODE (RDC)

Runway 4R-22L | RDC B-II-5000

Runway 4L-22R | RDC B-II-VIS (small airplane)

S McQueen Rd

S Airport Blvd

Aviation Dr

Germann Road

S Cooper Road

E Yeager Dr

Holding Bay

REILs

REILs

680' Extension

Holding Bay

Runway 4L-22R 4,401' x 75'

Runway 4R-22L 4,870' x 75' (5,550' x 75' Ultimate)

Holding Bay

Holding Bay

Holding Bay

E Queen Creek Rd

S Heliport Way

DRAFT CONCEPT FOR DISCUSSION PURPOSES ONLY

N

0 800

SCALE IN FEET

Photo: Woolpert 11/2019

LEGEND

- Existing Airport Property Line
- Existing Avigation Easement
- A Taxiway Designation
- Taxiway Object Free Area (TOFA)
- Runway Safety Area (RSA)
- Runway Object Free Area (ROFA)
- Runway Obstacle Free Zone (ROFZ)
- Runway Protection Zone (RPZ)
- High-Energy Area
- Pavement to be Removed
- Ultimate Pavement
- Environmental Site

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Airfield Alternative 2 Estimated Construction Cost

Item No.	Proposed Projects	Estimated Cost
	Runway 4R-22L	
1	Runway Extension (680') + TW B & TW C Extensions	$2,930,000
2	Construct Blast Pads at both runway ends	$470,000
	Runway 4L-22R	
3	Install REILS at both runway ends	$110,000
	Parallel Taxiway A *(and projects along Taxiway A)*	
4	Remove Run-up near TWY A/D intersection	$110,000
5	Remove Run-up near TWY A/N intersection	$210,000
6	Construct Holding Bay near TWY A/N intersection (1 aircraft)	$670,000
7	Remove Connector TWY H between TWY A and RWY 4L-22R	$120,000
8	Remove Connector TWY J between TWY A and RWY 4L-22R	$130,000
9	Remove Connector TWY M between TWY A and RWY 4L-22R	$120,000
	Parallel Taxiway B *(and projects along Taxiway B)*	
10	Extend TWY B between TWY L and TWY N	$1,600,000
11	Extend TWY B between TWY N and TWY H	$1,600,000
12	Extend TWY B between TWY H and TWY D, with new RWY End Connector	$2,050,000
13	Remove Run-up on TWY H between RW 4R-22L & RW 4L 22R	$140,000
14	Remove Run-up near TWY B/Q intersection	$180,000
15	Construct Holding Bay near TWY B/D intersection (3 aircraft)	$800,000
16	Construct Holding Bay near TWY B/P intersection (1 aircraft)	$450,000
17	Construct Connector TWY F between TWY B and RWY 4L-22R	$430,000
18	Construct Connector TWY M between TWY B and RWY 4L-22R	$430,000
	Parallel Taxiway C *(and projects along Taxiway C)*	
19	Remove Run-up near TWY C/H intersection	$130,000
20	Remove Run-up near TWY C/Q intersection	$140,000
21	Construct Holding Bay near TWY C/H intersection (1 aircraft)	$510,000
22	Construct Holding Bay near TWY C/P intersection (1 aircraft)	$510,000
23	Relocate TWY N between TWY C and RWY 4R-22L	$630,000
24	Relocate TWY Q between TWY C and hangar area	$510,000
	TOTAL	**$14,980,000**

Source: Dibble Engineering

AIRFIELD ALTERNATIVE 3

Depicted on **Exhibit 4D**, Airfield Alternative 3 also includes a 680-foot extension to Runway 4R-22L for a full length of 5,550 feet. The primary difference between Alternative 3 and the others is that it limits the number of taxiways being closed in favor of incorporating enhanced lighting and marking to mitigate direct access points.

The features of Airfield Alternative 3 include:

1. Runway 4R-22L is extended by 680 feet to the northeast for a full length of 5,550 feet. The associated RDC B-II-5000 safety areas are extended for the same distance but remain entirely on airport property.

2. Taxiways B and C are extended to the new Runway 22L threshold.

3. Runway 4L-22R is maintained at its current length of 4,401 feet and fully meets RDC B-II-VIS (small airplane) design standards.

4. REILs are added to both ends of Runway 4L-22R.

5. Taxiway B is extended west to Taxiway F to improve taxiway circulation and mitigate hot spot #1 by providing additional access points to Taxiway B via Taxiway L and F.

6. All holding position markings on the north side of Runway 4L-22R would be equipped with enhanced holding position markings, elevated guard lights, and in-pavement stop bar fixtures for the purpose of raising pilot situational awareness to prevent runway incursions. These systems could eliminate the need to remove pavement to mitigate direct access points.

7. The portion of Taxiway H between Runway 4L-22R and Taxiway B is closed and the pavement removed to eliminate the high energy runway crossing point. An alternate route is created by extending Taxiway F from Runway 4L-22R to Taxiway B.

8. The portion of Taxiway M between Taxiway A and Runway 4L-22R is closed and the pavement removed to prevent direct access to the runway. Taxiway M is a highly trafficked direct access point for the fixed base operator (FBO). This alternative maintains its removal rather than utilizing enhanced holding position markings and lighting to ensure operational safety.

9. The holding bay at the Runway 22R end and the taxilane extending to the north along the edge of the environmental site is closed and the pavement removed. The holding bay and taxilane create a wide expansive pavement area that is non-standard.

10. The existing holding bays throughout the airfield are closed and the pavement removed. A new single lane holding bay is added east of the Runway 22R RPZ.

11. Two multi-lane holding bays are located south of Taxiway C. As development occurs on the south side, it may become necessary to expand the holding bay capacity with multiple lanes to mitigate congestion.

12. The portion of Taxiway N between Runway 4R-22L and Taxiway C is closed and the pavement removed to eliminate the high energy runway crossing point. A new connecting taxiway is added approximately 200 feet west of the section to be closed.

13. Taxiway Q is closed, and the pavement removed to prevent direct access to the runway from heliport apron.

14. Blast pads at the ends of Runway 4R-22L are expanded to meet design standards.

15. Upgrade Runway 4L-22R to non-precision markings by adding threshold markings.

RUNWAY DESIGN CODE (RDC)

Runway 4R-22L | RDC B-II-5000

Runway 4L-22R | RDC B-II-VIS (small airplane)

Enhanced Holding Position Markings and Lighting

Enhanced Holding Position Markings and Lighting

Enhanced Holding Position Markings and Lighting

REILs

REILs

Runway 4L-22R 4,401' x 75'

Runway 4R-22L 4,870' x 75' (5,550' x 75' Ultimate)

680' Extension

Holding Bay

Holding Bay

Holding Bay

Elevated Stop Bar Fixture

In-Pavement Stop Bar Fixture

Elevated Runway Guard Lights

Elevated Stop Bar Fixture

In-Pavement Stop Bar Fixture

Elevated Runway Guard Lights

S McQueen Rd

Aviation Dr

Germann Road

S Cooper Road

E Yeager Dr

E Queen Creek Rd

S Heliport Way

DRAFT CONCEPT FOR DISCUSSION PURPOSES ONLY

N

0 800

SCALE IN FEET

Photo: Woolpert 11/2019

LEGEND

- Existing Airport Property Line
- Existing Avigation Easement
- A Taxiway Designation
- Taxiway Object Free Area (TOFA)
- Runway Safety Area (RSA)
- Runway Object Free Area (ROFA)
- Runway Obstacle Free Zone (ROFZ)
- Runway Protection Zone (RPZ)
- High-Energy Area
- Pavement to be Removed
- Ultimate Pavement
- Environmental Site

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Airfield Alternative 3 Estimated Construction Cost

Item No.	Proposed Projects	Estimated Cost
	Runway 4R-22L	
1	Runway Extension (680') + TW B & TW C Extensions	$2,930,000
2	Construct Blast Pads at both runway ends	$470,000
	Runway 4L-22R	
3	Install REILS at both runway ends	$110,000
4	Install Enhanced Holding Position Markings and Lighting, (at 6 locations - Connectors D, F, H, J, L & N, between RWY 4L-22R and TWY A)	$650,000
	Parallel Taxiway A *(and projects along Taxiway A)*	
5	Remove Run-up near TWY A/D intersection	$110,000
6	Remove Run-up near TWY A/N intersection	$210,000
7	Remove Connector TWY M between TWY A and RWY 4L-22R	$120,000
	Parallel Taxiway B *(and projects along Taxiway B)*	
8	Extend TWY B between TWY L and TWY N	$1,600,000
9	Extend TWY B between TWY N and TWY H	$1,600,000
10	Extend TWY B between TWY H and TWY F, with new connector	$1,280,000
11	Remove Run-up on TWY H between RW 4R-22L & RW 4L 22R	$140,000
12	Remove Run-up near TWY B/Q intersection	$180,000
13	Construct Holding Bay near TWY B/P intersection (1 aircraft)	$450,000
14	Remove Existing Connector TWY Q between TWY B and RWY 4R-22L (Relocated with Extension of TWY B)	$180,000
15	Remove Connector TWY H between TWY B and RWY 4L-22R	$130,000
	Parallel Taxiway C *(and projects along Taxiway C)*	
16	Remove Run-up near TWY C/H intersection	$130,000
17	Remove Run-up near TWY C/Q intersection	$140,000
18	Construct Holding Bay near TWY C/H intersection (3 aircraft)	$960,000
19	Construct Holding Bay near TWY C/P intersection (3 aircraft)	$960,000
20	Relocate TWY N between TWY C and RWY 4R-22L	$630,000
21	Remove Existing Connector TWY Q between TWY C and RWY 4L-22R (Relocated with Extension of TWY C)	$180,000
	TOTAL	**$13,160,000**

Source: Dibble Engineering

AIRFIELD SUMMARY

The sections above outlined seven planning considerations for the airfield at CHD. The primary issue at play on the airfield is addressing non-standard airfield geometry. While it may be simple enough to move forward with an alternative to close taxiway pavement that might correct the issue, it is equally important to consider any unintended consequences of those actions. If circulation is impacted, alternate routes need to be provided to ensure new bottlenecks are not created. For this reason, it is vitally

important that the PAC, airport/city management, and the public offer their feedback so that the best course of action is selected.

LANDSIDE ALTERNATIVES

Generally, landside issues are related to those facilities necessary or desired for the safe and efficient parking and storage of aircraft, movement of pilots and passengers to and from aircraft, airport support facilities, and overall revenue support functions. To maximize airport efficiency, it is important to locate facilities together that are intended to serve similar functions. The best approach to landside facility planning is to consider the development to be like that of a community where land use planning is the guide. For airports, the land use guide in the terminal area should generally be dictated by aviation activity levels. Consideration will also be given to non-aviation uses that can provide additional revenue support to the airport and support economic development for the region.

LANDSIDE CONSIDERATIONS

Landside planning considerations, summarized in **Table 4B**, will focus on strategies following a philosophy of separating activity levels. Landside facility development at CHD is focused primarily on the north side, including a terminal building, aprons, a variety of hangar facilities, and fixed base operator (FBO) or specialty aviation service operator (SASO) related facilities. Helicopter-related facilities are currently the only development on the south side. Of the airport's 532.478 acres, approximately 68 percent has been developed, leaving approximately 170 acres available for new development.

Consideration #1 – Terminal Services

Operations at CHD are projected to continue to increase over the course of the next 20 years. As operations grow, so will the need for more terminal service space, which includes passenger and pilot lounges, flight planning equipment, concessions, airport management offices, and storage space. The existing terminal building (constructed in 1996), combined with the available FBO spaces dedicated to these uses, will become undersized and outdated over time. For the airport to attract new high-end clientele, consideration should be given to developing a new, modern terminal building with all appropriate amenities to compete with other Phoenix area reliever airports. The airport and its terminal services are a very important link to the entire region, whether it is for business or pleasure. Consideration to aesthetics should be given high priority in all public areas, as the terminal will serve as the first impression a visitor may have of the community.

TABLE 4B
Landside Planning Considerations
Chandler Municipal Airport

#	Landside Component	Existing Capacity/ Condition	Consideration
1	Terminal Services	Existing 5,500 sf terminal on north side; 2,000 sf provided by FBO; 7,500 sf total	Expand terminal capacity to at least 15,400 sf. With the development on the south side, consider relocating main terminal to south side.
2	Hangars	438,517 sf (T-hangars, T-shades, executive, and conventional hangars)	Increase total capacity by at least 290,000 sf.
3	Aprons	235,854 sy	Increase capacity by at least 43,500 sy.
4	Fuel Storage	12,000 gallons (Jet A) 22,000 gallons (AvGas)	Increase Jet A storage capacity by at least 55,400 gallons. Consider new self-service fueling stations particularly on south side to support future development. Relocate existing underground AvGas storage tank at the airport operations and maintenance facility to the terminal apron.
5	Airport Operations & Maintenance	Utilizes old helipad site north of S. Airport Boulevard	Consider relocation of these facilities to provide better access to the airfield and to be in closer proximity to airport administration offices.
6	Aircraft Wash Rack	Not available	Consider sites for a wash rack to expand available airport amenities.
7	General Aviation Pilot's Lounge	Not available	Consider sites for a general aviation pilot's lounge.
8	Land Development	Approximately 363 acres (68%) of the airport's 532.478 acres is developed predominantly for aviation-related uses.	Consider appropriate aviation and non-aviation-related uses for the future development of undeveloped property and consider redevelopment opportunities for under-utilized areas.

sf – square feet | sy – square yards
Source: Coffman Associates analysis.

Consideration #2 – Hangars

With a hangar space waiting list of 87 people as of June 2020, there is demand for additional hangar capacity at CHD today. The landside alternatives will consider areas for the development of various hangar styles, including small aircraft facilities, executive hangars, and FBO/SASO hangars. These areas are further defined below.

- **Small aircraft facilities** typically consist of T-hangars/T-shades. These facilities often have lower levels of activity and, as such, can be located away from the primary apron areas in more remote locations of the airport. Limited utility services are needed for these areas.

- **Executive hangars** consist primarily of clear span hangars of less than 10,000 sf, which can accommodate small aviation businesses, one larger aircraft, or multiple smaller aircraft. These hangar areas typically require all utilities and segregated roadway access.

- **FBO/SASOs** are businesses that offer services, including but not limited to, aircraft rental and flight training, flight testing, aircraft manufacturing, aircraft charters, aircraft maintenance, line service, and aircraft fueling. The facilities associated with FBOs/SASOs include large conventional-type hangars that hold several aircraft. High levels of activity often characterize these operations, with a need for apron space for the storage and circulation of aircraft. These facilities are best placed along ample apron frontage with good visibility from the runway system for transient aircraft. Utility services are needed for these types of facilities, as well as vehicle parking areas.

Conceptual/order-of-magnitude costs for a range of hangar sizes is provided below. It is important to note that these costs are not inclusive of significant engineering/site preparations that may be required for unique site conditions and do not include special amenities, such as office space, conference areas, etc.

- 8,000 SF ~ $450,000
- 20,000 SF ~ $1,100,000
- 30,000 SF ~ $1,700,000
- T-Hangars ~ $45-$50/SF

Consideration #3 – Aprons

CHD has 235,854 sy of apron space for aircraft parking and circulation. Based on projected growth in based aircraft and transient operations, an additional 43,500 sy of apron capacity is needed over the next 20 years. Since apron space is typically co-located with hangar facilities, the landside alternatives assume areas of hangar development will also include apron space.

Consideration #4 – Fuel Storage

Additional fuel storage capacity for Jet A fuel is needed over the course of the planning period driven by increased activity by turbine aircraft. Since these facilities are typically associated with FBO/SASO operators, the landside alternatives assume new fuel storage facilities will be added in these areas. Additionally, the existing underground 100LL fuel storage tank, located on the north side of S. Airport Boulevard near the airport operations/maintenance facilities, is planned to be relocated to the terminal apron near the existing self-service station.

Consideration #5 – Airport Operations & Maintenance

The existing operations and maintenance facilities are located on the old heliport site between S. Airport Boulevard and the drainage canal. This site is not ideal, with it being separated from the entirety of the airport by a public road. New sites for airport operations and maintenance facilities are considered in the landside alternatives.

Consideration #6 – Aircraft Wash Rack

Wash racks are amenities provided at many airports so that aircraft owners can clean aircraft. A wash rack is typically a paved area with a central drain equipped with an oil/water separator, which prevents cleaning products from entering the stormwater system. Sites for an aircraft wash rack are considered in the landside alternatives.

Consideration #7 – General Aviation Pilot's Lounge

A general aviation pilot's lounge is a dedicated facility for pilots to socialize and hold events that might otherwise interfere with the day-to-day functions of the terminal building. They can also house other terminal-related functions, such as flight planning equipment and flight training classrooms. Consideration is given to potential sites for a pilot's lounge in the landside alternatives.

Consideration #8 – Land Development

The landside alternatives present development and redevelopment areas on the airport for aviation-related and non-aviation related uses, considering highest and best use potential. Aviation-related uses are typically reserved for property with direct access to the airfield. For property that is segregated from the airfield, an airport should consider non-aviation related development. The FAA typically requires airports to receive approval through a land-use release to lease airport-owned land for non-aviation related purposes. The FAA stipulates that all land with reasonable airside access should be used or reserved for aviation purposes. The only portion of airport property that is completely segregated from the airfield is the old heliport site, consisting of approximately 16.2 acres located between S. Airport Boulevard and the drainage canal on the north side. A portion of this site is currently utilized for aircraft operations and maintenance equipment storage. Approximately 11.4 acres of this area is within a floodplain.

Construction within a floodplain is regulated by the Maricopa County Flood Control District. Permits are required for any building or site alterations to ensure maximum protection against flooding is maintained. It should also be noted that any development proposed within a floodplain requires additional analysis and protections for any proposed structures and would likely result in significant off-site drainage improvements to offset the drainage impacts.

LANDSIDE ALTERNATIVES

The following section describes a series of landside alternatives as they relate to considerations detailed above. The alternatives focus on designating generalized land uses as opposed to proposing specific facility types, sizes, and configurations. This is beneficial in that a generalized land use gives flexibility for the development of a site to meet the needs of clients with no predetermined layout constraints.

Six alternatives have been prepared, three for the north side and three for the south side. The alternatives provide potential development plans aimed at meeting the needs of general aviation through the long-term planning period and, in some cases, beyond.

The alternatives to be presented are not the only reasonable options for development. In some cases, a portion of one alternative could be intermixed with another. Also, some development concepts could be replaced with others. The overall intent of this exercise is to outline basic development concepts to spur collaboration for a final recommended plan. The final recommended plan only serves as a guide for the airport, which will aid the City of Chandler in the strategic planning of airport property. Many times, airport operators change their plan to meet the needs of specific users. The goal in analyzing landside development alternatives is to focus future development so that airport property can be maximized, and aviation activity can be protected.

NORTH LANDSIDE ALTERNATIVE 1

Depicted on **Exhibit 4E**, North Landside Alternative 1 focuses primarily on small aircraft related facilities with the assumption that facilities catering to larger aircraft would be focused on the south side. The features of North Landside Alternative 1 include:

1. Redevelopment of the existing terminal building site with a 16,000-sf terminal with the orientation shifted south to align with the angle of the terminal apron. The vehicle parking lot is also reconfigured and expanded to support the new terminal building.

2. A roundabout is added to replace the intersection of S. Curtis Way and E. Ryan Road, which is a style consistent with the surrounding Chandler Airpark. A secured pedestrian gate would also be added to the perimeter fence providing access to the apron area.

3. The 100LL underground fuel storage tank currently located north of S. Airport Boulevard would be relocated and made an above ground tank in support of the self-service station on the terminal apron.

4. The vehicle parking lot adjacent to the airport traffic control tower (ATCT) would be redeveloped as an airport operations/maintenance site providing better access to airport facilities and the airfield and closer proximity to airport administrative offices.

5. An aircraft wash rack is considered at the east edge of the north apron.


Environmental Site to be Redeveloped as Apron
Executive Hangar Development Reserve (~5.9 Acres)
Small Aircraft Facilities Development Reserve (~12.4 Acres)
New Terminal Building - 16,000 sf
Non-Aviation Development Reserve - Floodplain Restrictions (~11.4 Acres)
Non-Aviation Development Reserve (~4.8 Acres)
Small Aircraft Facilities Development Reserve (~5.2 Acres)
Small Aircraft Facilities Redevelopment Reserve (~2.9 Acres)
Airport Operations/ Maintenance (~1.3 Acre)
Relocated Above Ground Self-Service 100LL Fuel Storage
Pedestrian Gate
Declaration of Environmental Use Restriction Area (~2.3 Acres)
Aircraft Wash Rack
S McQueen Rd
S Airport Blvd
Aviation Dr.
Germann Road
S Curtiss Way
E Ryan Rd
S Stinson Way
S Cooper Rd
Runway 4L-22R
Runway 4R-22L
DRAFT CONCEPT FOR DISCUSSION PURPOSES ONLY
LEGEND
Existing Airport Property Line
Taxiway Designation
Pavement/Building to be Removed
Ultimate Pavement
Ultimate Roads/Parking
Ultimate Building
Environmental Site
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SCALE IN FEET
Photo: Woolpert 11/2019

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6. Redevelopment of an approximately one-acre environmental site located northwest of the terminal building as apron pavement for aircraft tiedowns. This environmental site was previously used as a dump site for construction debris sometime between 1949 and 1964. The City of Chandler has determined that this site can be capped with asphalt and returned to useable airport property.

7. Reservation of approximately 20.5 acres of property south of Aviation Drive and split by S. Curtiss Way for small aircraft facilities development and redevelopment reserve. This could include new T-hangars, T-shades, apron, and a dedicated GA pilot's lounge.

8. Reservation of approximately 5.9 acres of property along Aviation Drive/S. Airport Boulevard northwest of the terminal for executive hangar development.

9. Reservation of approximately 11.4 acres of the old heliport site for non-aviation development, including the potential for a solar farm photovoltaic array. This site is subject to floodplain restrictions.

10. Reservation of approximately 4.8 acres of the old heliport site that is currently used for airport operations/maintenance for non-aviation development.

North Landside Alternative 1 Estimated Construction Cost

Item No.	Proposed Projects	Estimated Cost
	North Landside Developments	
1	New Terminal Building (16,000 FT)	$8,000,000
2	Relocated Above Ground Self-Service 100LL Fuel Storage	$800,000
3	Aircraft Wash Rack	$425,000
4	Shade Structures	$300,000
5	Parking Lot	$126,000
6	Pedestrian Gate	$5,000
	Utilities/Sitework	
7	Non-Aviation Development Reserve – Floodplain Restrictions	$4,470,000
8	Non-Aviation Development Reserve	$1,890,000
9	Airport Operations/Maintenance	$510,000
10	Executive Hangar Development Reserve	$2,320,000
11	Small Aircraft Facilities Development Reserve (12.4 Acres)	$4,870,000
12	Small Aircraft Facilities Development Reserve (5.2 Acres)	$2,320,000
13	Small Aircraft Facilities Redevelopment Reserve	$1,140,000
	Roadways	
14	New Roundabout	$300,000
	TOTAL	**$27,476,000**

Source: Dibble Engineering

NORTH LANDSIDE ALTERNATIVE 2

Depicted on **Exhibit 4F**, North Landside Alternative 2 focuses on providing a more diverse range of facilities on the north side, including areas for small aircraft facility development up to large-scale SASO or maintenance/repair/overhaul (MRO) operators. The features of North Landside Alternative 2 include:

1. Development of a new 16,000 sf terminal building adjacent to the ATCT. This site is closer to the runway and would give the terminal better visibility from the airfield. The existing parking lot at the ATCT could also be revamped to support the terminal building.

2. A roundabout is added to replace the intersection of S. Curtis Way and E. Ryan Road, which is a style consistent with the surrounding Chandler Airpark. A secured pedestrian gate would also be added to the perimeter fence providing access to the apron area.

3. The 100LL underground fuel storage tank currently located north of S. Airport Boulevard would be relocated and made an above ground tank in support of the self-service station on the terminal apron.

4. The existing terminal site would be redeveloped for airport operations/maintenance facilities. This site provides better access to airport facilities and is near airport administration offices in the new terminal building.

5. An aircraft wash rack is considered on the north side of the north apron along Aviation Drive.

6. Redevelopment of an approximately one-acre environmental site located northwest of the terminal building as apron pavement for aircraft tiedowns. This environmental site was previously used as a dump site for construction debris sometime between 1949 and 1964. The City of Chandler has determined that this site can be capped with asphalt and returned to useable airport property.

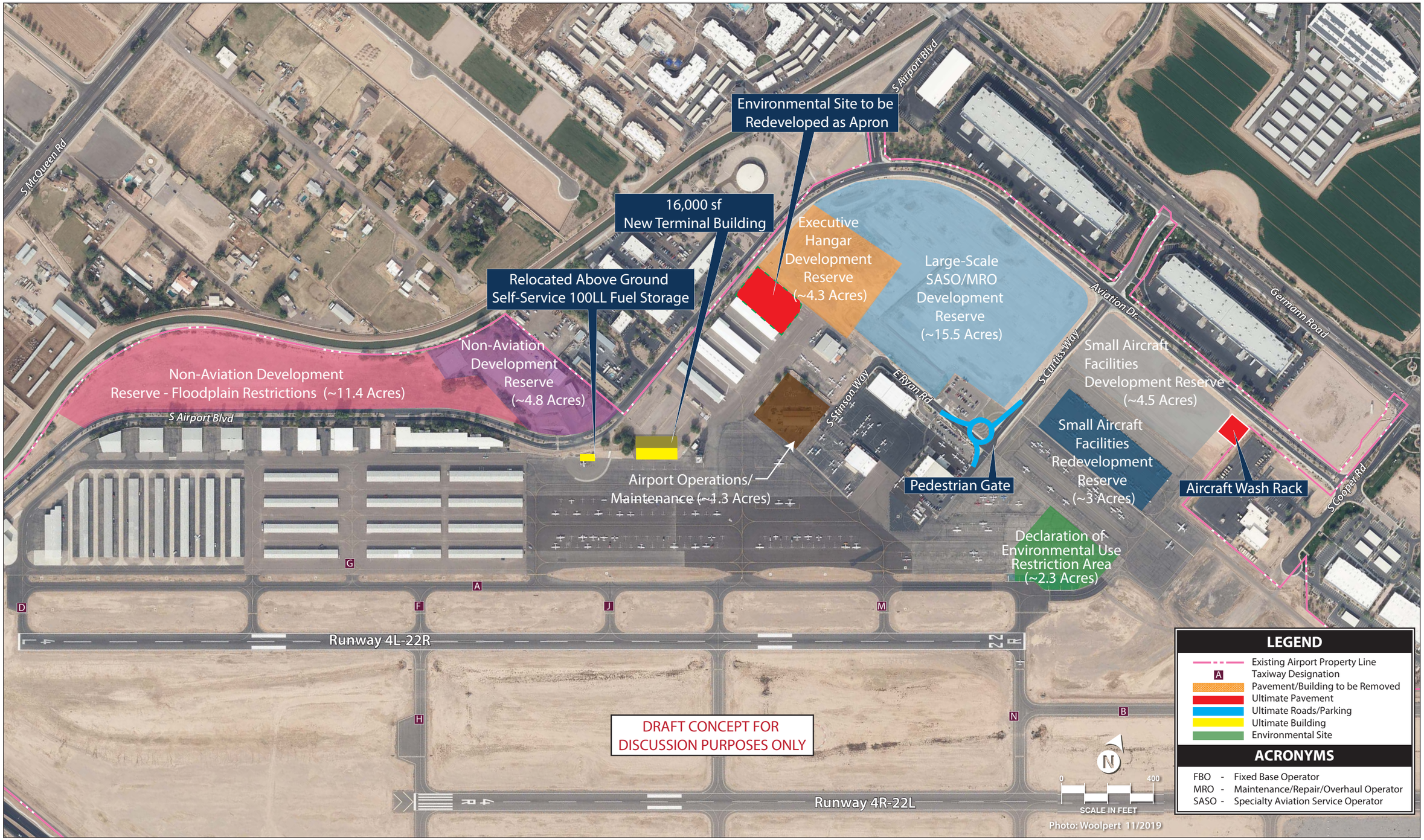
7. Reservation of approximately 7.5 acres of property on and near the north apron for small aircraft facilities development and redevelopment reserve. This could include new T-hangars, T-shades, apron, and a dedicated GA pilot's lounge.

8. Reservation of approximately 4.3 acres of property along Aviation Drive/S. Airport Boulevard northwest of the terminal for executive hangar development.

9. Reservation of approximately 15.5 acres north of the terminal and south of Aviation Drive for a large-scale SASO/MRO complex or an aircraft manufacturer.

10. Reservation of approximately 11.4 acres of the old heliport site for non-aviation development, including the potential for a solar farm photovoltaic array. This site is subject to floodplain restrictions.

11. Reservation of approximately 4.8 acres of the old heliport site that is currently used for airport operations/maintenance for non-aviation development.


S McQueen Rd
S Airport Blvd
Environmental Site to be Redeveloped as Apron
16,000 sf New Terminal Building
Relocated Above Ground Self-Service 100LL Fuel Storage
Executive Hangar Development Reserve (~4.3 Acres)
Large-Scale SASO/MRO Development Reserve (~15.5 Acres)
Aviation Dr.
Germann Road
S Cuffiss Way
E Ryan Rd
S Stinson Way
Small Aircraft Facilities Development Reserve (~4.5 Acres)
Non-Aviation Development Reserve - Floodplain Restrictions (~11.4 Acres)
Non-Aviation Development Reserve (~4.8 Acres)
S Airport Blvd
Airport Operations/ Maintenance (~1.3 Acres)
Pedestrian Gate
Small Aircraft Facilities Redevelopment Reserve (~3 Acres)
Aircraft Wash Rack
S Cooper Rd
Declaration of Environmental Use Restriction Area (~2.3 Acres)
G
A
D
F
J
M
Runway 4L-22R
22R
H
N
B
DRAFT CONCEPT FOR DISCUSSION PURPOSES ONLY
Runway 4R-22L
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SCALE IN FEET
Photo: Woolpert 11/2019
LEGEND
Existing Airport Property Line
A Taxiway Designation
Pavement/Building to be Removed
Ultimate Pavement
Ultimate Roads/Parking
Ultimate Building
Environmental Site
ACRONYMS
FBO - Fixed Base Operator
MRO - Maintenance/Repair/Overhaul Operator
SASO - Specialty Aviation Service Operator

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North Landside Alternative 2 Estimated Construction Cost

Item No.	Proposed Projects	Estimated Cost
	North Landside Developments	
1	New Terminal Building (16,000 FT)	$8,000,000
2	Relocated Above Ground Self-Service 100LL Fuel Storage	$800,000
3	Aircraft Wash Rack	$425,000
4	Shade Structures	$300,000
5	Pedestrian Gate	$5,000
	Utilities/Sitework	
6	Non-Aviation Development Reserve – Floodplain Restrictions	$4,470,000
7	Non-Aviation Development Reserve	$1,890,000
8	Airport Operations/Maintenance	$510,000
9	Executive Hangar Development Reserve	$1,690,000
10	Large-Scale SASO/MRO Development Reserve	$6,080,000
11	Small Aircraft Facilities Development Reserve	$1,770,000
12	Small Aircraft Facilities Redevelopment Reserve	$1,180,000
	Roadways	
13	New Roundabout	$300,000
	TOTAL	**$27,420,000**

Source: Dibble Engineering

NORTH LANDSIDE ALTERNATIVE 3

Depicted on **Exhibit 4G**, North Landside Alternative 3 considers relocating the terminal north of its current location and co-locating future FBO/SASO development. This would give more focus to servicing larger aircraft on the north side as opposed to the south side. The features of North Landside Alternative 3 include:

1. Development of a new 16,000 sf terminal building north of the existing location with taxiway access and adjacent apron. An adjacent vehicle parking lot would support the new terminal building as well as the surrounding FBO/SASO development sites. This site is further from the airfield and, based on how the FBO/SASO sites are developed, could make visibility an issue.

2. A roundabout is added to replace the intersection of S. Curtiss Way and E. Ryan Road, which is a style consistent with the surrounding Chandler Airpark. A secured pedestrian gate would also be added to the perimeter fence providing access to the apron area.

3. The 100LL underground fuel storage tank currently located north of S. Airport Boulevard would be relocated and made an above ground tank in support of the self-service station on the terminal apron.

4. An aircraft wash rack is considered adjacent to the ATCT, along with a dedicated GA pilot's lounge.

5. Redevelopment of an approximately one-acre environmental site located northwest of the terminal building as apron pavement for aircraft tiedowns. This environmental site was previously used as a dump site for construction debris sometime between 1949 and 1964. The City of Chandler has determined that this site can be capped with asphalt and returned to useable airport property.

6. Reservation of approximately 5.2 acres of property near the north apron for small aircraft facilities development and redevelopment reserve.

7. Reservation of approximately 4.1 acres of property along S. Curtiss Way for executive hangar development.

8. Reservation of approximately 15.6 acres of property surrounding the new terminal building FBO/SASO development.

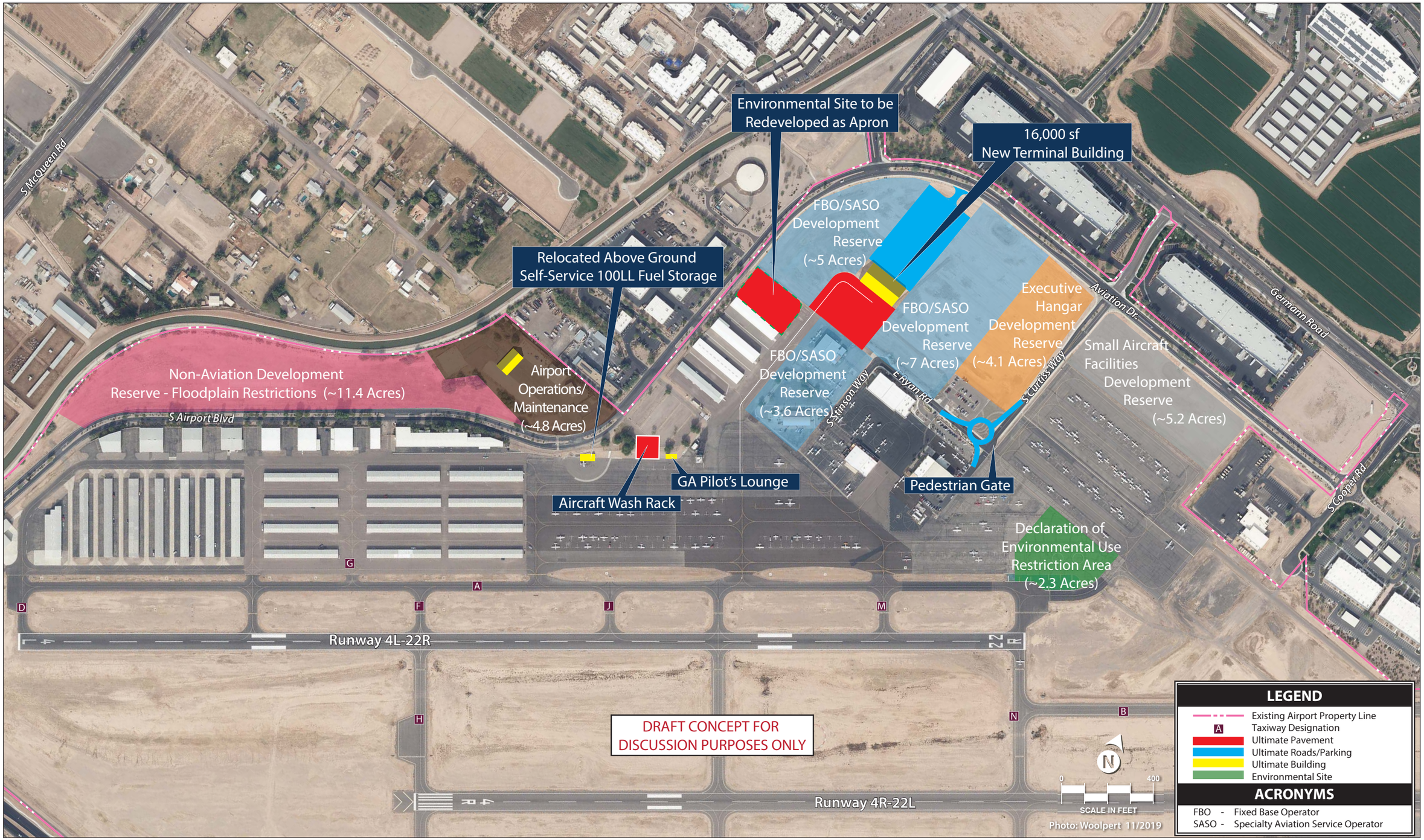
9. Reservation of approximately 11.4 acres of the old heliport site for non-aviation development, including the potential for a solar farm photovoltaic array. This site is subject to floodplain restrictions.

10. Reservation of approximately 4.8 acres of airport operations/maintenance facilities, including a new building for equipment storage and office space.

North Landside Alternative 3 Estimated Construction Cost

Item No.	Proposed Projects	Estimated Cost
	North Landside Developments	
1	New Terminal Building (16,000 FT)	$8,000,000
2	Relocated Above Ground Self-Service 100LL Fuel Storage	$800,000
3	Aircraft Wash Rack	$425,000
4	GA Pilot Lounge	$150,000
5	Shade Structures	$300,000
6	Parking Lot	$470,000
7	Pedestrian Gate	$5,000
	Utilities/Sitework	
8	Non-Aviation Development Reserve – Floodplain Restrictions	$4,470,000
9	Airport Operations/Maintenance	$1,890,000
10	FBO/SASO Development Reserve	$6,120,000
11	Executive Hangar Development Reserve	$1,610,000
12	Small Aircraft Facilities Development Reserve	$2,040,000
13	Small Aircraft Facilities Redevelopment Reserve	$1,180,000
	Roadways	
14	New Roundabout	$300,000
	TOTAL	**$27,760,000**

Source: Dibble Engineering


Environmental Site to be Redeveloped as Apron
16,000 sf New Terminal Building
Relocated Above Ground Self-Service 100LL Fuel Storage
FBO/SASO Development Reserve (~5 Acres)
FBO/SASO Development Reserve (~7 Acres)
FBO/SASO Development Reserve (~3.6 Acres)
Executive Hangar Development Reserve (~4.1 Acres)
Small Aircraft Facilities Development Reserve (~5.2 Acres)
Non-Aviation Development Reserve - Floodplain Restrictions (~11.4 Acres)
Airport Operations/ Maintenance (~4.8 Acres)
GA Pilot's Lounge
Aircraft Wash Rack
Pedestrian Gate
Declaration of Environmental Use Restriction Area (~2.3 Acres)
S McQueen Rd
S Airport Blvd
Aviation Dr.
Germann Road
S Stinson Way
E Ryan Rd
S Curtiss Way
S Cooper Rd
Runway 4L-22R
Runway 4R-22L
DRAFT CONCEPT FOR DISCUSSION PURPOSES ONLY
LEGEND
Existing Airport Property Line
Taxiway Designation
Ultimate Pavement
Ultimate Roads/Parking
Ultimate Building
Environmental Site
ACRONYMS
FBO - Fixed Base Operator
SASO - Specialty Aviation Service Operator
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SCALE IN FEET
Photo: Woolpert 11/2019

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SOUTH LANDSIDE ALTERNATIVE 1

Depicted on **Exhibit 4H**, South Landside Alternative 1 focuses on providing a mix of general aviation services catering to FBO/SASOs, executive hangars, and small aircraft facilities. This alternative does not include a new terminal facility with the assumption that the terminal would remain on the north side. The features of South Landside Alternative 1 include:

1. Development of a new self-service fuel station equipped with above ground storage tanks for 100LL and Jet A fuels. The station would be accessible to aircraft via a new taxilane from Taxiway C and to supply trucks via new surface roads extending from S. Cooper Road and E. Ryan Road.

2. Reservation of approximately 24.2 acres of property for small aircraft facilities. This includes T-hangars, T-shades, apron, and a dedicated GA pilot's lounge and wash rack.

3. Reservation of approximately 28.7 acres of property for executive hangar development.

4. Reservation of approximately 19.5 acres for FBO/SASO development.

South Landside Alternative 1 Estimated Construction Cost

Item No.	Proposed Projects	Estimated Cost
	South Landside Developments	
1	Self-Service Fuel Station	$800,000
	Utilities/Sitework	
2	Executive Hangar Development Reserve	$11,260,000
3	Small Aircraft Facilities Development Reserve (4.9 Acres)	$1,930,000
4	Small Aircraft Facilities Development Reserve (19.3 Acres)	$7,570,000
5	FBO/SASO Development Reserve	$7,650,000
	Roadways	
6	New Roundabout	$400,000
7	Additional Roadway	$4,200,000
	TOTAL	**$33,010,000**

Source: Dibble Engineering

SOUTH LANDSIDE ALTERNATIVE 2

Depicted on **Exhibit 4J**, South Landside Alternative 2 considers the relocation of the terminal building and focusing on accommodating more transient activity on the south side. The features of South Landside Alternative 2 include:

1. Development of a new 16,000 sf terminal building near the Runway 4R threshold and a co-located self-service fuel station for both Jet A and 100LL fuels. A terminal apron fronts the terminal to the north with a vehicle parking lot to the south.

2. Reservation of approximately 21.1 acres of property for small aircraft facilities. This includes T-hangars, T-shades, apron, and a dedicated GA pilot's lounge and wash rack.

3. Reservation of approximately 21.1 acres of property for executive hangar development.

4. Reservation of approximately 14.6 acres for FBO/SASO development.

5. Reservation of approximately 8.4 acres for a large-scale SASO operation, such as an MRO or aircraft manufacturer.

South Landside Alternative 2 Estimated Construction Cost

Item No.	Proposed Projects	Estimated Cost
	South Landside Developments	
	Utilities/Sitework	
1	FBO/SASO Development Reserve	$3,610,000
2	GA Terminal/Apron/Fuel Facilities Reserve	$3,650,000
3	Large-Scale SASO Development Reserve	$3,300,000
4	Small Aircraft Facilities Development Reserve	$16,550,000
5	FBO/SASO Development Reserve	$7,650,000
	Roadways	
6	Additional Roadway	$4,340,000
	TOTAL	**$39,100,000**

Source: Dibble Engineering

SOUTH LANDSIDE ALTERNATIVE 3

Depicted on **Exhibit 4K**, South Landside Alternative 3 is like the previous alternative as it also considers relocating the terminal to the south side. This alternative focuses more on dedicating land for FBO/SASO and executive hangar development with less focus on small aircraft facilities. The features of South Landside Alternative 3 include:

1. Development of a new 16,000 sf terminal building near the Runway 4R threshold with apron frontage to the north and vehicle parking to the south. The site would also include a self-service fuel station for Jet A and 100LL fuels.

2. Reservation of approximately 19.9 acres of property for small aircraft facilities. This includes T-hangars, T-shades, apron, and a dedicated GA pilot's lounge and wash rack.

3. Reservation of approximately 24.6 acres of property for executive hangar development.

4. Reservation of approximately 17.1 acres for FBO/SASO development.


F
J
M
Runway 4L-22R
22R
H
L
N
B
P
Q
4R
Runway 4R-22L
22L
Self-Service Fuel Station
C
Environmental Site (~10.7 Acres)
Executive Hangar Development Reserve (~28.7 Acres)
Small Aircraft Facilities Development Reserve (~4.9 Acres)
FBO/SASO Development Reserve (~19.5Acres)
Small Aircraft Facilities Development Reserve (~19.3 Acres)
S Heliport Way
E Queen Creek Rd
S Cooper Rd
E Ryan Rd
DRAFT CONCEPT FOR DISCUSSION PURPOSES ONLY
LEGEND
Existing Airport Property Line
A Taxiway Designation
Ultimate Pavement
Ultimate Roads/Parking
Ultimate Building
ABBREVIATIONS
FBO - Fixed Base Operator
SASO - Specialty Aviation Service Operator
N
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SCALE IN FEET
Photo: Woolpert 11/2019

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F
J
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Runway 4L-22R
22R
H
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4R
Runway 4R-22L
22L
C
FBO/SASO
Development
Reserve (~14.6 Acres)
Environmental Site
(~10.7 Acres)
Large-Scale
SASO Development
Reserve (~8.4 Acres)
Small Aircraft
Facilities Development
Reserve (~21.1 Acres)
Executive Hangar
Development Reserve
(~21.1 acres)
Terminal Building
Self-Service
Fuel Station
E Queen Creek Rd
S Cooper Rd
S Heliport Way
E Ryan Rd
DRAFT CONCEPT FOR
DISCUSSION PURPOSES ONLY
LEGEND
Existing Airport Property Line
A Taxiway Designation
Ultimate Pavement
Ultimate Roads/Parking
Ultimate Building
ABBREVIATIONS
FBO - Fixed Base Operator
SASO - Specialty Aviation Service Operator
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Photo: Woolpert 11/2019

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F
J
M
Runway 4L-22R
22R
4L
H
L
N
B
P
Runway 4R-22L
22L
C
FBO/SASO Development Reserve (~11.4 Acres)
Environmental Site (~10.7 Acres)
FBO/SASO Development Reserve (~5.7 Acres)
Executive Hangar Development Reserve (~9.5 Acres)
Executive Hangar Development Reserve (~15.1 Acres)
Small Aircraft Facilities Development Reserve (~19.9 Acres)
Terminal Building
Self-Service Fuel Station
E Queen Creek Rd
S Cooper Rd
S Heliport Way
E Ryan Rd
DRAFT CONCEPT FOR DISCUSSION PURPOSES ONLY
LEGEND
Existing Airport Property Line
A Taxiway Designation
Ultimate Pavement
Ultimate Roads/Parking
Ultimate Building
ACRONYMS
FBO - Fixed Base Operator
SASO - Specialty Aviation Service Operator
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SCALE IN FEET
Photo: Woolpert 11/2019

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South Landside Alternative 3 Estimated Construction Cost

Item No.	Proposed Projects	Estimated Cost
	South Landside Developments	
	Utilities/Sitework	
1	FBO/SASO Development Reserve	$5,730,000
2	GA Terminal/Apron/Fuel Facilities Reserve	$6,320,000
3	Executive Hangar Development Reserve (28.7 Acres)	$11,260,000
4	Executive Hangar Development Reserve (15.1 Acres)	$5,920,000
5	Small Aircraft Facilities Development Reserve	$7,490,000
	Roadways	
6	New Roundabout	$400,000
7	Additional Roadway	$4,900,000
	TOTAL	**$42,020,000**

Source: Dibble Engineering

LANDSIDE SUMMARY

The landside alternatives presented look to accommodate an array of aviation activities that either currently occur or could be expected to occur at CHD in the future. There is demand for new facilities at CHD and with a changing fleet mix of aircraft that includes more sophisticated aircraft, airport management will need to determine how to develop its property in an organized and thoughtful way. Each of the development options considers a long-term vision that would, in some cases, extend beyond the 20-year scope of this master plan. Nonetheless, it is beneficial to provide a long-term vision for the airport for future generations.

SUMMARY

This chapter is intended to present analysis of various options that may be considered for specific airport elements. The need for alternatives is typically spurred by projections of aviation demand growth and/or by the need to resolve non-standard airport elements. FAA design standards are frequently updated with the intent of improving the safety and efficiency of aircraft movements on and around airports, which can lead to certain pavement geometries now being classified as non-standard when previously they qualified to meet standard.

Several development alternatives related to both the airside and the landside have been presented. On the airside, the major considerations involve extending Runway 4R-22L and improving airfield geometry to meet proper taxiway design standards. For the landside, alternatives were presented to consider additional aviation development on the north and south sides of the airport. As the airport's fleet mix transitions to include more jets and turboprops, it will be important to clearly delineate development areas for facilities to accommodate those aircraft. Segregating jet and turboprop traffic from small aircraft operators contributes to operational safety and presents a more organized and efficient airport.

The next step in the master plan development process is to arrive at a recommended development concept. Participation of the PAC and the public will be important considerations. Additional consultation with the FAA may also be required. Once a consolidated development plan is identified, a 20-year capital improvement program, with a list of prioritized projects tied to aviation demand and/or necessity, will be presented. Finally, a financial analysis will be presented to identify potential funding sources and to show airport management what local funds will be necessary to implement the plan.



Chapter Five

RECOMMENDED MASTER PLAN CONCEPT

The airport master plan for Chandler Municipal Airport (CHD) has progressed through a systematic and logical process with a goal of formulating a recommended 20-year development plan. The process began with an evaluation of existing and future operational demand, which aided in creating an assessment of future facility needs and were used to develop alternative facility plans. Each step in the planning process included the development of draft working papers, which have been presented and discussed at previous Planning Advisory Committee (PAC) meetings and public information workshops and are available on the project website (www.chandler.airportstudy.com).

In the previous chapter, several development alternatives were analyzed to explore options for the future growth and development of CHD. The development alternatives have been refined into a single recommended concept for the master plan. This chapter describes, in narrative and graphic form, the recommended direction for the future use and development of CHD.

The recommended concept provides the ability to meet the disparate needs of the array of airport operators. The goal of this plan is to ensure the airport can continue, and even improve, in its role of serving general aviation operators and military aviation in and around the City of Chandler and the Phoenix metropolitan area. The plan has been specifically tailored to support existing and future growth in all forms of potential aviation activity as the demand materializes.

The recommended airport development concept, as shown on **Exhibit 5A**, presents a long-term configuration for the airport, which preserves and enhances the role of the airport, while meeting Federal Aviation Administration (FAA) design standards. The phased implementation of the recommended development concept will be presented in Chapter Six. The following sections describe the key details of the recommended master plan concept.

AIRSIDE CONCEPT

The airside plan generally considers those improvements related to the runway and taxiway system and navigational aids.

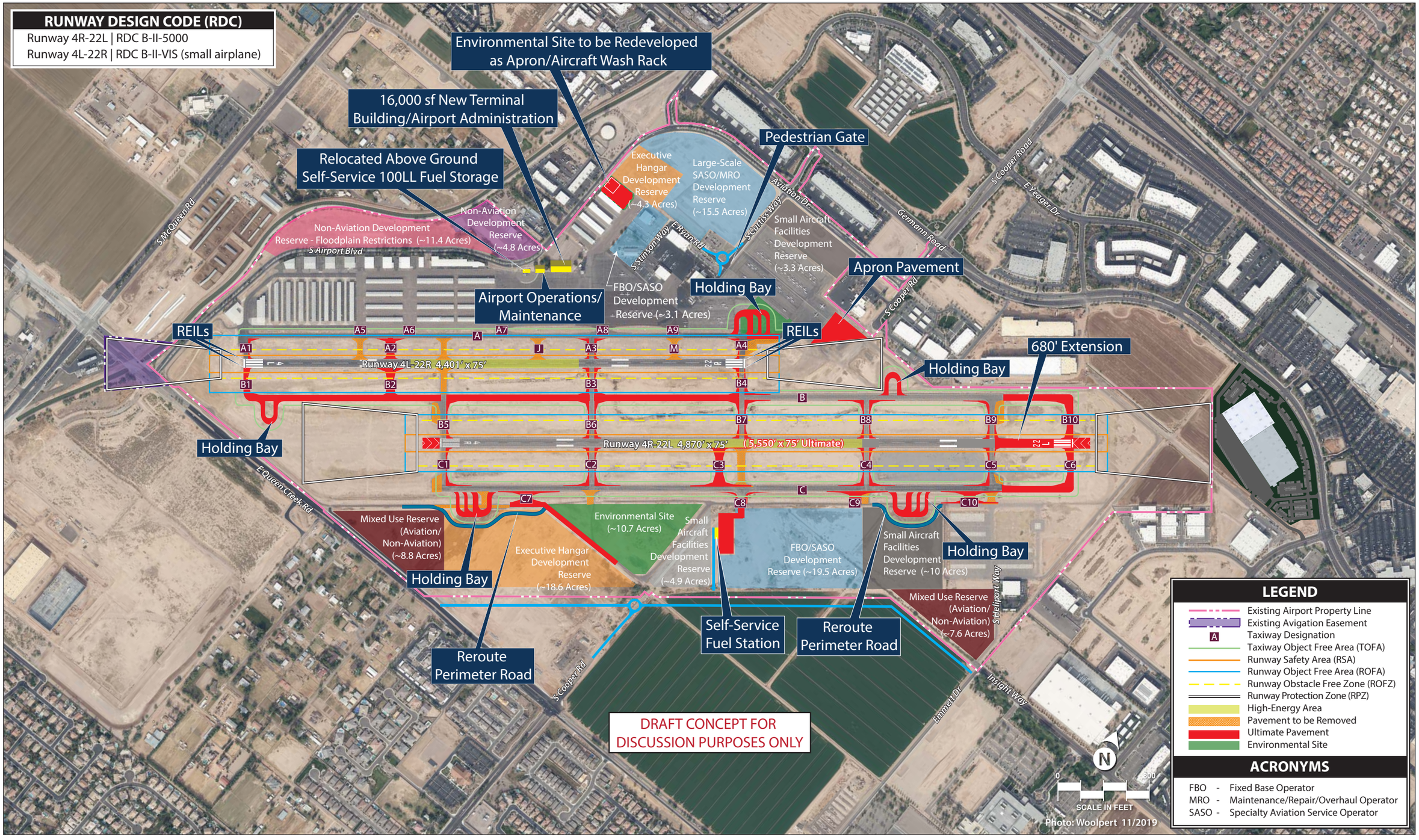
DESIGN STANDARDS

The FAA has established design criteria to define the physical dimensions of runways and taxiways, as well as the imaginary surfaces surrounding them, to enhance the safe operation of aircraft at airports. These design standards also define the separation criteria for the placement of landside facilities.

As discussed previously, the design criteria primarily center on the airport's critical design aircraft. The critical aircraft is the most demanding aircraft, or family of aircraft, which currently, or are projected to, conduct 500 or more operations (takeoffs and landings) per year at the airport. Factors included in airport design are an aircraft's wingspan, approach speed, tail height and, in some cases, the instrument approach visibility minimums for each runway. The FAA has established the Runway Design Code (RDC) to relate these design aircraft factors to airfield design standards. The most restrictive RDC is also considered the overall Airport Reference Code (ARC).

While airfield elements, such as safety areas, must meet design standards associated with the applicable RDC, landside elements can be designed to accommodate specific categories of aircraft. For example, an airside taxiway must meet taxiway object free area (TOFA) for all aircraft types using the taxiway, while the taxilane to a T-hangar area only needs to meet width standards for smaller single and multi-engine piston aircraft expected to utilize the taxilane.

The applicable RDC and critical design aircraft for each runway at CHD in the existing and ultimate conditions, as established in Chapter Two, are summarized in **Table 5A**.


RUNWAY DESIGN CODE (RDC)
Runway 4R-22L | RDC B-II-5000
Runway 4L-22R | RDC B-II-VIS (small airplane)
Environmental Site to be Redeveloped as Apron/Aircraft Wash Rack
16,000 sf New Terminal Building/Airport Administration
Relocated Above Ground Self-Service 100LL Fuel Storage
Pedestrian Gate
Executive Hangar Development Reserve (~4.3 Acres)
Large-Scale SASO/MRO Development Reserve (~15.5 Acres)
Non-Aviation Development Reserve - Floodplain Restrictions (~11.4 Acres)
Non-Aviation Development Reserve (~4.8 Acres)
Small Aircraft Facilities Development Reserve (~3.3 Acres)
Apron Pavement
Airport Operations/ Maintenance
FBO/SASO Development Reserve (~3.1 Acres)
Holding Bay
REILs
680' Extension
Runway 4L-22R 4,401' x 75'
Runway 4R-22L 4,870' x 75' (5,550' x 75' Ultimate)
Holding Bay
Holding Bay
Mixed Use Reserve (Aviation/ Non-Aviation) (~8.8 Acres)
Executive Hangar Development Reserve (~18.6 Acres)
Environmental Site (~10.7 Acres)
Small Aircraft Facilities Development Reserve (~4.9 Acres)
FBO/SASO Development Reserve (~19.5 Acres)
Small Aircraft Facilities Development Reserve (~10 Acres)
Holding Bay
Mixed Use Reserve (Aviation/ Non-Aviation) (~7.6 Acres)
Reroute Perimeter Road
Self-Service Fuel Station
Reroute Perimeter Road
DRAFT CONCEPT FOR DISCUSSION PURPOSES ONLY
S McQueen Rd
E Queen Creek Rd
S Airport Blvd
S Stinson Way
E Ryan Rd
S Curtiss Way
Aviation Dr
Germann Road
S Cooper Road
E Yeager Dr
S Cooper Rd
S Heliport Way
Emmett Dr
Insight Way
LEGEND
Existing Airport Property Line
Existing Avigation Easement
Taxiway Designation
Taxiway Object Free Area (TOFA)
Runway Safety Area (RSA)
Runway Object Free Area (ROFA)
Runway Obstacle Free Zone (ROFZ)
Runway Protection Zone (RPZ)
High-Energy Area
Pavement to be Removed
Ultimate Pavement
Environmental Site
ACRONYMS
FBO - Fixed Base Operator
MRO - Maintenance/Repair/Overhaul Operator
SASO - Specialty Aviation Service Operator
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SCALE IN FEET
Photo: Woolpert 11/2019

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TABLE 5A
Airport and Runway Classifications
Chandler Municipal Airport

	Runway 4R-22L (existing/ultimate)	Runway 4L-22R (existing/ultimate)
Airport Reference Code (ARC)	B-II	B-II (small airplane)
Critical Aircraft (Typ.)	Beechcraft King Air 200/300/350 (existing) Cessna Citation Jet CJ4/Citation X (ultimate)	Beechcraft King Air C/F90
Runway Design Code (RDC)	B-II-5000	B-II-VIS (small airplane)
Approach Reference Code (APRC)	D/IV/5000 and D/V/5000	B/II/VIS
Departure Reference Code (DPRC)	D/IV and D/V	B/II
Taxiway Design Group (TDG)	2	2

Source: FAA AC 150/5300-13A, Airport Design

PRIMARY RUNWAY 4R-22L

Runway Designation | A runway's designation is based upon its magnetic headings, which are determined by the magnetic declination for the area. The magnetic declination in the area of CHD is 10° 2'E1. The primary runway is oriented northeast/southwest with a true heading of 049°/229°. Adjusting for the magnetic declination, the current magnetic heading of the runway is 039°/219°. As a result, ***Runway 4R-22L should maintain this designation.***

Runway Dimensions | The primary runway is currently 4,870 feet long and 75 feet wide, meeting RDC B-II-5000 design standards. At these current dimensions, the runway is capable of safely accommodating all small general aviation aircraft. Business jets can also operate on this runway under moderate loading conditions with shorter trip lengths and during cool to warm temperatures. Longer trips and hot summer days significantly limit business jet capabilities. As a general aviation reliever airport, CHD's role is to relieve the larger airports in the region of general aviation traffic, including business jets. Increasing the utility of the runway to safely accommodate business jets will also expand CHD's market potential, attracting new itinerant operators, based aircraft, and businesses that provide services to business jet clients. For these reasons, ***a 680-foot extension of the runway is planned to achieve an ultimate length of 5,550 feet***.

Connected actions to the extension of Runway 4R-22L include the following items:

- Extensions to Taxiway B and Taxiway C to the ultimate runway end.
- Relocation of the PAPI-4 and runway end identifier light (REIL) units on the Runway 22L end.
- All new runway pavement would be equipped with medium intensity runway edge lighting (MIRL).
- The ultimate runway's declared distances[2] (TORA, TODA, ASDA, and LDA) would equal the full pavement length of 5,550 feet.

1 Source: NOAA, 02/06/2020.
2 Declared distances are described in detail in Chapter Four, Airside Alternatives section.

The runway width of 75 feet meets the RDC B-II-5000 design standard. No change in runway width is planned.

Pavement Strength | Runway 4R-22L is currently strength-rated for up to 30,000 pounds for single wheel loading aircraft (SWL), which is adequate for all small aircraft and most small to mid-sized business jets. The critical design aircraft (Cessna Citation Jet CJ4 and Beechcraft King Air 200/300/350) have maximum takeoff weights (MTOWs) of 30,000 pounds or less. The Cessna Citation X has a MTOW of 36,100 pounds on a dual-wheel main gear configuration, which also can be accommodated by the existing pavement strength on a regular basis. The existing strength rating is adequate for all aircraft operating at CHD currently and in the future. Therefore, ***no plans to strengthen the primary runway are recommended.***

Instrument Approach Procedures | Runway 4R has two published one-mile visibility instrument approach procedures. Runway 22L is a visual-only runway. The plan includes maintaining instrument approach capabilities for Runway 4R at a one-mile visibility and coordinating with the FAA on establishing one-mile visibility procedures to Runway 22L. No new on-site equipment is needed to establish a GPS-based approach procedure to Runway 22L, and the size of the associated Runway Protection Zone (RPZ), would not be changed.

Runway Protection Zones (RPZs) | The existing one mile or greater visibility minimum RPZs for both ends of the runway encompass 13.77 acres. The RPZs are located on property owned by the airport. If the runway is extended as planned to the northeast, the Runway 22L RPZ will shift in the same direction but will still be located entirely on property owned by the airport. The existing perimeter service road will ultimately pass through the RPZ; however, this is not a public-use road, so it is not considered an incompatible land use.

Blast Pads | The blast pads at the ends of the runway are undersized. The plan includes expanding the blast pads to 95 feet wide and 150 feet long to meet design standards.

PARALLEL RUNWAY 4L-22R

Runway Designation | Similar to the primary runway, Runway 4L-22R's current magnetic heading, accounting for magnetic declination, is 039°/219°. Therefore, the existing designation should be maintained.

Runway Dimensions | The runway is currently 4,401 feet long and 75 feet wide. These dimensions adequately accommodate the small aircraft this runway is intended to serve. Therefore, ***no modifications to the runway dimensions are currently justified or planned.***

Pavement Strength | The runway is currently strength-rated for up to 30,000 pounds for SWL aircraft. This strength rating is more than adequate for the types of aircraft currently using, and planned to use, the runway, which are small aircraft weighing 12,500 pounds or less.

Instrument Approach Procedures | Both ends of this runway are visual-only, meaning there are no published instrument approach procedures available. The plan allows for the possibility of establishing GPS-

based approach procedures with one-mile or greater visibility minimums. These types of procedures do not require the installation of on-site equipment and would not alter the dimensions of the RPZs. If instrument approach procedures are established on this runway, markings will need to be improved to non-precision markings by adding threshold markings.

Runway Protection Zones (RPZs) | The RPZ dimensions for the parallel runway will remain the same as they are currently, at 8.035 acres. A portion of the Runway 4L RPZ extends beyond property owned by the airport over E Queen Creek Road; however, this property is controlled by an avigation easement. There are no plans to extend the runway or alter its design standards; therefore, E Queen Creek Road can be allowed to remain within the RPZ. The Runway 22R RPZ is located entirely on property owned by the airport without incompatibilities.

Visual Approach Aids | The parallel runway is not currently equipped with Runway End Identifier Lights (REILs). The plan includes adding REILs at both ends of the runway to improve pilot situational awareness.

TAXIWAY IMPROVEMENTS

Taxiway Design | The entirety of the CHD taxiway system is planned to meet Taxiway Design Group (TDG) 2 standards. Many of the taxiway intersections on the airfield do not currently meet proper taxiway fillet design standards. Taxiway fillets are tapered pavement sections at intersections that allow aircraft to turn while maintain taxiing speed and obstruction clearance. Additional taxiway fillet pavement to meet design standards are depicted on **Exhibit 5A**.

Taxiway Nomenclature | Current taxiway designations do not meet FAA Engineering Brief (EB) 89, *Taxiway Nomenclature Convention* standards. According to the EB, stub taxiways associated with a parallel taxiway should be designated with a letter and number, such as A1, A2, A3, etc., beginning with the northernmost stub for north/south taxiways and starting with the westernmost stub for east/west taxiways. Ultimate taxiway designations that meet the EB standards, along with the additional taxiway extensions/improvements, are identified on **Exhibit 5A**.

Taxiway A | Taxiway A, the full-length parallel taxiway supporting parallel Runway 4L-22R, is 40 feet wide, which exceeds the TDG 2 width standard of 35 feet. Improvements planned for Taxiway A and its connectors include removing pavement sections of Taxiway F to eliminate direct-access from the apron to the runway. New connecting Taxiway A2 is planned to replace the portion of Taxiway F that is being removed.

The southwest portion of Taxiway A from Taxiway A1 to A7 is separated from the T-hangar area edge taxilane by 74 feet, which meets only Airplane Design Group (ADG) I separation standards (ADG II standards require separation of 105 feet). As a result, ADG II aircraft should use caution in this area to ensure wingtip clearance is maintained with other aircraft. **Figure 5A** depicts the ADG I limitation area.

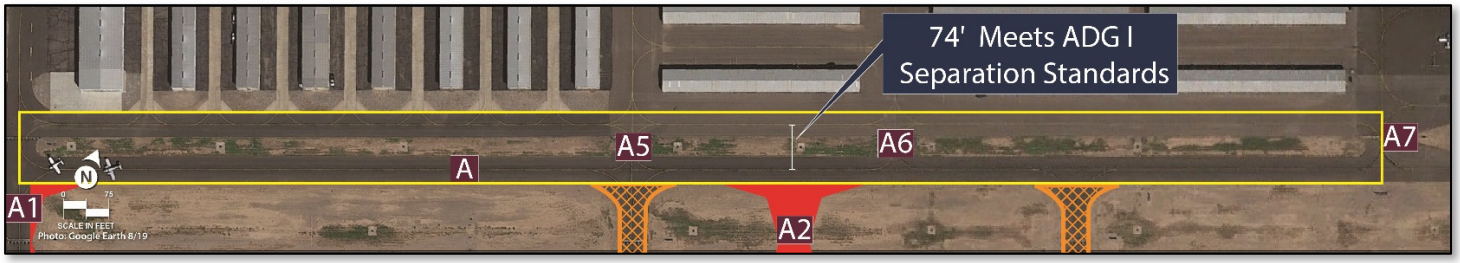


FIGURE 5A – TAXIWAY A ADG I SEPARATION AREA

Taxiway B | Taxiway B is located between the two runways and is 40 feet wide. Taxiway B is planned to be extended to the northeast and southwest to coincide with the extension to Runway 4R-22L and to provide for improved airfield circulation. For aircraft taxiing to the Runway 22L end from the north side, there is currently only one access route that does not require multiple runway crossings. The southwest extension of Taxiway B will create a full-length parallel for both runways and multiple routes for aircraft to access the Runway 22L end from the north side without having to cross both runways. The expansion of Taxiway B is also planned in phases to alleviate congestion issues at the Runway 22R threshold that has resulted in Hot Spot #1. All new Taxiway B pavement is planned to be equipped with LED medium intensity taxiway lighting (MITL) and airfield signage.

Taxiway C | Taxiway C is the 40-foot-wide south parallel taxiway to the primary runway. This taxiway is planned to be extended to the northeast to coincide with the runway extension. Existing Taxiway N, which is planned to be re-designated as part of the taxiway nomenclature change, is planned to be relocated south of Runway 4R-22L. This section of taxiway pavement will be shifted to the southwest to eliminate a crossing intersection in the high-energy area of the runway. The shifted connector will ultimately be designated Taxiway C3.

Taxiway Geometry Improvements | Previous chapters have discussed non-standard taxiway geometry issues at CHD, including where taxiways provide direct access from the apron area to the runway and where taxiways intersect with runways in the high-energy area. Existing direct-access taxiways include: Taxiway F (to the southwest end of Runway 4L), M (to the northeast end of Runway 22R), and Q (to the Runway 22L threshold). The plan includes removing pavement sections on these taxiways to eliminate runway access. Specific changes are described in the bullets below:

- The portion of Taxiway F pavement that connects Taxiway A to Runway 4L-22R will be removed and relocated to the east to become ultimate Taxiway A2.
- Taxiway J is located approximately 475 feet from Taxiway L (ultimate A3). As previously mentioned, taxiway exits should be spaced 750 feet or greater to effect capacity. Since it does not meet this spacing recommendation, it is planned for removal.
- Taxiway M (ultimate A9), between Taxiway A and the runway is planned to be removed to eliminate the direct-access point. The connection from the apron area to Taxiway A will remain. Taxiway M is located less than 750 feet from Taxiway L (ultimate A3) and Taxiway N (ultimate A4). Taxiway exits should be spaced 750 feet or greater to effect capacity. Since it does not meet this spacing recommendation, it is planned for removal.

- Taxiway Q (ultimate C5) between Taxiway C and the heliport apron will be removed. A new connecting taxiway (C10) is planned to be constructed 100 feet west to create a new access point to the heliport apron.

Holding Bays | The traditional holding aprons on the airfield are now considered non-standard since the wide expansive pavement area makes signage and lighting more difficult for pilots to see, which can lead to pilot confusion near the entrance to a runway. Therefore, the plan includes eliminating the existing holding aprons and replacing them with taxiway holding bays. Holding bays have clear entrance/exit points and independent parking areas separated by islands. Single-lane holding bays are planned for the west end of Taxiway B at the Runway 4L threshold, and on Taxiway B east of the Runway 22R RPZ. Multi-lane holding bays are planned for the east end of Taxiway A[3] and on the south side of Taxiway B near the runway ends. The holding bays on the south side will encroach upon the existing perimeter service road. The plan includes rerouting the perimeter service road in these areas so that it does not pass through the taxiway object free area (TOFA). Each holding bay is designed to accommodate ADG II aircraft.

LANDSIDE CONCEPT

The primary goal of landside facility planning is to provide adequate space to meet reasonably anticipated general aviation needs, while also optimizing operational efficiency and land use. Achieving these goals yields a development scheme that segregates functional uses while maximizing the airport's revenue potential. The CHD landside concept reflects generalized land use areas as opposed to specific facility/hangar layouts, which are likely to change depending on the needs of the developer and its target customers.

The key issues to be addressed in the landside areas at CHD are typical of most general aviation airports and include providing an expanded terminal services facility, increasing hangar and apron capacities, expanding Jet A fuel storage capacity, and adding amenities to accommodate existing users and attract new users.

As a reminder, all general aviation-related development, such as new hangar construction, should occur only as dictated by demand. The recommended concept is intended to be used strictly as a guide for CHD staff when considering new developments.

Sections below describe reserving portions of airport property for non-aviation uses. Generally, airport property is subject to Airport Improvement Program (AIP) grant assurances; therefore, CHD will need to request a release of these properties of federal obligations by the FAA. Once a release of federal obligation is issued by the FAA, CHD would be able to lease or sell these certain properties to support revenue diversification and generation. The FAA Reauthorization Act of 2018, Section 163 changed how the FAA's Office of Airport's staff reviews and considers the release of airport property for non-aviation uses. The section focuses FAA's review and approval of Airport Layout Plans (ALPs) to those portions of the ALP that materially impact the safe and efficient operation of airports; the safety of people and property on the ground adjacent to the airport; and the value of prior Federal investments to a significant extent. In effect, this new guidance is intended to ease the process of gaining FAA approval of land releases.

3 This site is an existing Declaration of Environmental Use Restriction (DEUR) site that has already been paved. This project repurposes that pavement as a holding bay.

NORTH SIDE

The north side concept is depicted in **Figure 5B**. Features of the north side concept are described below.

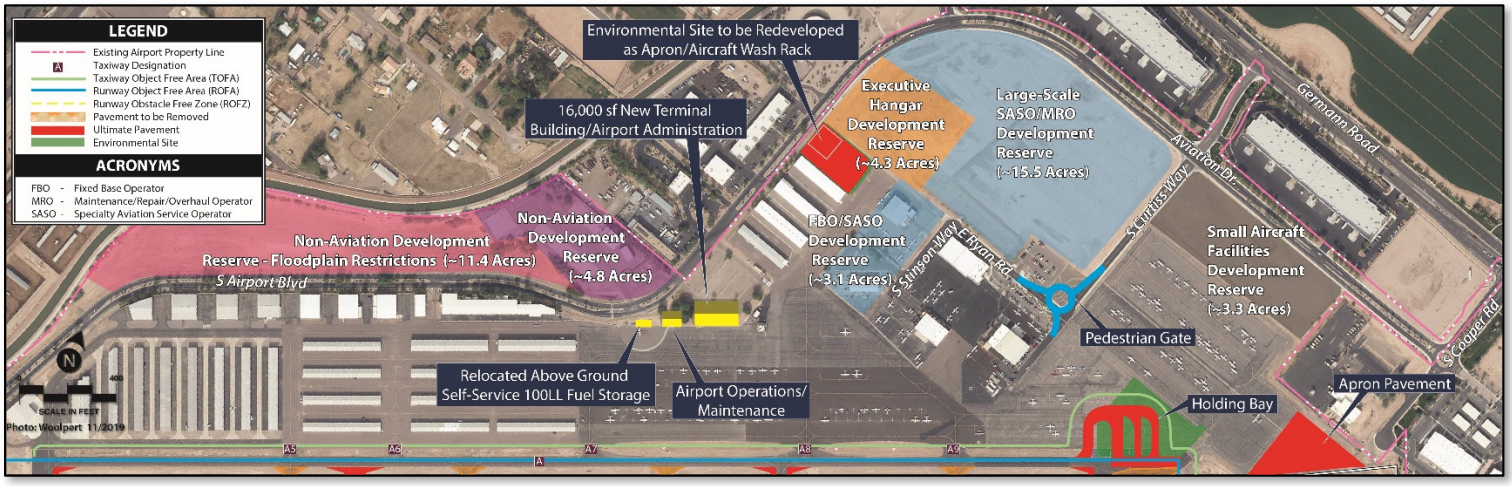


FIGURE 5B – NORTH LANDSIDE DEVELOPMENT CONCEPT

Terminal Building | The alternatives analysis considered several options for development of the north and south sides of the airfield. Of most importance was the location for a new terminal building that would provide a larger and more modern facility for pilot and passenger amenities, as well as offices for airport administration. As the focal point for landside facilities, the location of the terminal building influences surrounding development that would cater to transient operators, such as fixed base operators (FBOs) and specialized aviation service operators (SASOs). Consideration was given to locating the terminal building on the south side of the airfield adjacent to the primary runway, which is capable of accommodating larger aircraft; it was ultimately determined, however, that south-side development is not likely to occur for several years, and the additional supporting FBO/SASO activity has already been established on the north side. Therefore, a new 16,000 square foot (sf) terminal facility is planned to be developed on the north side adjacent to the existing airport traffic control tower (ATCT). This site has frontage to the terminal apron that makes it highly visible from the airfield and takes advantage of an existing vehicle parking lot that is currently underutilized. Utility infrastructure is also already in place in this site to accommodate a new terminal building.

Airport Operations/Maintenance | Airport maintenance equipment is currently housed in a hangar on the old heliport site north of S. Airport Boulevard. It is the desire of airport management to relocate maintenance facilities near the new terminal building to provide a consolidated airport administrative complex. Being located adjacent to the new terminal would also eliminate the need for operations and maintenance personnel to cross a public road and improve responsiveness to airfield issues. The planned operations/maintenance facility is located immediately west of the new terminal building along the terminal apron.

Fuel Storage | The bulk of fuel storage capacity at CHD is provided by the airport's FBO; however, the City of Chandler has a 12,000-gallon 100LL underground storage tank located adjacent to the existing maintenance/operations facility along S. Airport Boulevard. The self-service distribution system for this tank is

located south of S. Airport Boulevard on the terminal apron. Underground storage tanks are susceptible to leaking, which can create environmental hazards, so it is preferred to replace the underground tank with an above ground tank that is equipped with spill containment. The plan includes eliminating the existing underground tank and replacing it with an above ground fuel storage tank on the terminal apron adjacent to the existing self-service fuel distribution system.

Apron Expansion | There is currently approximately 235,854 square yards (sy) of apron pavement at CHD. Additional apron capacity is needed over the course of the next 20 years to accommodate growth in based aircraft, as well as spaces for transient operators. Much of the flight line on the north side has already been developed with apron pavement or for hangars. The plan includes adding approximately 4,700 sy of new pavement on an environmental site north of the existing terminal building adjacent to Hangar AG. The 1-acre environmental site was previously used as a dump site for construction debris sometime between 1949 and 1964. The City of Chandler has determined this site can be capped with asphalt and returned to useable airport property. This new apron space provides new aircraft parking spaces and a site for a potential future aircraft wash rack. The taxilane access to this site allows for up to ADG II aircraft.

FBO/SASO Development | CHD's current FBOs and SASOs are all located on the north side of the airfield. The plan includes reserving vacant space and redeveloping the existing terminal area for new or expanded FBO/SASO facilities and activities. The existing terminal facility and parking lot, along with an adjacent conventional hangar that is currently vacant, makes up an approximately 3.1-acre redevelopment site that could be developed with larger (10,000+ sf) conventional hangars and apron space. The proximity to the new terminal site would also make this site convenient for servicing transient operators. An additional 15.5 acres of undeveloped property along Aviation Drive has been reserved for a large-scale SASO or maintenance/repair/overhaul (MRO) operations. This parcel size provides for a future developer to construct any type of facility needed for a major operation, including an aircraft manufacturer.

Executive Hangar Development | Executive hangars are typically conventional-style hangars that provide storage capacities larger than a typical T-hangar, up to 10,000 sf. This style of hangar can accommodate a single large aircraft or multiple small aircraft. The plan reserves approximately 4.3 acres for executive hangar development, including associated taxilanes and vehicle access roads, north of the terminal on undeveloped property along Aviation Drive.

Small Aircraft Facilities Development | Small aircraft makeup the bulk of the based aircraft and operations at CHD. The type of facilities that cater to small aircraft are T-hangars, shaded parking structures, and uncovered parking aprons. The plan reserves approximately 3.3 acres north of the north apron along Aviation Drive for the development of new small aircraft facilities.

Non-Aviation Development | The airport owns approximately 16.2 acres of property between S. Airport Boulevard and the drainage canal north of the airport. This property was previously used as the airport's heliport, but since helicopter operations were relocated to the south side of the airport the site has been used for the storage of airport maintenance equipment. Because this site is not accessible to the airfield, it cannot be developed for aviation-related uses. For this reason, the plan reserves this area for non-aviation development to include compatible commercial or industrial developments. Approximately 11.4 acres of this site is within a floodplain and would include development restrictions.

Vehicle Access | The intersection of S. Curtis Way and E. Ryan Road is planned for a roundabout. It is desired for the airport's roadway network to be consistent with the surrounding Chandler Airpark, which features several roundabouts. A secured pedestrian access gate is also planned at the apron area to provide access to the apron area.

SOUTH SIDE

Planned south side development areas are depicted in **Figure 5C**.

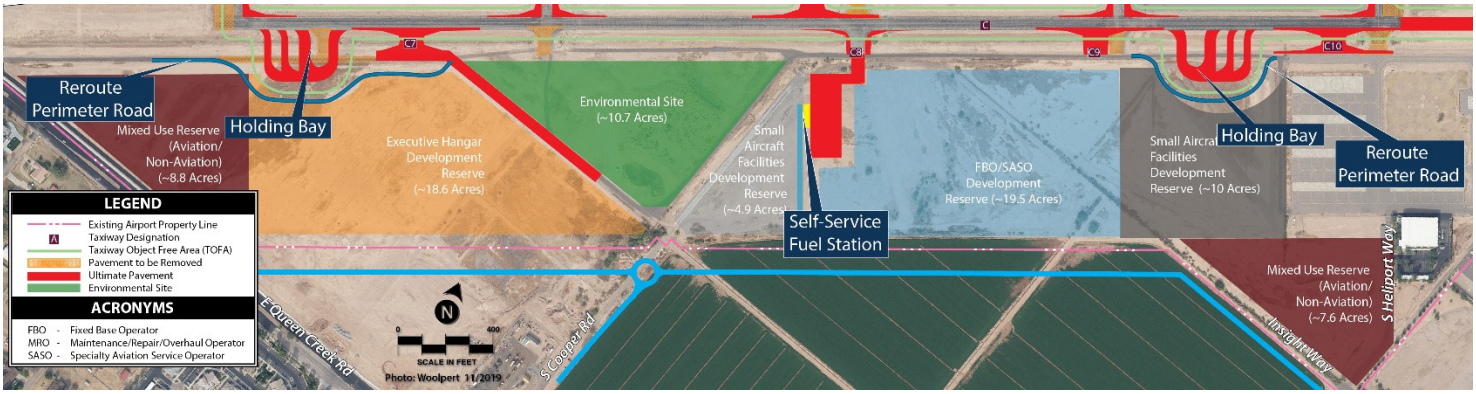


FIGURE 5C – SOUTH LANDSIDE DEVELOPMENT CONCEPT

The south side of the airport is predominantly undeveloped with approximately 82 acres (excluding 10.7 acres of an environmental site) available for development. Helicopter operations associated with Quantum Helicopters are the primary activity on the south side. It is anticipated that once the north side reaches a built-out condition, new development will begin on the south side. A major barrier to development of the south side is a need for expanded utility infrastructure and vehicle access roads. The plan also identifies extensions of Insight Way and S Cooper Road into the south side of the airport for vehicle circulation. Once this infrastructure is in place, the plan reserves parcels for new FBO/SASO development (19.5 acres); executive hangars (27.4 acres); and small aircraft facilities (24.4 acres). A dedicated fuel storage facility will also be necessary on the south side to eliminate the need for fuel trucks to travel from the north to fuel aircraft.

AIRPORT RECYCLING, REUSE, AND WASTE REDUCTION

REGULATORY GUIDELINES

FAA Modernization and Reform Act of 2012

The *FAA Modernization and Reform Act of 2012* (FMRA), which amended Title 49, United States Code (USC), included several changes to the Airport Improvement Program (AIP). Two of these changes are related to recycling, reuse, and waste reduction at airports.

- Section 132(b) of the FMRA expanded the definition of airport planning to include "developing a plan for recycling and minimizing the generation of airport solid waste, consistent with applicable State and local recycling laws, including the cost of a waste audit."

- Section 133 of the FMRA added a provision requiring airports that have or plan to prepare a master plan, and that receive AIP funding for an eligible project, to ensure that the new or updated master plan addresses issues relating to solid waste recycling at the airport, including:
    - The feasibility of solid waste recycling at the airport;
    - Minimizing the generation of solid waste at the airport;
    - Operation and maintenance requirements;
    - A review of waste management contracts; and
    - The potential for cost savings or the generation of revenue.

State of Arizona Solid Waste Management Plan

The *Arizona Solid Waste Management Plan* (1981)[4] was adopted to promote environmentally sound waste management. General goals of the waste management plan include:

- Promote improved and environmentally sound methods of solid waste management and disposal;
- Promote recovery and reuse of valuable material and energy resources from solid waste;
- Provide policy and procedural guidance to state, substate, and local agencies in the proper management of solid waste; and
- Fulfill requirements of *Resource Conservation and Recovery Act* (RCRA) and secure the state's continued eligibility for federal financial assistance.

Currently, there is no state law or regulation addressing solid waste management reduction thresholds. However, other means such as education, outreach, voluntary recycling, and non-profit organizations have been employed to reduce the quantity of solid waste in Arizona.

SOLID WASTE

Typically, airport sponsors have purview over waste handling services in facilities it owns and operates, such as the terminal building, city-owned hangars, and maintenance facilities. Tenants of airport-owned buildings/hangars, or tenants that own their own facilities, are typically responsible for coordinating their own waste handling services. While the focus of this plan is airport-operated facilities, the airport should work to incorporate facility-wide strategies that create consistency in waste disposal mechanisms. This would ultimately result in the reduction of materials sent to the landfill.

4 Arizona Department of Environmental Quality *Arizona Solid Waste Management Plan* (March 1981) (https://legacy.azdeq.gov/environ/waste/solid/)

For airports, waste can generally be divided into eight categories:[5]

- **Municipal Solid Waste** (MSW) is more commonly known as trash or garbage consisting of every-day items that are used and then discarded, i.e. product packaging.
- **Construction and Demolition Waste** (C&D) is considered non-hazardous trash resulting from land clearing, excavation, demolition, renovation or repair of structures, roads and utilities, including concrete, wood, metals, drywall, carpet, plastic, pipe, cardboard, and salvaged building components. C&D is also generally labeled as MSW.
- **Green Waste** is a form of MSW yard waste consisting of tree, shrub and grass clippings, leaves, weeds, small branches, seeds, and pods.
- **Food Waste** includes unconsumed food products or waste generated and discarded during food preparation and is also considered MSW.
- **Deplaned Waste** is waste removed from passenger aircrafts. Deplaned waste includes bottles, cans, mixed paper (newspapers, napkins, paper towels), plastic cups, service ware, food waste, and food soiled paper/packaging.
- **Lavatory Waste** is a special waste that is emptied through a hose and pumped into a lavatory service vehicle. The waste is then transported to a triturator[6] facility for pretreatment prior to discharge in the sanitary sewage system. Due to the chemicals in lavatory waste, it can present environmental and human health risks if mishandled. Caution must be taken to ensure lavatory waste is not released to the public sanitary sewerage system prior to pretreatment.
- **Spill Clean and Remediation Wastes** are also special wastes and are generated during cleanup of spills and/or the remediation of contamination from several types of sites on an airport.
- **Hazardous Wastes** are governed by RCRA, as well as the regulations in 40 Code of Federal Regulations (CFR) Subtitle C, Parts 260 to 270. The U.S. Environmental Protection Agency (EPA) developed less stringent regulations for certain hazardous waste, known as universal waste, described in 40 CFR Part 237, *The Universal Waste Rule*.

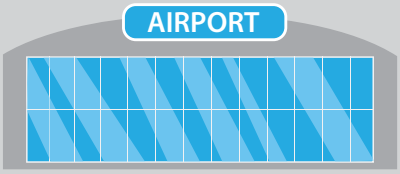
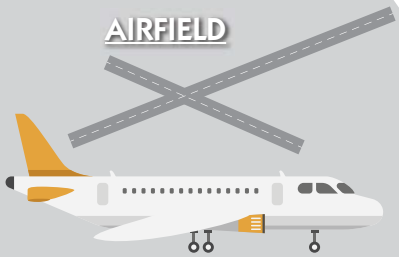
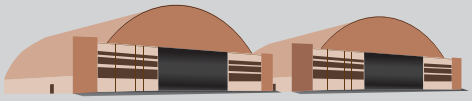
As seen on **Exhibit 5B**, there are multiple areas where CHD potentially contributes to the waste stream, including the terminal and pilot's lounge, airfield, hangars, airport construction projects, and airport traffic control tower. To create a comprehensive waste reduction and recycling plan for the airport, all potential inputs must be considered.

EXISTING SERVICES

Currently, waste management services for the airport are managed by the City of Chandler through a franchise agreement with Republic Services. Three MSW dumpsters are located airside adjacent to the municipal hangars, one dumpster is located landside adjacent to the terminal, and one more is by the airport maintenance equipment storage facility. No information is available regarding the weight of

5 Recycling, Reuse and Waste Reduction at Airports, FAA (April 24, 2013)
6 A triturator facility turns lavatory waste into fine particulates for further processing.

AIRPORT WASTE STREAMS for CHANDLER MUNICIPAL AIRPORT

AIRPORT AREA	POTENTIAL INPUTS	POTENTIAL OUTPUTS
TERMINAL/PILOT'S LOUNGE 	Employees Pilots	Food Waste Paper, Plastic Aluminum Cans Trash, Cardboard
AIRFIELD 	Aircraft Operations	Runway Rubber Green Waste
HANGARS 	Goods Movements	Plastic Wood Vehicle Waste (Tires & Fluids)
AIRPORT TRAFFIC CONTROL TOWER 	Employees	Paper, Trash, Aluminum Cans
AIRPORT CONSTRUCTION 	Construction Re-Construction Demolition	Reused Concrete Reused Asphalt Vehicle Waste Soils, Building Materials Wood, General Waste

Source: Recycling, Reuse, and Waste Reduction at Airports, FAA (April 24, 2013)

MSW hauled or the cost of service. Dumpsters are emptied weekly on Fridays. Currently, there is not a designated individual or department onsite at the airport to oversee waste management for the facility.

The airport engages in recycling services, also provided by Republic Services. The airport provides small recycling containers inside the terminal lobby, flight planning room, and within individual airport administration offices. Recyclables are collected weekly, and the most common recycled materials at the airport include paper, corrugated cardboard, glass, and aluminum cans. All materials accepted for recycling by Republic Services are depicted on **Exhibit 5C**.[7]

SOLID WASTE MANAGEMENT SYSTEM

Airports generally utilize either a *centralized* or a *decentralized* waste management system. The differences between these two methods are described below and summarized in **Exhibit 5D**.

- **Centralized waste management system.** With a centralized waste management system, the airport provides receptables for the collection of waste, recyclables, or compostable materials and contracts for the removal by a single local provider.[8] The centralized waste management system allows for more participation from airport tenants who may not be incentivized to recycle on their own and can reduce the overall cost of service for all involved. A centralized strategy can be inefficient for some airports as it requires more effort and oversight on the part of airport management. However, the centralized system is advantageous in that is has less players involved in the overall management of the solid waste and recycling efforts, and allows greater control by the city over the type, placement, and maintenance of dumpsters, thereby saving space and eliminating the need for each tenant to have their own containers.

- **Decentralized waste management system.** Under a decentralized waste management system, the airport provides waste containers and contracts for the hauling of waste materials in airport-operated spaces only. Airport tenants, such as fixed-base operators, retail shops, and other tenants manage the waste from their leased spaces with separate contracts, billing, and hauling schedules. A decentralized waste management system can increase both the number of receptacles on airport property and the number of trips by a waste collection service provider, should the collection schedule for the tenant differ from the airport.

Currently, the airport participates in a decentralized waste management system since airport tenants are responsible to oversee their waste management. Airport tenants include fixed based operators, specialty aviation service operators, the Hangar Café, and privately owned hangars. Airport staff should actively engage tenants to create a centralized waste management system at the airport to streamline waste management and recycling efforts at CHD.

7 Republic Services (https://www.republicservices.com/)
8 *Airport Waste Management and Recycling Practices* (2018) The National Academies of Sciences, Engineering, and Medicine Airport Cooperative Research Program, Synthesis 92.

Recycle Right



talogs direct mail coupons STATIONERY notebooks
shredded paper phone books paperback books
COLA BOTTLES detergent bottles yogurt containers
ION VIALS picnic cups milk jugs GLASS wine bottles

ALLOWABLE RECYCLABLES

PAPER

- Newspaper
- Phone books
- Envelopes
- Junk mail
- Brochures
- Magazines

ALUMINUM/METAL RECYLCING

- Aluminum beverage cans
- Food cans
- Scrap metal

CARDBOARD RECYCLING

- Ream wrappers
- File folders
- Poster board
- Frozen food boxes
- Cardboard boxes
- Milk Cartons

PLASTIC RECYCLING

- Water bottles
- Take-out containers
- Soda bottles

GLASS RECYCLING

Varies by location

- Beverage containers
- Glass food jars

OTHER ITEMS

ITEMS REQUIRING SPECIAL HANDLING

These items should never be mixed with regular recycling. Disposal requires special handling.

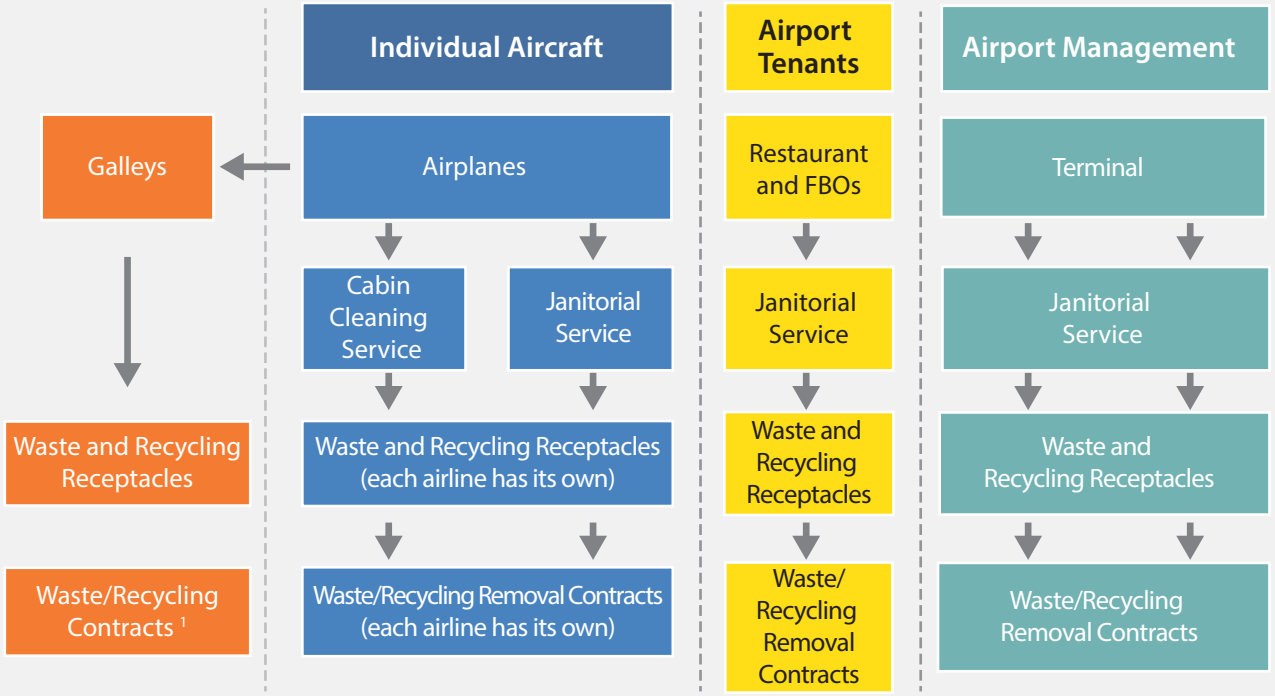
- Incandescent light bulbs
- Fluorescent tubes
- Computers & Electronics
- Needles or syringes
- Hazardous waste
- Toxic material containers
- Paint
- Yard waste (Green Waste)

NON-RECYCLABLE ITEMS

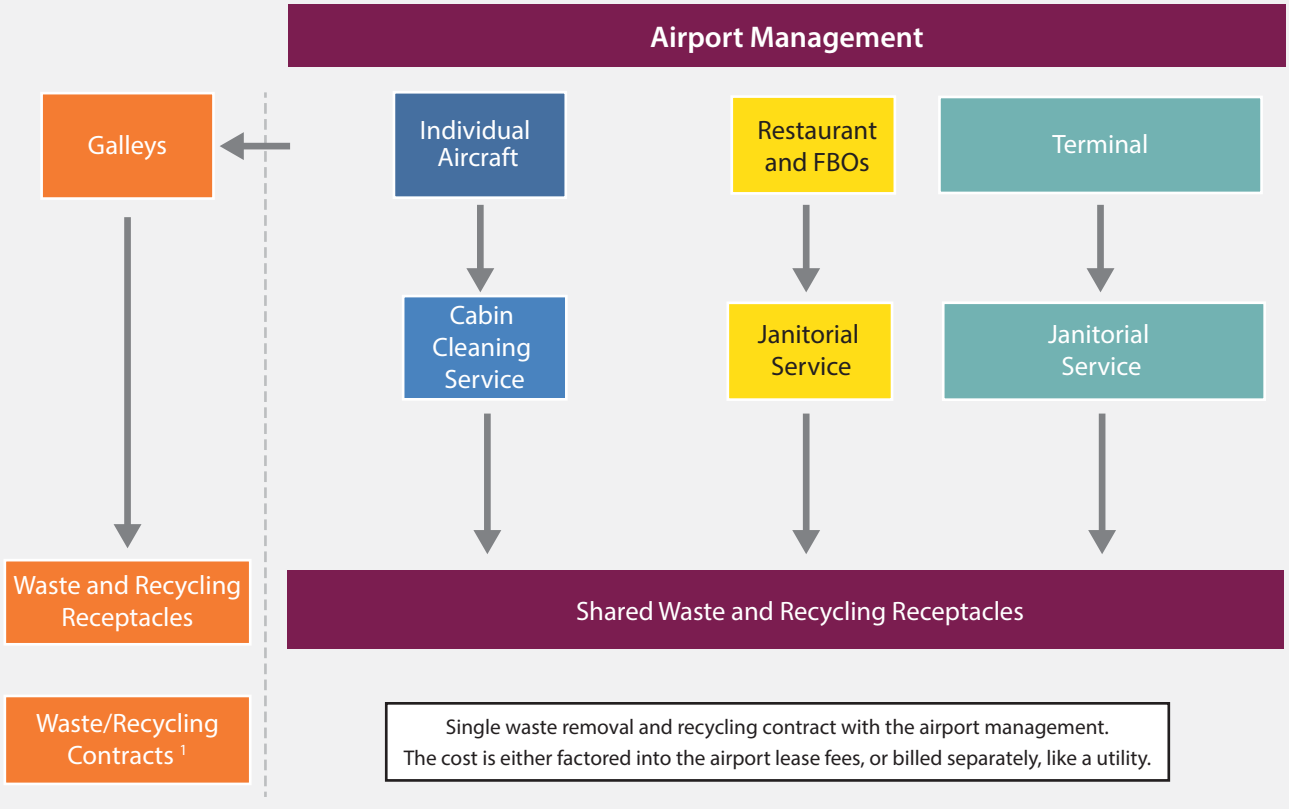
- Aerosol cans
- Aluminum foil
- Batteries
- Clothing
- Food waste
- Napkins
- Mirrors
- Ceramic
- Plastic bags
- Shredded paper
- Stickers/Address labels
- Tissue
- Styrofoam
- Paper towels
- Glass windows
- Pyrex

Source: Republic Services (2020)

Components of a Decentralized Airport Waste Management System



Components of a Centralized Airport Waste Management System



[1] Galleys typically manage their own waste even if an airport relies on a centralized system

Source: Natural Resources Defense Council, Trash Landings: How Airlines and Airports Can Clean Up Their Recycling Programs, December 2006.

GOALS AND RECOMMENDATIONS

Solid Waste and Recycling Goals

While the airport may or may not expand the existing waste management system with additional landside recycle dumpsters in other locations at the airport, there are other opportunities for improvement. **Table 5B** outlines objectives that could help reduce waste generation and increase recycling efforts at the airport. To increase the effectiveness of tracking progress at the airport, a baseline state of all suggested metrics should be established to provide a comparison over time.

TABLE 5B
Waste Management and Recycling Goals
Chandler Municipal Airport

Goals	Objectives
Reduce amount of solid waste generated	Switch to online bill pay to eliminate monthly paper bills
	Conduct a waste audit to identify most common types of waste
	Eliminate purchase of items that are not recyclable (i.e. Styrofoam, plastic bags)
Reuse of materials or equipment	Reuse grass clippings as mulch
	Offer reusable dishes to employees
	Recycle cardboard boxes for storage
Increase amount of materials recycled	Promote the expansion of recycling services to all areas of the airport
	Improve waste and recycling tracking and data management
	Incorporate recycling requirements and/or recommendations into tenant lease agreements
	Expand recycling marketing and promotion efforts throughout public areas
	Require contractors to implement strategies to reduce, reuse & recycle construction & demolition waste

Source: Coffman Associates, Inc.

Recommendations

To maximize waste reduction and increase recycling efforts at the airport, the following recommendations are made:

- **Assign the responsibility of waste management to a dedicated individual(s).** Having one person or a group of people oversee and manage solid waste and recycling at the airport will create efficient and cost saving solutions to solid waste management. People dedicated to this operational aspect of the airport will have a familiarity of processes and will help identify areas of improvement and cost-cutting measures.

- **Audit the current waste management system.** The continuation of an effective program requires accurate data of current waste and recycling rates. There are several ways an airport can gain insight into their waste stream, such as requesting weights from the hauler, tracking the volume, or reviewing the bills. But managing the waste system first starts with a waste audit. A waste audit is an analysis of the types of waste produced and is the most comprehensive and intensive way to assess waste stream composition, opportunities for waste reduction, and capture of recyclables. A waste audit should include the following actions:

- Examination of records
  - Waste hauling and disposal records and contracts
  - Supply and equipment invoices
  - Other waste management costs (commodity rebates, container costs, etc.)
  - Track waste from the point of origin
  - Establishes a baseline for metrics

- Facility walk-through conducted by the airport
  - Qualitative waste information to determine major waste components and waste-generating processes
  - Identify the locations of the airport that generate waste
  - Identify what type of waste is generated by the airport to determine what can be reduced, reused, or recycled
  - Understanding waste pickup and hauling practices

- Waste sort
  - Provides quantitative data on total airport waste generation
  - Allows problem solving design/enhancing the recycling program for the airport

- **Create a tracking and reporting system.** Continuing to track the solid waste that is generated will allow the airport to identify areas where a significant amount of waste is generated and will help the airport estimate annual waste volumes. Understanding the cyclical nature of waste generation will allow the airport to estimate costs and identify areas of improvement. Since the airport engages in recycling services, the airport can track recycling rates and waste quantities to identify cost saving measures that are currently unidentified simply based on the lack of quantitative data.

- **Reduce waste through controlled purchasing practices.** The airport can control the amount of waste generated by prioritizing the purchase of items or supplies that are reusable, recyclable, compostable, or made from recycled materials.

- **Enhance the existing recycling program at the airport.** To guarantee the airport continues to reduce the amount of waste hauled to the landfill, materials that cannot be reused or avoided should be recycled, if possible. The city should review internal procedures to ensure there are no unacceptable items contaminating recycling containers, or recyclables thrown in the trash. Clearly marked signage of what is and is not accepted placed near the solid waste and recycling containers is another significant component of a consistent, effective recycling program. CHD should actively work with Republic Services to ensure waste and recycling containers are right sized to the existing operation, as well as be on a collection schedule that picks up only when the containers are full.

- **Provide ongoing tenant education.** It is crucial to encourage tenant participation to assure buy-in of the airport's recycling efforts. To ensure recycling is part of the airport's everyday business, airport administration can provide training and educational to support personnel, tenants, and others who conduct business at the airport. In-person meetings with airport tenants could be held to create mutual understanding of the airport's solid waste and recycling goals, and how tenants play a vital role in the airport's overall success.

- **Create a centralized waste management system at the airport.** The airport should actively engage tenants to create a centralized waste management system at the airport to streamline waste management and recycling efforts at CHD.

- **Incorporate an airport-wide waste reduction strategic plan.** Designing an airport-wide waste reduction strategic plan will create consistency in waste deposal mechanisms, ultimately resulting in the reduction of materials sent to the landfill.

ENVIRONMENTAL OVERVIEW

An analysis of potential environmental impacts associated with proposed airport projects is an essential consideration in the master plan process. The primary purpose of this discussion is to review the recommended airport development concept plan and associated capital program at the airport to determine whether projects identified in the master plan could, individually or collectively, significantly impact existing environmental resources. The information contained in this section was obtained from previous studies, official internet websites, and analysis by the consultant.

Construction of any and all improvements depicted on the recommended airport development concept plan will require compliance with the *National Environmental Policy Act* (NEPA) *of 1969*, as amended. This includes privately funded projects and those projects receiving federal funding. For projects not categorically excluded under FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, compliance with NEPA is generally satisfied through the preparation of an Environmental Assessment (EA). In instances where significant environmental impacts are expected, as determined by the FAA, an Environmental Impact Statement (EIS) may be required. While this portion of the master plan is not designed to satisfy the NEPA requirements, it provides a preliminary review of environmental issues that may need to be considered in more detail within the environmental review processes. It is important to note that the FAA is ultimately responsible for determining the level of environmental documentation required for airport actions.

The environmental inventory included in Chapter One provides baseline information about the airport environs. This section provides an overview of potential impacts to existing resources that could result from implementation of the planned improvements outlined in the recommended airport development concept plan.

POTENTIAL ENVIRONMENTAL CONCERNS

Table 5C summarizes potential environmental concerns associated with implementation of the recommended master plan development concept for CHD. Analysis under NEPA includes direct, indirect, and cumulative impacts. Direct impacts are caused by the action and occur at the same time and place (see 40 Code of Federal Regulations [CFR] § 1508.8(a)). Examples of direct impacts include:

- Construction of a facility or runway in a wetland which results in the loss of a portion of the wetland; or
- Construction of a facility that adversely affects the visual character of a neighborhood.

Indirect impacts are those impacts caused by the action but are later in time or farther removed in distance but are still reasonably foreseeable (see 40 CFR § 1508.8(b)). Indirect impacts may include growth-inducing impacts and other effects related to induced changes in the pattern of land use, population density or growth rate, and related impacts on air and water and other natural systems, including ecosystems (see 40 CFR § 1508.8(b)).

Cumulative impacts are those that take into consideration the environmental impact of past, present, and future actions. Cumulative impacts will vary based on the project type, geographic location, potential to impact resources, and other factors, such as the current condition of potentially affected impact categories.

TABLE 5C
Summary of Potential Environmental Concerns
Chandler Municipal Airport

FAA ORDER 1050.1F SIGNIFICANCE THRESHOLD/FACTORS TO CONSIDER	POTENTIAL CONCERN
AIR QUALITY	
Threshold: The action would cause pollutant concentrations to exceed one or more of the National Ambient Air Quality Standards (NAAQS), as established by the United States (U.S.) Environmental Protection Agency (EPA) under the *Clean Air Act*, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations.	**Potential Impact.** The projected increase in operations over the 20-year planning horizon of the recommended airport development concept plan (**Exhibit 5A**) will likely result in additional emissions. Maricopa County is currently designated as a nonattainment area for ozone (O_3) and coarse particulate matter (PM_{10}). Maricopa County was previously a nonattainment area for carbon monoxide (CO); however, was designated as a maintenance area in 2005. Prior to the start of airport construction activities outlined on the recommended airport development concept plan, an air quality analysis during the NEPA process to determine whether O_3, PM_{10}, and CO emissions exceed *de minimis* thresholds established by the NAAQS may be required. Prior to the start of construction activities, the contractor will be required to obtain a dust control permit from the Maricopa County Air Quality Department. Condition of permit approval will require best management practices (BMPs) to control construction-related fugitive dust relating to construction equipment and earth moving activities, the primary source of PM_{10}.
BIOLOGICAL RESOURCES	
Threshold: The U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) determines that the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species or would result in the destruction or adverse modification of federally designated critical habitat. FAA has not established a significance threshold for non-listed species. However, factors to consider are if an action would have the potential for: • Long term or permanent loss of unlisted plant or wildlife species; • Adverse impacts to special status species or their habitats;	<u>For federally listed species</u> **No Impact.** The USFWS Information for Planning and Consultation (IPaC) report identified three threatened or endangered avian species: California least tern (endangered), the yellow-billed cuckoo (threatened), and the Yuma clapper rail (endangered) that should be considered when evaluating development in the area. As noted in Chapter One, these avian species prefer coastal or riparian nesting habitat. The airport is free from these habitat types and are unlikely to nest at the airport. <u>Designed Critical Habitat</u> **No Impact.** Critical habitat has not been identified within the vicinity of the airport.

• Substantial loss, reduction, degradation, disturbance, or fragmentation of native species' habitats or their populations; or • Adverse impacts on a species' reproductive rates, non-natural mortality, or ability to sustain the minimum population levels required for population maintenance.	Non-Listed Species **Potential Impact.** Non-listed species of concern include those protected by the MBTA and the BGEPA. There are presently five non-listed species of concern that could be impacted by activities at the airport. Habitat to support breeding for this species may be near the airport, therefore, the potential for impacts to migratory birds should be evaluated on a project-specific basis. To ensure that nest sites for the birds listed on the MBTA or BGEPA are not present at the start of airport activities, pre-construction nesting surveys may be required prior to the implementation of projects outlined in the master plan.
CLIMATE	
FAA has not established a significance threshold for Climate; refer to FAA Order 1050.1F's, *Desk Reference*, for the most up-to-date methodology for examining impacts associated with climate change.	**Potential Impact.** An increase in greenhouse gas (GHG) emissions could occur over the 20-year planning horizon of the recommended airport development concept plan. A project-specific analysis may be required per the FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, based on the parameters of the individual projects.
COASTAL RESOURCES	
FAA has not established a significant threshold for Coastal Resources.	**No Impact.** The airport is not located within a coastal zone.
***DEPARTMENT OF TRANSPORTATION ACT*, SECTION 4(F)**	
Threshold: The action involves more than a minimal physical use of a Section 4(f) resource or constitutes a "constructive use" based on an FAA determination that the aviation project would substantially impair the Section 4(f) resource. Resources that are protected by Section 4(f) are publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance; and publicly or privately owned land from an historic site of national, state, or local significance. Substantial impairment occurs when the activities, features, or attributes of the resource that contribute to its significance or enjoyment are substantially diminished.	**Potential Impact.** Initial assessments should be made to determine whether physical (temporary or permanent) or constructive use of this Section 4(f) resource applies. The Chandler Paseo Trail is located along the western boundary of the airport. Proposed non-aviation development along the southwestern boundary of the airport, will be adjacent to the trail, and could potentially affect this resource. Coordination with the City of Chandler may be needed to determine any necessary temporary closures to the trail or avoidance measures as needed, which could result in a temporary constructive use during construction activities. The Railroad Steam Wrecking Crane and Tool Car, which is listed on the National Register of Historic Places list and is a protected resource under Section 4(f), is located approximately one mile from the airport. If necessary, the FAA will consider several types of impacts to historical properties. The Section 4(f) compliance process involves the preparation of a Section 4(f) statement by the airport, which evaluates other feasible alternatives. Planned airport projects present potential constructive use of other Section 4(f) properties identified in Chapter One in Table 1N. The proposed expansion to Runway 4R-22L outlined in the recommended airport development concept plan can affect Tumbleweed Park or Reflections Park (both located northeast of the airport) as the protected runway area and an altered air traffic pattern may result from runway improvements. The responsible FAA official will be required to consult with all appropriate Federal, state, and local officials having

	jurisdiction over the affected Section 4(f) properties to determine whether project-related impacts will substantially impair the resource. Consultation will occur as part of the NEPA process as specific projects are initiated.
FARMLANDS	

Threshold: The total combined score on Form AD-1006, *Farmland Conversion Impact Rating*," ranges between 200 and 260. (Form AD-1006 is used by the U.S. Department of Agriculture, Natural Resources Conservation Service [NRCS] to assess impacts under the *Farmland Protection Policy Act* [FPPA].)
 	
FPPA applies when airport activities meet the following conditions:
• Federal funds are involved;
• The action involves the potential for the irreversible conversion of important farmlands to non-agricultural uses. Important farmlands include pastureland, cropland, and forest considered to be prime, unique, or statewide or locally important land; or
• None of the exemptions to FPPA apply. These exemptions include:
  ○ When land is not considered "farmland" under FPPA; such as land already developed or already irreversibly converted. These instances include when land is designated as an urban area by the U.S. Census Bureau or the existing footprint includes rights-of-way.
  ○ When land is already committed to urban development.
  ○ When land is committed to water storage.
  ○ The construction of non-farm structures necessary to support farming operations.
  ○ The construction/land development for national defense purposes.
	No Impact. The whole of the airport is classified as either "prime farmland if irrigated" or "prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season" by the NRCS, identified on Exhibit 1J. However, according to the U.S. Census Bureau 2010 Census[9], the airport is located in a non-urbanized area. Additionally, the airport is not currently used for agricultural purposes or irrigated for agricultural uses; therefore, FPPA will not apply to airport activities proposed on the recommended airport development concept plan.

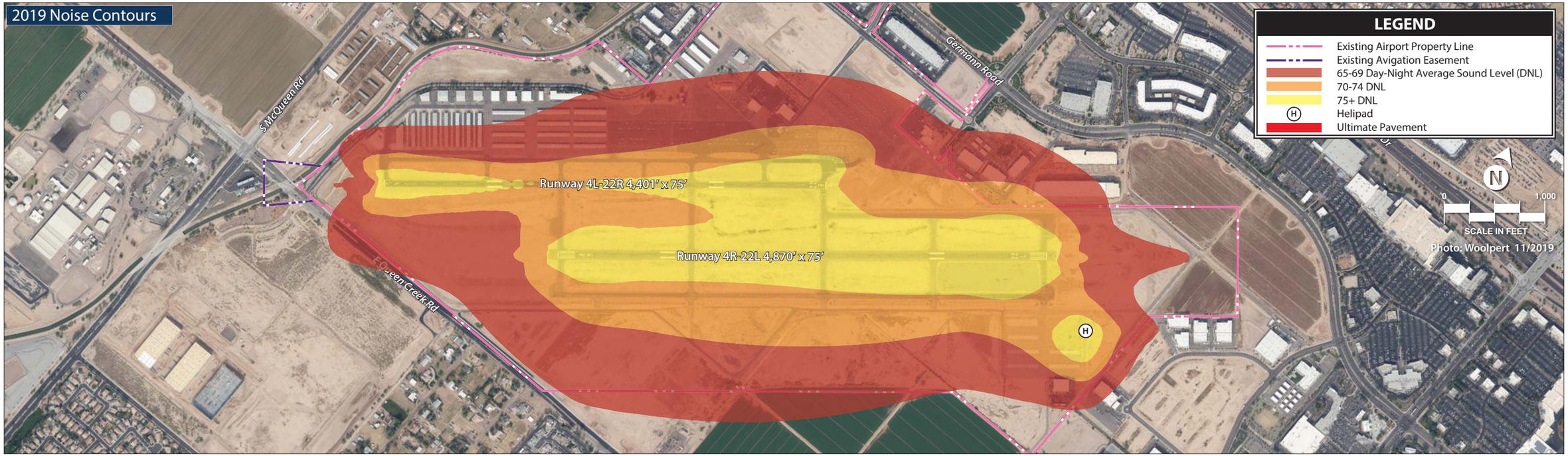
HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION	
FAA has not established a significance threshold for Hazardous Materials, Solid Waste, and Pollution Prevention. However, factors to consider are if an action would have the potential to: • Violate applicable federal, state, tribal, or local laws or regulations regarding hazardous materials and/or solid waste management; • Involve a contaminated site; • Produce an appreciably different quantity or type of hazardous waste; • Generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity; or • Adversely affect human health and the environment.	**Potential Impact.** The airport has a self-serve fuel island along South (S.) Airport Boulevard and provides opportunity for aircraft maintenance activities that could involve fossil fuels or other types of hazardous materials or wastes. These operations are regulated and monitored by the appropriate regulatory agencies, such as the U.S. EPA and the Arizona Department of Environmental Quality (ADEQ). Currently, the tanks for this fuel island are underground (USTs) and located west of S. Airport Boulevard, while aircraft fueling occurs east of S. Airport Boulevard. The airport development concept plan recommends the USTs to be permanently removed and the fuel island will utilize above ground storage tanks (ASTs) adjacent to fueling activities. Removal of the USTs will require the airport to obtain a Noncorrective Action UST Permanent Closure Program certificate through the Arizona Department of Environmental Quality (ADEQ).

9 U.S. Census Bureau Urbanized Area Maps (https://www2.census.gov/geo/maps/dc10map/UAUC_RefMap/ua/)

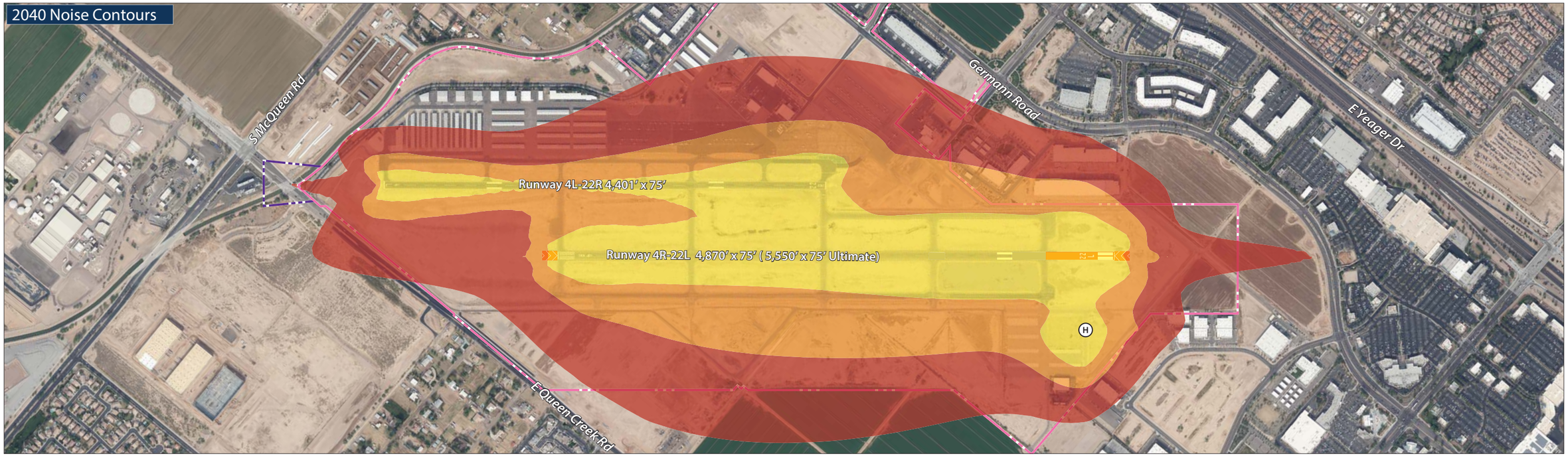
	The recommended airport development concept plan proposed the relocation of the 100LL fuel island to a site adjacent to South (S.) Airport Boulevard and a new fuel island southeast of Runway 4R-22L. The owner(s) of the ASTs are required to be permitted through the Arizona Department of Fire, Building, and Life Safety. The recommended airport development concept plan does not include land uses that would produce an appreciably different quantity or type of hazardous waste. However, should this type of land use be proposed, further NEPA review and/or permitting would be required. There are no known hazardous materials or waste contamination sites currently on airport property. There will be no impact to Superfund or brownfields sites since they are not within five miles of the airport.
HISTORIC, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES	
FAA has not established a significance threshold for Historical, Architectural, Archaeological, and Cultural Resources. Factors to consider are if an action would result in a finding of "adverse effect" through the Section 106 process. However, an adverse effect finding does not automatically trigger preparation of an EIS (i.e., a significant impact).	**No Impact.** As identified in Chapter One, one historic resource, the Railroad Steam Wrecking Crane and Tool Car, is located less than one mile from the airport. However, it is unlikely airport activities will impact this structure because the crane is located west of South McQueen Street, within the Arizona Railway Museum located at the west end of Tumbleweed Park approximately one mile west. Due to this separation, it is unlikely the crane will be affected by airport development activities. All other historic resources identified in Chapter One are located more than one mile from the airport and will not be affected by airport development activities.
LAND USE	
FAA has not established a significance threshold for Land Use. There are also no specific independent factors to consider. The determination that significant impacts exist is normally dependent on the significance of other impacts.	**No Impact.** One historic resource is located west of the airport; however, it is located west of South McQueen Street, which is approximately one mile from the airport. Due to this distance, it is unlikely to be impacted by airport activities. Single-family residential, a noise-sensitive land use, is present south of East Queen Creek Road, less than 0.5 mile from the Executive Hangar Development Reserve area identified on **Exhibit 5A**.
NATURAL RESOURCE AND ENERGY SUPPLY	
FAA has not established a significance threshold for Natural Resources and Energy Supply. However, factors to consider are if an action would have the potential to cause demand to exceed available or future supplies of these resources.	**Potential Impact**. Planned development projects at the airport could increase demands on energy utilities, water supplies and treatment, and other natural resources during construction; however, impacts are not anticipated to be long-term. Should long-term impacts be a concern, coordination with service providers is recommended.
NOISE AND NOISE-SENSITIVE LAND USE	
Threshold: The action would increase noise by Day-Night Average Sound Level (DNL) 1.5 decibel (dB) or more for a noise-sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe.	**Potential Impact. Exhibit 5E** depicts both 2019 and 2040 noise contours. In both existing and future conditions, the 65 DNL contour extends off airport property at the north, east, and south end of the airport. To both scenarios, the 65 DNL contour is anticipated to encompass commercial or industrial land uses but is not anticipated to affect any residential structures.

Another factor to consider is that special consideration needs to be given to the evaluation of the significance of noise impacts on noise-sensitive areas within Section 4(f) properties where the land use compatibility guidelines in Title 14 Code of Federal Regulations (CFR) part 150 are not relevant to the value, significance, and enjoyment of the area in question.	
SOCIOECONOMIC, ENVIRONMENTAL JUSTICE, AND CHILDREN'S HEALTH AND SAFETY RISKS	
Socioeconomic	
FAA has not established a significance threshold for Socioeconomics. However, factors to consider are if an action would have the potential to: • induce substantial economic growth in an area, either directly or indirectly (e.g., through establishing projects in an undeveloped area); • disrupt or divide the physical arrangement of an established community; • cause extensive relocation when sufficient replacement housing is unavailable; • cause extensive relocation of community businesses that would cause severe economic hardship for affected communities; • disrupt local traffic patterns and substantially reduce the levels of service of roads serving the airport and its surrounding communities; or • produce a substantial change in the community tax base.	**Potential Impact.** The proposed development plan for the airport could potentially encourage economic growth for the City of Chandler and surrounding communities. Results include new construction jobs, new jobs for the airport and other commercial uses, new housing, and increase the local tax base. The proposed concept plan does not include any recommendations to acquire residences or relocate businesses. New commercial development could change the level of service to roads leading to and within the airport, such as along East Queen Creek Road and S. Airport Boulevard. The long-term changes to the level of service are determined by the type of use proposed, and it may be necessary to perform a traffic study to ensure service is either not substantially impacted or mitigation measures are addressed. In the short-term during construction, there would be temporary disruptions to surface traffic patterns.
Environmental Justice	
FAA has not established a significance threshold for Environmental Justice. However, factors to consider are if an action would have the potential to lead to a disproportionately high and adverse impact to an environmental justice population (i.e., a low-income or minority population), due to: • Significant impacts in other environmental impact categories; or • Impacts on the physical or natural environment that affect an environmental justice population in a way that FAA determines is unique to the environmental justice population and significant to that population.	**Potential Impact.** Both low-income and minority populations have been identified in the vicinity of the airport. Executive Order (E.O.) 12898, *Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations*, and the accompanying Presidential Memorandum, and Order DOT 5610.2, *Environmental Justice*, require the FAA to provide for meaningful public involvement for minority and low-income populations, as well as analysis that identifies and addresses potential impacts on these populations that may be disproportionately high and adverse. Environmental justice impacts may be avoided or minimized through early and consistent communication with the public and allowing ample time for public consideration. If disproportionately high or adverse impacts are noted, mitigation and enhancement measures and offsetting benefits can be taken into consideration.
Children's Health and Safety Risks	
FAA has not established a significance threshold for Children's Environmental Health and Safety Risks. However, factors to consider are whether an action will have the potential to lead to a disproportionate health or safety risk to children.	**Potential Impact.** Per E.O. 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, federal agencies are directed to identify and assess environmental health and safety risks that may disproportionately affect children. These risks include those that are attributable to products or substances that a child is likely to encounter or ingest, such as air, food, drinking water, recreational waters, soil, or products to which they may be exposed. Within a close vicinity of the

2019 Noise Contours



2040 Noise Contours



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	airport, seven schools have been identified (the location of these schools are labeled on Exhibit 1J in the Environmental Inventory). BMPs should be implemented to decrease environmental health risks to children. During construction of the projects outlined in the recommended concept plan, appropriate measures should be taken to prevent access by unauthorized persons to construction project areas.
VISUAL EFFECTS	
Light Emissions	
The FAA has not established a significant threshold for light emissions. However, a factor to consider is the degree to which an action would have the potential to: • Create annoyance or interfere with normal activities from light emissions; and • Affect the visual character of the area due to the light emissions, including the importance, uniqueness, and aesthetic value of the affected visual resource.	**Potential Impact.** New lighting associated with the recommended airport development concept plan would remain on the airfield and other developed portions of the airport. Proposed lighting would most likely be associated with new development, such as wall pack lighting on new hangars and edge lighting for relocated taxiways.
Visual Resources/Visual Character	
FAA has not established a significance threshold for Visual Resources/Visual Character. However, a factor to consider is the extent an action would have on the potential to: • Affect the nature of the visual character of the area, including the importance, uniqueness, and aesthetic value of the affected visual resources; • Contrast with the visual resources and/or visual character in the study area; and • Block or obstruct the views of the visual resources, including whether these resources would still be viewable from other locations.	**Potential Impact.** The development proposed in the recommended concept plan could change the overall visual character of the airport with additional roads and structures planned on-site. New development could change the character of the area, contrasting with the visual character from the nearby mountains. Potential effects could be minimized by preserving as much natural vegetation as possible and integrating development into existing natural surroundings.
WATER RESOURCES	
Wetlands	
Threshold: The action would: **1. Adversely affect a wetland's function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers;** **2. Substantially alter the hydrology needed to sustain the affected wetland system's values and functions or those of a wetland to which it is connected;** **3. Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety or welfare (the term welfare includes cultural, recreational, and scientific resources or property important to the public);** **4. Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands;** **5. Promote development of secondary activities or services that would cause the circumstances listed above to occur; or** **6. Be inconsistent with applicable state wetland strategies.**	**Potential Impact.** There is an engineered canals/drainage way (Consolidated Canal) identified as a wetland adjacent to airport boundary and proposed development, although this information is based on aerial photography interpretation from undated aerial photography. Field surveys and wetland delineations may be required to determine the presence or absence of wetlands in project areas. Removal or relocation of wetlands may require a Section 404 permit under the *Clean Water Act*, which regulates the discharge of dredged or fill material into waters of the United States, including wetlands.

Floodplains	
Threshold: The action would cause notable adverse impacts on natural and beneficial floodplain values. Natural and beneficial floodplain values are defined in Paragraph 4.k of DOT Order 5650.2, *Floodplain Management and Protection.*	**Potential Impact.** A 100-year floodplain associated with the Consolidated Canal was identified by FEMA on airport property (depicted in Chapter One on Exhibit 1J). E.O. 11988, *Floodplain Management*, requires federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of 100-year floodplains and to avoid direct or indirect support of floodplain development where there is a practicable alternative. The proposed recommended airport development concept plan proposes the extension of Taxiway B and new non-aviation development along S. Airport Boulevard within the 100-year floodplain (**Exhibit 5A**). According to Maricopa County, the airport may be required to obtain a Floodplain Use Permit for any development or site improvements in a floodplain identified on the Official Floodplain Map. The Floodplain Manager shall review and approve this permit, if the development complies with the regulations set forth by the county. Per E.O. 11988, *Floodplain Management, and Department of Transportation Order* (DOT) 5650.2, *Floodplain Management and Protection*, agencies are required to provide the public an opportunity for early public review of any plan or proposal encroaching into a floodplain.
Surface Waters	
Threshold: The action would: **1. Exceed water quality standards established by federal, state, local, and tribal regulatory agencies; or** **2. Contaminate public drinking water supply such that public health may be adversely affected.** Factors to consider are when a project would have the potential to: • adversely affect natural and beneficial water resource values to a degree that substantially diminishes or destroys such values; • adversely affect surface waters such that the beneficial uses and values of such waters are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated; or • present difficulties based on water quality impact when obtaining a permit or authorization.	**Potential Impact.** The airport manages airport stormwater discharges with an Arizona Pollutant Discharge Elimination System (AZPDES) issued and regulated by the ADEQ. Improvements to the airport will require a revised permit to be issued addressing operational and structural source controls, treatment best management practices (BMPs), and sediment and erosion control. An AZPDES General Construction permit would be required for all projects involving ground disturbance over one acre. FAA's Advisory Circular (AC) 150/5370-10G, *Standards for Specifying Construction of Airports, Item P-156, Temporary Air and Water Pollution, Soil Erosion and Siltation Control* should also be implemented during construction projects at the airport.
Wild and Scenic Rivers	
FAA has not established a significance threshold for Wild and Scenic Rivers. Factors to consider are when an action would have an adverse impact on the values for which a river was designated (or considered for designation) through: • Destroying or altering a river's free-flowing nature; • A direct and adverse effect on the values for which a river was designated (or under study for designation); • Introducing a visual, audible, or other type of intrusion that is out of character with the river or would alter outstanding features of the river's setting;	**No Impact.** The nearest designated Wild and Scenic River, the Verde River, is located approximately 60 miles from the airport. The closest river on the NRI is a segment of the Arnett/Telegraph Creeks, which is located approximately 36 miles east of the airport. The recommended airport projects will not have adverse effects on these river's outstanding remarkable values (i.e., scenery, recreation, geology, fish, wildlife, and history).

• Causing the river's water quality to deteriorate; • Allowing the transfer or sale of property interests without restrictions needed to protect the river or the river corridor; or • Any of the above impacts preventing a river on the Nationwide Rivers Inventory (NRI) or a Section 5(d) river that is not included in the NRI from being included in the Wild and Scenic River System or causing a downgrade in its classification (e.g., from wild to recreational).	
Groundwater	
Threshold: The action would: **1. Exceed groundwater quality standards established by federal, state, local, and tribal regulatory agencies: or** **2. Contaminate an aquifer used for public water supply such that public health may be adversely affected.** Factors to consider are when a project would have the potential to: • Adversely affect natural and beneficial groundwater values to a degree that substantially diminishes or destroys such values; • Adversely affect groundwater quantities such that the beneficial uses and values of such groundwater are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated; or • Present difficulties based on water quality impacts when obtaining a permit or authorization.	**No Impact.** Proposed projects outlined on the recommend concept plan will not substantially change the amount of water used by the airport. Additionally, the airport property does not serve as a significant source of groundwater recharge and is not located near a sole source aquifer.

Source: Coffman Associates, Inc analysis

SUMMARY

This chapter has been prepared to help the City of Chandler make decisions on the future growth and development of CHD by describing narratively and graphically the Recommended Master Plan Concept. It details environmental and land use conditions that must be taken into consideration when implementing the development plan. The plan represents an airfield facility that fulfills aviation needs for the airport, while conforming to safety and design standards to the extent practicable. It also provides a landside complex that can be developed as demand dictates and is subject to further refinement pending comments from the PAC, City of Chandler, and public.

Flexibility will be very important to future development at the airport, as activity may not occur as predicted. The Recommended Master Plan Concept provides stakeholders with a general guide that, if followed, can maintain the airport's long-term viability, and allow it to continue to provide air transportation service to the region. The next chapter of this master plan will provide a reasonable schedule for undertaking the projects based on safety and demand over the course of the next 20 years.



Chapter Six

CAPITAL FINANCIAL PLAN

The Master Plan Concept presented in the previous chapter outlined airside and landside improvements for Chandler Municipal Airport (CHD) that provide the City of Chandler with a plan to preserve and develop the airport to meet future aviation demands. Using the Recommended Master Plan Concept as a guide, this chapter will provide a description and overall cost for projects identified in the capital improvement program (CIP) and development schedule. The program has been evaluated from a variety of perspectives and represents a comparative analysis of basic budget factors, demand, and priority assignments.

The presentation of the capital program is organized into two sections. First, the airport's CIP and associated cost estimates are presented in narrative and graphic form. The CIP has been developed following Federal Aviation Administration (FAA) guidelines for master plans and primarily identifies those projects that are likely eligible for FAA and Arizona Department of Transportation (ADOT) – Aeronautics Group grant funding. Second, capital improvement funding sources on the federal, state, and local levels are identified and discussed.

CHANDLER MUNICIPAL AIRPORT CHD

AIRPORT CAPITAL IMPROVEMENT PROGRAM

With the recommended concept and specific needs and improvements for the airport having been established, the next step is to determine a realistic schedule for project implementation and the associated costs for the plan. The capital program considers the interrelationships among the projects in order to determine an appropriate sequence of projects, while remaining within reasonable fiscal constraints.

The CIP, programmed by planning horizons, has been developed to cover the short- (years 1-5), intermediate- (years 6-10), and long-term (years 11-20) planning horizons. By using planning horizons instead of specific years, the City of Chandler will have greater flexibility to adjust capital needs as demand dictates. **Table 6A** summarizes the key aviation demand milestones projected at CHD for each of the three planning horizons.

TABLE 6A
Aviation Demand Planning Horizons
Chandler Municipal Airport

	Base Year (2019)	Short Term (1-5 Years)	Intermediate Term (6-10 Years)	Long Term (11-20 Years)
BASED AIRCRAFT				
Single Engine	379	424	469	552
Multi-Engine	26	24	20	15
Turboprop	6	7	9	13
Jet	8	10	13	20
Helicopter	22	25	29	40
TOTAL BASED AIRCRAFT	441	490	540	640
ANNUAL OPERATIONS				
Itinerant				
Air Taxi	2,990	3,900	4,400	5,100
General Aviation	67,647	72,500	77,300	87,400
Military	199	213	213	213
Total Itinerant	70,836	76,613	81,913	92,713
Local				
General Aviation	149,754	158,300	165,800	181,900
Military	72	62	62	62
Total Local	149,826	158,362	165,862	181,962
TOTAL OPERATIONS	220,662	234,975	247,775	274,675

Source: Coffman Associates analysis

A key aspect of this planning document is the use of demand-based planning milestones. The short-term planning horizon contains items of highest need and/or priority, many of which have been previously defined by airport management. As short-term horizon activity levels are reached, it will then be time to program for the intermediate term based upon the next activity milestones. Similarly, when the intermediate term milestones are reached, it will be time to program for the long-term activity milestones.

Many development items included in the recommended concept will need to follow these demand indicators. For example, the plan includes expanding utility infrastructure and site preparation for constructing new landside facilities to support aircraft activity. Demand for new based aircraft will be a primary indicator for these projects. If based aircraft growth occurs as projected, additional hangars should be constructed to meet the demand. If growth slows or does not occur as forecast, some projects may be delayed. As a result, capital expenditures are planned to be made on an as-needed basis, leading to more responsible use of capital assets. Some development items do not depend on demand, such as airfield improvements to meet FAA design standards. These projects need to be programmed in a timely manner regardless of changes in demand indicators and should be monitored regularly by Airport management.

At CHD, some hangars are owned and managed by the airport and leased to individual tenants, while others are privately owned and managed on land leased from the airport. Because of economic realities, many airports rely on private developers to construct new hangars. In some cases, private developers can keep construction costs lower which, in turn, lowers the monthly lease rates necessary to amortize a loan. The CIP for CHD assumes that site preparation and development for landside facilities will be constructed privately. This assumption does not preclude the possibility of the airport constructing new hangars. Ultimately, the City of Chandler will determine, based upon demand and the specific needs of a potential developer, whether to self-fund landside facility development or to rely on private developers.

As a master plan is a conceptual document, implementation of the capital projects should only be undertaken after further refinement of their design and costs through architectural or engineering analyses. Moreover, some projects may require additional infrastructure improvements (i.e., drainage improvements, extension of utilities, etc.) that may increase the estimated cost of the project or increase the timeline for completion.

Once a list of necessary projects was identified and refined, project-specific cost estimates were prepared. These estimates include design, construction administration, and contingency costs that may arise on the project. ***Capital costs presented here should be viewed only as "order-of-magnitude" estimates subject to further refinement during engineering/architectural design.*** Nevertheless, they are considered sufficient for planning purposes. Cost estimates for each of the development projects in the CIP are based on present-day construction, design, and administration costs. Adjustments will need to be applied over time to account for inflation and changes in construction and capital equipment costs. Cost estimates for these projects were provided by Dibble Engineering, who is providing engineering support for the master plan and is familiar with CHD. Cost estimates for each of the development projects in the CIP are in current dollars.

Exhibit 6A presents the proposed 20-year CIP for CHD. Two things must be considered. First, the proposed CIP is a point-in-time analysis which will change annually based on actual demand and changing needs. Second, an estimate of grant (FAA and/or ADOT – Aeronautics Group) funding eligibility has been included, although actual funding is not guaranteed. For those projects that would be eligible for federal funding, Airport Improvement Program (AIP) reauthorization provides for 91.06 percent of the total project cost for CHD. The remaining amount (8.94 percent) would be equally shared (4.47 percent each) between ADOT – Aeronautics Group and the City of Chandler. This eligibility breakdown is based upon the airport's classification, in addition to the amount of public land within the State of Arizona. Other projects, such as the implementation of certain landside facilities (roadways), are typically not eligible

for AIP grants (outside of non-primary entitlements) or would rank low on the priority scale. As a result, these projects should be planned for airport sponsor funding or funding through specific ADOT – Aeronautics Group programs.

As detailed in the CIP, most projects listed are eligible for federal and state funding. Obviously, demand and justification for these projects must be provided prior to a grant being issued by either the FAA and/or ADOT – Aeronautics Group. It should be noted that certain projects listed in the CIP, while eligible for federal and state funding, are designated for state funding assistance only per the airport's current CIP on file with the FAA and ADOT – Aeronautics Group.

The FAA utilizes a national priority rating system to help objectively evaluate potential airport projects. Projects are weighted toward safety, infrastructure preservation, meeting design standards, and capacity enhancement. The FAA may participate in the highest priority projects before considering lower priority projects, even if a lower priority project is considered a more urgent need by the local sponsor. Nonetheless, the project should remain a priority, and funding support should continue to be requested in subsequent years.

Some projects identified in the CIP will require environmental documentation. The level of documentation necessary for each project must be determined in consultation with the FAA and ADOT – Aeronautics Group. There are three major levels of environmental review to be considered under the *National Environmental Policy Act* (NEPA) that include categorical exclusions (CatEx), Environmental Assessments (EA), and Environmental Impact Statements (EIS). Each level requires more time to complete and more detailed information. Guidance on what level of documentation is required for a specific project is provided in FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*. The Environmental Overview presented in Chapter Five addresses NEPA and provides an evaluation of various environmental categories for CHD.

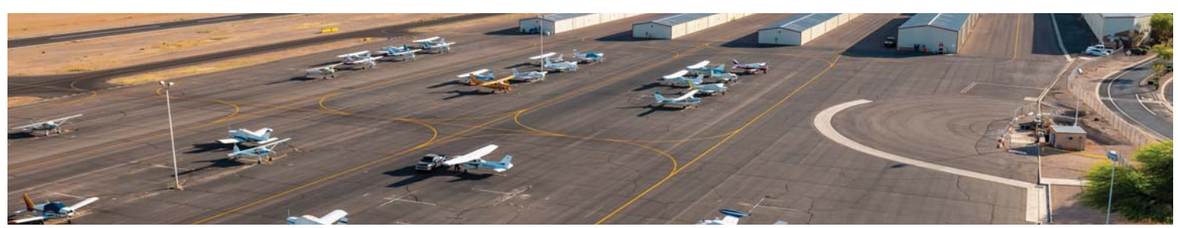
The following sections will describe in greater detail the projects identified for the airport over the next 20 years. The projects are grouped based upon a detailed evaluation of existing and projected demand, safety, rehabilitation needs, and local priority. While the CIP identifies the priority ranking of the projects, the list should be evaluated and revised on a regular basis. It is also important to note that certain projects, while listed separately for purposes of evaluation in this study, could be combined with other projects during time of construction/implementation.

SHORT-TERM PROGRAM

The short-term projects are those anticipated to be needed during the first five years of the 20-year CIP. The projects listed are subject to change based on federal and state funding priorities. Projects related to safety and maintenance generally have the highest priority. This applies to many of the projects identified in the short-term CIP that are associated with maintaining/rehabilitating existing airfield pavements and improving airfield safety. The short-term program considers 18 projects for the planning period as presented on **Exhibit 6A** and depicted on **Exhibit 6B**. The following provides a detailed breakdown of each project.

Fiscal Year	Project No.	Project	Funding Sources: Estimated Cost	AIP	ADOT	Airport Sponsor	Private
Short-Term Projects							
2021	1	Annual Pavement Maintenance Program - Runway 4L-22R	$368,500	$0	$0	$368,500	$0
2021	2	Replace Tower Transceiver Radios	$851,000	$0	$0	$851,000	$0
2021	3	Airfield Lighting Improve/Rwy 4L-22R PAPI Replacement	$1,724,000	$1,569,874	$77,063	$77,063	$0
2022	4	Annual Pavement Maintenance Program - Taxiway A and Connectors	$664,200	$0	$0	$664,200	$0
2022	5	Rehabilitate Runway 4R-22L Pavement and Lighting Rehabilitation	$2,825,000	$2,572,445	$126,278	$126,278	$0
2022	6	Airport Fuel Tank Relocation	$610,000	$0	$0	$610,000	$0
2022	7	Taxiway B Extension - Phase I	$2,035,200	$0	$1,831,680	$203,520	$0
2023	8	Annual Pavement Maintenance Program - City Hangars Asphalt (A-L)	$433,125	$0	$0	$433,125	$0
2023	9	Runway 4R-22L Extension - (Professional Services)	$350,000	$0	$0	$350,000	$0
2023	10	North Terminal Apron Reconstruction Phase II	$1,860,000	$1,693,716	$83,142	$83,142	$0
2023	11	Wildlife Exclusion Perimeter Fence	$1,062,000	$0	$955,800	$106,200	$0
2024	12	Annual Pavement Maintenance Program - Taxiway B	$243,750	$0	$0	$243,750	$0
2024	13	Runway 4R-22L Extension - (Environmental)	$427,000	$388,826	$19,087	$19,087	$0
2024	14	Rehabilitate Hangar Area Pavement	$3,092,000	$2,815,575	$138,212	$138,212	$0
2024	15	Rehabilitate Armory Apron Pavement - Phase I	$1,720,000	$1,566,232	$76,884	$76,884	$0
2025	16	Annual Pavement Maintenance Program - San Tan Ramp Tie-downs	$610,000	$0	$0	$610,000	$0
2025	17	Runway 4R-22L Extension - (Design)	$435,000	$396,111	$19,445	$19,445	$0
2025	18	Rehabilitate Armory Apron Pavement - Phase II	$1,720,000	$1,566,232	$76,884	$76,884	$0
Intermediate-Term Projects							
FY 2026-2030	19	Annual Pavement Maintenance Program - Terminal North Apron Phase 1/2; Taxiway C	$861,000	$0	$0	$861,000	$0
	20	Runway 4R-22L Extension - (Construction)	$5,404,000	$4,920,882	$241,559	$241,559	$0
	21	Rehabilitate North Terminal Apron Taxilane	$378,000	$344,207	$16,897	$16,897	$0
	22	San Tan Apron Reconstruction	$670,000	$610,102	$29,949	$29,949	$0
	23	Heliport Area Reconstruction	$2,600,000	$2,367,560	$116,220	$116,220	$0
	24	Taxiway B Extension - Phase II	$4,080,000	$3,715,248	$182,376	$182,376	$0
	25	Construct Blast Pads - Runway 4R-22L	$470,000	$427,982	$21,009	$21,009	$0
	26	Taxiway Fillet Improvements to Meet TDG 2 Standards	$2,600,000	$2,367,560	$116,220	$116,220	$0
	27	Remove Taxiway M Connector to Runway 4L-22R Remove Taxiway J Connector to Runway 4L-22R Remove Taxiway H Connector to Runway 4L-22R North of Taxiway B Relocate Taxiway F Connector from Apron to Taxiway A Remove Holding Apron at East End of Taxiway A (Runway 22R Threshold)	$1,090,000	$992,554	$48,723	$48,723	$0
	29	Relocate Taxiway Q from Heliport Apron (Ultimate C10) Relocate Taxiway N Connector to Runway 4R-22L (Ultimate C3)	$1,140,000	$1,038,084	$50,958	$50,958	$0
	28	Remove Holding Apron at Taxiway B and H (Ultimate B5) Intersection Remove Holding Apron at Taxiway B and Q (Ultimate B9) Intersection Construct Single-Lane Holding Bay at East End of Taxiway B Construct Single-Lane Holding Bay at West End of Taxiway B	$1,220,000	$1,110,932	$54,534	$54,534	$0
	30	Replace Airfield Signage to Reflect Taxiway Nomenclature Changes	$618,000	$562,751	$27,625	$27,625	$0
	31	Install REILs - Runway 4L-22R	$110,000	$100,166	$4,917	$4,917	$0
	32	Construct New Terminal Building (16,000 sf)	$8,000,000	All potential funding sources will be explored.			
	33	Construct Airport Operations/Maintenance Facility	$510,000	$464,406	$22,797	$22,797	$0
Intermediate-Term Projects (continued)							
FY 2026-2030	34	Construct Apron and Aircraft Wash Rack (4,700 sy)	$1,522,000	$1,385,933	$68,033	$68,033	$0
	35	Construct Apron Pavement (7,125 sy)	$630,000	$573,678	$28,161	$28,161	$0
	36	Install Pedestrian Gate Near E Ryan Rd and S Curtiss Way Intersection	$5,000	$0	$0	$5,000	$0
	37	Utilities/Sitework for Non-Aviation Development Reserve Site with Floodplain Restrictions (11.4 Acres)	$4,470,000	$0	$0	$0	$4,470,000
	38	Utilities/Sitework for Non-Aviation Development Reserve Site (4.8 Acres)	$1,890,000	$0	$0	$0	$1,890,000
	39	Utilities/Sitework for North Side Executive Hangar Development Reserve Site (4.3 Acres)	$2,320,000	$0	$0	$0	$2,320,000
	40	Utilities/Sitework for North Side Small Aircraft Facilities Development Reserve Site (3.3 Acres)	$1,472,300	$0	$0	$0	$1,472,300
	41	Utilities/Sitework for North Side Large-Scale SASO/MRO Reserve Site (15.5 Acres)	$6,080,000	$0	$0	$0	$6,080,000
	42	Utilities/Sitework for North Side FBO/SASO Development Reserve Site (3.1 Acres)	$1,216,200	$0	$0	$0	$1,216,200
	43	Pavement Maintenance Management	$500,000	$0	$0	$500,000	$0
Long-Term Projects							
FY 2031-2040	44	Utilities/Sitework for South Side Executive Hangar Development Reserve Site (27.4 Acres)	$10,750,000	$0	$0	$0	$10,750,000
	45	Utilities/Sitework for South Side Small Aircraft Facilities Development Reserve Site (17.6 Acres)	$6,903,200	$0	$0	$0	$6,903,200
	46	Utilities/Sitework for South Side FBO/SASO Development Reserve Site (19.5 Acres)	$7,650,000	$0	$0	$0	$7,650,000
	47	Install South Side Fuel Farm	$800,000	$0	$0	$0	$800,000
	48	Remove Holding Apron at Taxiway C and H (Ultimate C1) Intersection Remove Holding Apron at Taxiway C and Q (Ultimate C5) Intersection	$270,000	$245,862	$12,069	$12,069	$0 $0
	49	Reroute Perimeter Service Road Around Taxiway C Holding Bays	$712,000	$648,347	$31,826	$31,826	$0
	50	Construct Multi-lane Holding Bay at West End of Taxiway C	$800,000	$728,480	$35,760	$35,760	$0
	51	Construct Multi-lane Holding Bay at East End of Taxiway C	$800,000	$728,480	$35,760	$35,760	$0
	52	Construct Roundabout at E Ryan Rd and S Curtiss Way	$300,000	$0	$0	$300,000	$0
	53	Pavement Maintenance Management	$1,000,000	$0	$0	$1,000,000	$0
		Short-Term CIP Subtotal	**$21,030,775**	**$12,569,012**	**$3,404,474**	**$5,057,289**	**$0**
		Intermediate-Term CIP Subtotal	**$49,856,500**	**$20,982,045**	**$1,029,977**	**$2,395,977**	**$17,448,500**
		Long-Term CIP Subtotal	**$29,985,200**	**$2,351,169**	**$115,415**	**$1,415,415**	**$26,103,200**
		Total Master Plan CIP	**$100,872,475**	**$35,902,226**	**$4,549,867**	**$8,868,682**	**$43,551,700**

Note: Funding subtotals do not add up to the estimated total master plan CIP due to the uncertainty of funding sources for the new terminal building.



SHORT-TERM PROJECTS (FY 2021-2025)

2021
1. Annual Pavement Maintenance Program - Runway 4L-22R
2. Replace Tower Transceiver Radios (NP)
3. Airfield Lighting Improve/Rwy 4L-22R PAPI Replacement

2022
4. Annual Pavement Maintenance Program - Taxiway A and Connectors
5. Rehabilitate Runway 4R-22L Pavement and Lighting Rehabilitation
6. Airport Fuel Tank Relocation
7. Taxiway B Extension - Phase I

2023
8. Annual Pavement Maintenance Program - City Hangars Asphalt (A-L)
9. Runway 4R-22L Extension - (Professional Services)
10. North Terminal Apron Reconstruction Phase II
11. Wildlife Exclusion Perimeter Fence

2024
12. Annual Pavement Maintenance Program - Taxiway B
13. Runway 4R-22L Extension - (Environmental)
14. Rehabilitate Hangar Area Pavement
15. Rehabilitate Armory Apron Pavement - Phase I

2025
16. Annual Pavement Maintenance Program - San Tan Ramp Tie-downs
17. Runway 4R-22L Extension - (Design)
18. Rehabilitate Armory Apron Pavement - Phase II

INTERMEDIATE-TERM PROJECTS (FY 2026-2030)

19. Annual Pavement Maintenance Program - Terminal North Apron Phase 1/2; Taxiway C
20. Runway 4R-22L Extension - (Construction)
21. Rehabilitate North Terminal Apron Taxilane
22. San Tan Apron Reconstruction
23. Heliport Area Reconstruction
24. Taxiway B Extension - Phase II
25. Construct Blast Pads - Runway 4R-22L
26. Taxiway Fillet Improvements to Meet TDG 2 Standards
27. Remove Taxiway M Connector to Runway 4L-22R
Remove Taxiway J Connector to Runway 4L-22R
Remove Taxiway H Connector to Runway 4L-22R North of Taxiway B
Relocate Taxiway F Connector from Apron to Taxiway A
Remove Holding Apron at East End of Taxiway A (Runway 22R Threshold)
28. Relocate Taxiway Q from Quantum Apron (Ultimate C10)
Relocate Taxiway N Connector to Runway 4R-22L (Ultimate C3)
29. Remove Holding Apron at Taxiway B and H (Ultimate B5) Intersection
Remove Holding Apron at Taxiway B and Q (Ultimate B9) Intersection
Construct Single-Lane Holding Bay at East End of Taxiway B
Construct Single-Lane Holding Bay at West End of Taxiway B
30. Replace Airfield Signage to Reflect Taxiway Nomenclature Changes (NP)
31. Install REILs - Runway 4L-22R
32. Construct New Terminal Building (16,000 sf)
33. Construct Airport Operations/Maintenance Facility
34. Construct Apron and Aircraft Wash Rack (4,700 sy)
35. Construct Apron Pavement (7,125 sy)
36. Install Pedestrian Gate Near E Ryan Rd and S Curtiss Way Intersection
37. Utilities/Sitework for Non-Aviation Development Reserve Site with Floodplain Restrictions (11.4 Acres)
38. Utilities/Sitework for Non-Aviation Development Reserve Site (4.8 Acres)
39. Utilities/Sitework for North Side Executive Hangar Development Reserve Site (4.3 Acres)
40. Utilities/Sitework for North Side Small Aircraft Facilities Development Reserve Site (3.3 Acres)
41. Utilities/Sitework for North Side Large-Scale SASO/MRO Reserve Site (15.5 Acres)
42. Utilities/Sitework for North Side FBO/SASO Development Reserve Site (3.1 Acres)
43. Pavement Maintenance Management (NP)

LONG-TERM PROJECTS (FY 2031-2040)

44. Utilities/Sitework for South Side Executive Hangar and Mixed-Use Development Reserve Sites (27.4 Acres)
45. Utilities/Sitework for South Side Small Aircraft Facilities and Mixed-Use Development Reserve Sites (17.6 Acres)
46. Utilities/Sitework for South Side FBO/SASO Development Reserve Site (19.5 Acres)
47. Install South Side Fuel Farm
48. Remove Holding Apron at Taxiway C and H (Ultimate C1) Intersection
Remove Holding Apron at Taxiway C and Q (Ultimate C5) Intersection
49. Reroute Perimeter Service Road Around Taxiway C Holding Bays
50. Construct Multi-lane Holding Bay at West End of Taxiway C
51. Construct Multi-lane Holding Bay at East End of Taxiway C
52. Construct Roundabout at E Ryan Rd and S Curtiss Way
53. Pavement Maintenance Management (NP)

Runway 4L-22R 4,401' x 75'

Runway 4R-22L 4,870' x 75' (5,550' x 75' Ultimate)

E Queen Creek Rd

S Cooper Rd

Aviation Dr

Germann Road

E Ryan Rd

S Curtiss Way

S Stinson Way

S Heliport Way

Emmett Dr

Insight Way

LEGEND

- Existing Airport Property Line
- A — Taxiway Designation
- Runway Protection Zone (RPZ)
- Short-Term Project
- Intermediate-Term Project
- Long-Term Project
- NP — Not Pictured

N

0 800

SCALE IN FEET

Photo: Woolpert 11/2019

Project #1: Annual Pavement Maintenance Program - Runway 4L-22R
Description: This project will rehabilitate the runway pavement to maintain a safe operating environment.
Cost Estimate: $368,500
Funding Breakdown: Airport Sponsor – 100.00%

Project #2: Replace Tower Transceiver Radios
Description: Per a 1997 operating agreement with the Federal Aviation Administration (FAA), the City is responsible for maintaining the equipment necessary for the Air Traffic Control Tower's (ATCT's) operation. The ATCT has six receivers and five transmitters that allow the air traffic controllers to communicate with aircraft in the air and on the airfield. These radios are nearing the end of their service life and the manufacturer has notified the airport that support will be ending in the near future, resulting in a lack of parts availability. This project will replace the eleven units and install a new 800-megahertz, 16-channel radio.
Cost Estimate: $851,000
Funding Breakdown: Airport Sponsor – 100.00%

Project #3: Airfield Lighting Improve/Runway 4L-22R PAPI Replacement
Description: Existing electrical wiring was installed in early 1990s and is at the end of its useful life. System has low megger readings and aging light fixtures and PAPIs. This project replaces the airfield wiring, light fixtures, and PAPIs to meet standards.
Cost Estimate: $1,724,000
Funding Breakdown: FAA – 91.06 percent / ADOT – 4.47 percent / Airport Sponsor – 4.47 percent.

Project #4: Annual Pavement Maintenance Program - Taxiway A and Connectors
Description: This project will rehabilitate the taxiway pavement to maintain a safe operating environment.
Cost Estimate: $664,200
Funding Breakdown: Airport Sponsor – 100.00%

Project #5: Rehabilitate Runway 4R-22L Pavement and Lighting
Description: Runway 4R-22L is experiencing large block cracking and some surface raveling. This project will rehabilitate the runway pavement and runway lighting to maintain a safe operating environment.
Cost Estimate: $2,825,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #6: Airport Fuel Tank Relocation
Description: This project replaces the existing underground storage tank with an above ground tank adjacent to the existing self-service station on the terminal apron.
Cost Estimate: $610,000
Funding Breakdown: Airport Sponsor – 100.00%

Project #7: Taxiway B Extension - Phase I
Description: There is currently only one access point to the Runway 22L threshold from the north side. Extending Taxiway B west to Taxiway L improves circulation and mitigates airfield hot spot #1 (congestion on Taxiway N at the Runway 22R threshold).
Cost Estimate: $2,035,200
Funding Breakdown: ADOT – 90.00% / Airport Sponsor – 10.00%

Project #8: Annual Pavement Maintenance Program - City Hangars Asphalt (A-L)
Description: This project will rehabilitate the taxilane pavement to maintain a safe operating environment.
Cost Estimate: $433,125
Funding Breakdown: Airport Sponsor – 100.00%

Project #9: Runway 4R-22L Extension (Professional Services)
Description: An extension to the primary runway is planned to improve operational safety for turbine aircraft operating at CHD. This project involves initial professional services.
Cost Estimate: $350,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #10: North Terminal Apron Reconstruction Phase II
Description: The terminal apron has many wide cracks throughout and has become a safety hazard to aircraft and pedestrians. Full-depth reconstruction of approximately 22,000 square yards (sy) is planned.
Cost Estimate: $1,860,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #11: Wildlife Exclusion Perimeter Fence
Description: CHD experiences continual coyote presence and other ground species encroaching into the movement area. The current fence is inadequate to prevent burrowing animals. This project involves the design and installation of 27,000 linear feet (lf) of enhanced fencing along the airport perimeter in accordance with the airport's analysis of strategies to mitigate wildlife within the airfield system.
Cost Estimate: $1,062,000
Funding Breakdown: ADOT – 90.00% / Airport Sponsor – 10.00%

Project #12: Annual Pavement Maintenance Program - Taxiway B
Description: This project will rehabilitate the taxiway pavement to maintain a safe operating environment.
Cost Estimate: $243,750
Funding Breakdown: Airport Sponsor – 100.00%

Project #13: Runway 4R-22L Extension (Environmental)
Description: An extension to the primary runway is planned to improve operational safety for turbine aircraft operating at CHD. This project involves the preparation of an Environmental Assessment to evaluate potential environmental impacts of an extension.
Cost Estimate: $427,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #14: Rehabilitate Hangar Area Pavement
Description: Significant raveling, block cracking, and some alligator cracking on this apron requires reconstruction to maintain safe operating conditions. This project would reconstruct approximately 56,000 sy.
Cost Estimate: $3,092,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #15: Rehabilitate Armory Apron Pavement - Phase I
Description: The armory apron pavement is experiencing significant wide cracking and is becoming a safety concern for aircraft wheelgear and pedestrians. This project would reconstruct approximately 25,000 sy.
Cost Estimate: $1,720,000
Funding Breakdown: ADOT – 90.00% / Airport Sponsor – 10.00%

Project #16: Annual Pavement Maintenance Program - San Tan Ramp Tie-downs
Description: This project will rehabilitate the apron pavement to maintain a safe operating environment.
Cost Estimate: $610,000
Funding Breakdown: Airport Sponsor – 100.00%

Project #17: Runway 4R-22L Extension (Design)
Description: This project is the final design and construction of a 680-foot extension to the primary runway. The resulting full-length of the runway will be 5,550 feet.
Cost Estimate: $435,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #18: Rehabilitate Armory Apron Pavement - Phase II
Description: The armory apron pavement is experiencing significant wide cracking and is becoming a safety concern for aircraft wheelgear and pedestrians. This project would reconstruct approximately 25,000 sy.
Cost Estimate: $1,720,000
Funding Breakdown: ADOT – 90.00% / Airport Sponsor – 10.00%

Short-Term Program Summary

The short-term CIP includes projects that enhance the overall safety, efficiency, and maintenance of the airfield. The total investment necessary for the short-term CIP is approximately $21.03 million as detailed on **Exhibit 6A**. A significant amount of the short-term program costs are associated with pavement rehabilitation. As previously discussed, further engineering analysis will determine the degree of pavement rehabilitation associated with the runways and apron areas. Of the overall short-term CIP total, approximately $15.97 million is eligible for federal and state funding assistance. The remaining approximate $5.06 million is to be provided through airport sponsor funding outlets.

INTERMEDIATE-TERM PROGRAM

The intermediate-term projects are those that are anticipated to be necessary in years six through 10 of the Master Plan. These projects are not tied to specific years for implementation; instead, they have been prioritized so that airport management has the flexibility to determine when they need to be pursued based on current conditions. It is not unusual for certain projects to be delayed or advanced based on changing conditions, such as funding availability or changes in the aviation industry. This planning horizon includes 25 projects for the five-year timeframe as listed on **Exhibit 6A** and depicted on **Exhibit 6B**. The following section includes a description of each project.

Project #19: Annual Pavement Maintenance Program - Terminal North Apron Phase 1/2; Taxiway C
Description: This project will rehabilitate the apron and taxiway pavement to maintain a safe operating environment.
Cost Estimate: $861,000
Funding Breakdown: Airport Sponsor – 100.00%

Project #20: Runway 4R-22L Extension (Construction)
Description: This project is the construction of a 680-foot extension to the primary runway. The resulting full-length of the runway will be 5,550 feet.
Cost Estimate: $5,404,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #21: Rehabilitate North Terminal Apron Taxilane
Description: This pavement area is cracking and has not been sealed or patched since 2014. This project would repair approximately 11,300 sy of pavement that is planned to support new landside facility development on the north side.
Cost Estimate: $378,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #22: San Tan Apron Reconstruction
Description: The San Tan apron is approximately 14,000 sy of apron pavement that caps a Declaration of Environmental Use Restriction (DEUR) area north of the Runway 22R threshold. This pavement is cracking, which allows stormwater into the subgrade, which exacerbates contamination. This project will reconstruct this pavement and add multi-lane holding bay markings.
Cost Estimate: $670,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #23: Heliport Area Reconstruction
Description: This pavement has poor subgrade, which has settled, shifted, and shrunk, resulting in cracks and heaving in the apron pavement. This project reconstructs approximately 33,400 sy.
Cost Estimate: $2,600,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #24: Taxiway B Extension - Phase II
Description: This project extends Taxiway B to the Runway 4L threshold, creating a full-length taxiway between both runways. This will improve airfield circulation and operational safety.
Cost Estimate: $4,080,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #25: Construct Blast Pads - Runway 4R-22L
Description: The existing blast pads on the primary runway are undersized. This project will expand the blast pads to 95 feet wide and 150 feet long to meet design standards.
Cost Estimate: $470,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #26: Taxiway Fillet Improvements to Meet TDG 2 Standards
Description: Existing fillets do not meet taxiway design group (TDG) 2 standards. This project adds fillet pavement to accommodate safe aircraft transitions at airfield intersections.
Cost Estimate: $2,600,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #27: Remove/Relocate Taxiway Pavement to Improve Airfield Geometry (North Side)
Description: This project involves the removal of existing taxiway connectors that provide for direct-access points from the north side apron areas to Runway 4L-22R, or intersecting pavement in the runway's high energy area. These improvements are intended to mitigate the potential for runway incursions and comply with FAA design standards.
Cost Estimate: $1,090,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #28: Relocate Taxiway Pavement to Improve Airfield Geometry (South Side)
Description: This project relocates connecting taxiways on the south side of the airfield to eliminate a direct access point to Runway 4R-22L and to eliminate a high-energy area intersection.
Cost Estimate: $1,140,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #29: Replace Holding Aprons with Holding Bays
Description: The existing holding aprons on the airfield are out of compliance with FAA design standards. This project removes the existing holding aprons along Taxiway B and replaces them with single lane holding bays.
Cost Estimate: $1,220,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #30: Replace Airfield Signage to Reflect Taxiway Nomenclature Changes
Description: The taxiway system designations do not meet FAA standards. This project redesignates out-of-compliance taxiways and includes replacement of airfield signage to reflect the new designations.
Cost Estimate: $618,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #31: Install REILs - Runway 4L-22R
Description: REILs improve operational safety by providing pilots with improved situational awareness and helping them to identify the runway end. This project adds REILs to Runway 4L-22R.
Cost Estimate: $110,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #32: Construct New Terminal Building (16,000 sf)
Description: A new terminal building will provide for expanded and modernized terminal services. The new building will include administrative office space as well as leasable space for aviation businesses.
Cost Estimate: $8,000,000
Funding Breakdown: General aviation terminal buildings are not typically eligible for FAA or ADOT grant funding assistance. However, there are often opportunities for public/private partnerships in developing major public-use infrastructure such as this. All potential funding options will be explored in the development of the new terminal building.

Project #33: Construct Airport Operations/Maintenance Facility
Description: A new operations/maintenance facility located adjacent to the new terminal building will consolidate these activities in a centralized location on the airport. This will allow for better responsiveness to airport users and more efficient coordination among airport staff.
Cost Estimate: $510,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #34: Construct Apron and Aircraft Wash Rack
Description: Aircraft wash racks are common amenities at many general aviation airports. This project adds a wash rack and additional apron pavement to a one-acre site that was previously used as a dump site for construction debris sometime between 1949 and 1964. The City of Chandler has determined this site can be capped with asphalt and returned to useable airport property.
Cost Estimate: $1,522,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #35: Construct Apron Pavement (7,125 sy)
Description: New apron pavement on the north side to provide additional aircraft parking/tiedown capacity.
Cost Estimate: $630,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #36: Install Pedestrian Gate Near E Ryan Rd and S Curtiss Way Intersection
Description: Airport tenants have requested an access gate be added in this location to improve accessibility to aircraft parked on the Armory apron.
Cost Estimate: $5,000
Funding Breakdown: Airport Sponsor – 100.00%

Project #37: Utilities/Sitework for Non-Aviation Development Reserve Site with Floodplain Restrictions (11.4 Acres)
Description: This project involves adding appropriate utility infrastructure and sitework that would accommodate new development. The airport plans to make minimal improvements to this site, which will allow potential developers greater flexibility in developing the site to meet their needs.
Cost Estimate: $4,470,000
Funding Breakdown: Private Developer – 100.00%

Project #38: Utilities/Sitework for Non-Aviation Development Reserve Site (4.8 Acres)
Description: This project involves adding appropriate utility infrastructure and sitework that would accommodate new development. The airport plans to make minimal improvements to this site, which will allow potential developers greater flexibility in developing the site to meet their needs.
Cost Estimate: $1,890,000
Funding Breakdown: Private Developer – 100.00%

Project #39: Utilities/Sitework for North Side Executive Hangar Development Reserve Site (4.3 Acres)
Description: This project involves adding appropriate utility infrastructure and sitework that would accommodate new development. The airport plans to make minimal improvements to this site, which will allow potential developers greater flexibility in developing the site to meet their needs.
Cost Estimate: $2,320,000
Funding Breakdown: Private Developer – 100.00%

Project #40: Utilities/Sitework for North Side Small Aircraft Facilities Development Reserve Site (3.3 Acres)
Description: This project involves adding appropriate utility infrastructure and sitework that would accommodate new development. The airport plans to make minimal improvements to this site, which will allow potential developers greater flexibility in developing the site to meet their needs.
Cost Estimate: $1,472,300
Funding Breakdown: Private Developer – 100.00%

Project #41: Utilities/Sitework for North Side Large-Scale SASO/MRO Reserve Site (15.5 Acres)
Description: This project involves adding appropriate utility infrastructure and sitework that would accommodate new development. The airport plans to make minimal improvements to this site, which will allow potential developers greater flexibility in developing the site to meet their needs.
Cost Estimate: $6,080,000
Funding Breakdown: Private Developer – 100.00%

Project #42: Utilities/Sitework for North Side FBO/SASO Development Reserve Site (3.1 Acres)
Description: This project involves adding appropriate utility infrastructure and sitework that would accommodate new development. The airport plans to make minimal improvements to this site, which will allow potential developers greater flexibility in developing the site to meet their needs.
Cost Estimate: $1,216,200
Funding Breakdown: Private Developer – 100.00%

Project #43: Pavement Maintenance Management
Description: As airfield pavements deteriorate over time, it is necessary to undergo overlay/rehabilitation/reconstruction projects.
Cost Estimate: $500,000
Funding Breakdown: Airport Sponsor – 100.00%

Intermediate-Term Program Summary

The total costs associated with the intermediate term program are estimated at $49.86 million as presented on **Exhibit 6A**. Of this total, approximately $22.01 million could be eligible for federal/state funding, and the airport sponsor share is projected at $2.40 million. Private funding is estimated at $17.45 million.

LONG-TERM PROGRAM

The long-term planning horizon considers 10 projects for the 10-year period that are mainly demand-driven. The projects and their associated costs are listed on **Exhibit 6A** and graphically depicted on **Exhibit 6B** as appropriate.

Project #44: Utilities/Sitework for South Side Executive Hangar Development Reserve Site (27.4 Acres)
Description: This project involves adding appropriate utility infrastructure and sitework that would accommodate new development. The airport plans to make minimal improvements to this site, which will allow potential developers greater flexibility in developing the site to meet their needs.
Cost Estimate: $10,750,000
Funding Breakdown: Private Developer – 100.00%

Project #45: Utilities/Sitework for South Side Small Aircraft Facilities Development Reserve Site (17.6 Acres)
Description: This project involves adding appropriate utility infrastructure and sitework that would accommodate new development. The airport plans to make minimal improvements to this site, which will allow potential developers greater flexibility in developing the site to meet their needs.
Cost Estimate: $6,903,200
Funding Breakdown: Private Developer – 100.00%

Project #46: Utilities/Sitework for South Side FBO/SASO Development Reserve Site (19.5 Acres)
Description: This project involves adding appropriate utility infrastructure and sitework that would accommodate new development. The airport plans to make minimal improvements to this site, which will allow potential developers greater flexibility in developing the site to meet their needs.
Cost Estimate: $7,650,000
Funding Breakdown: Private Developer – 100.00%

Project #47: Install South Side Fuel Farm
Description: As activity levels grow with new south side developments, it will become necessary to install a fuel farm to eliminate the need for fuel trucks to travel to the south side.
Cost Estimate: $800,000
Funding Breakdown: Private Developer – 100.00%

Project #48: Remove Holding Aprons on Taxiway C
Description: The existing holding aprons on the airfield are out of compliance with FAA design standards. This project removes the existing holding aprons along Taxiway C so they can be replaced with holding bays.
Cost Estimate: $270,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #49: Reroute Perimeter Service Road Around Taxiway C Holding Bays
Description: The perimeter service road will need to be rerouted to allow for the construction of two new holding bays on Taxiway C. The road will need to be rerouted so that it lies outside of the taxiway object free area (TOFA).
Cost Estimate: $712,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #50: Construct Multi-Lane Holding Bay at West End of Taxiway C
Description: New multi-lane holding bays are planned that will allow for greater aircraft circulation on the south side of the airfield.
Cost Estimate: $800,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #51: Construct Multi-Lane Holding Bay at East End of Taxiway C
Description: New multi-lane holding bays are planned that will allow for greater aircraft circulation on the south side of the airfield.
Cost Estimate: $800,000
Funding Breakdown: FAA – 91.06% / ADOT – 4.47% / Airport Sponsor – 4.47%

Project #52: Construct Roundabout at E Ryan Rd and S Curtiss Way
Description: A roundabout at this intersection is a safety improvement and will be consistent with the surrounding Chandler Airpark roadway network, which features several roundabouts.
Cost Estimate: $300,000
Funding Breakdown: Airport Sponsor – 100.00%

Project #53: Pavement Maintenance Management
Description: As airfield pavements deteriorate over time, it is necessary to undergo overlay/rehabilitation/reconstruction projects.
Cost Estimate: $1,000,000
Funding Breakdown: Airport Sponsor – 100.00%

Long-Term Program Summary

The total investment necessary for the long-term CIP detailed on **Exhibit 6A** is approximately $29.99 million. Approximately $2.47 million is eligible for federal/state funding assistance. The airport's share of long-term projects is projected at $1.42 million. Private development funding is projected at $26.10 million.

CAPITAL IMPROVEMENT PROGRAM SUMMARY

The CIP is intended as a road map of improvements to help guide the City of Chandler, the FAA, and ADOT – Aeronautics Group. The plan as presented will help accommodate increases in forecast demand at CHD over the next 20 years and beyond. The sequence of projects may change due to availability of funds or changing priorities based on an annual review by airport management, the FAA, and ADOT – Aeronautics Group. Nonetheless, this is a comprehensive list of capital projects the airport should consider in the next 20+ years.

The total CIP proposes approximately $100.8 million in airport development needs. Of this total, approximately $40.45 million could be eligible for federal/state funding assistance. The local funding estimate for the proposed CIP is $8.87million. Private development makes up a significant portion of the CIP at $43.55million, accounting for the bulk of the landside development.

CAPITAL IMPROVEMENT FUNDING SOURCES

There are generally four sources of funds used to finance airport development, which include:

- Airport cash flow
- Revenue and general obligation bonds
- Federal/state/local grants
- Passenger facility charges (PFCs), which are reserved for commercial service airports

Access to these sources of financing varies widely among airports, with some large airports maintaining substantial cash reserves and the smaller commercial service and general aviation airports often requiring subsidies from local governments to fund operating expenses and finance modest improvements.

Financing capital improvements at CHD will not rely solely on the financial resources of the City of Chandler. Capital improvement funding is available through various grant-in-aid programs on both the federal and state levels. Historically, the airport has received federal and state grants. While more funds could be available some years, the CIP was developed with project phasing to remain realistic and within the range of anticipated grant assistance. The following discussion outlines key sources of funding potentially available for capital improvements at the airport.

FEDERAL GRANTS

Through federal legislation over the years, various grant-in-aid programs have been established to develop and maintain a system of public-use airports across the United States. The purpose of this system and its federally based funding is to maintain national defense and to promote interstate commerce. The *FAA Modernization and Reform Act of 2012*, enacted on February 17, 2012, authorized the FAA's AIP at $3.35 billion for fiscal years 2012 through 2015. The law was then extended through a series of continuing resolutions. In 2016, Congress passed legislation (H.R. 636, *FAA Extension, Safety, and Security Act of 2016*) amending the law to expire on September 30, 2017. Subsequently, Congress passed a bill (H.R. 3823, *Disaster Tax Relief and Airport and Airway Extension Act of 2017*) authorizing appropriations to the FAA through March 31, 2018, and the *Consolidated Appropriations Act, 2018* extended FAA's funding and authority through September 30, 2018. In October 2018, Congress passed legislation entitled, *FAA Reauthorization Act of 2018*, which will fund the FAA's AIP at $3.35 billion annually until 2023. This bill reauthorizes the FAA for five years, at a cost of $97 billion, and represents the longest funding authorization period for the FAA since 1982.

The source for AIP funds is the Aviation Trust Fund. The Aviation Trust Fund was established in 1970 to provide funding for aviation capital investment programs (aviation development, facilities and equipment, and research and development). The Aviation Trust Fund also finances the operation of the FAA. It is funded by user fees, including taxes on airline tickets, aviation fuel, and various aircraft parts.

Several projects identified in the CIP are eligible for FAA funding through the AIP, which provides entitlement funds to airports based, in part, on their annual enplaned passengers and pounds of landed cargo weight. Additional AIP funds, designated as discretionary, may also be used for eligible projects based on the FAA's national priority system. Although the AIP has been reauthorized several times and

the funding formulas have been periodically revised to reflect changing national priorities, the program has remained essentially the same. Public-use airports that serve civil aviation, like CHD, may receive AIP funding for eligible projects, as described in FAA's *Airport Improvement Program Handbook.* The airport must fund the remaining project costs using a combination of other funding sources, as discussed in the following sections.

Table 6B presents the approximate distribution of the AIP funds as described in FAA Order 5100.38D, Change 1, *Airport Improvement Program Handbook*, issued February 26, 2019. CHD is eligible to apply for grants which may be funded through state apportionments, the small airport fund, discretionary funds, and/or set-aside categories.

TABLE 6B
Federal AIP Funding Distribution
Chandler Municipal Airport

Funding Category	Percent of Total	Funds*
Apportionment/Entitlement		
Passenger Entitlements	27.01%	$904,840,000
Cargo Entitlements	3.50%	$117,250,000
Alaska Supplemental	0.67%	$22,450,000
Nonprimary Entitlements	12.01%	$402,340,000
State Apportionment	7.99%	$267,670,000
Carryover	22.85%	$765,480,000
Small Airport Fund		
Small Hubs	2.33%	$78,060,000
Nonhubs	4.67%	$156,450,000
Nonprimary (GA and Reliever)	9.33%	$312,560,000
Discretionary		
Capacity/Safety/Security/Noise	4.36%	$146,060,000
Pure Discretionary	1.45%	$48,580,000
Set Asides		
Noise and Environmental	3.37%	$112,900,000
Military Airports Program	0.39%	$13,070,000
Reliever	0.06%	$2,010,000
Totals	**100.00%**	**$3,350,000,000**

* FAA *Modernization and Reform Act of 2018*
AIP: Airport Improvement Program
Source: FAA Order 5100.38D, Change 1, Airport Improvement Program Handbook

Funding for AIP-eligible projects is undertaken through a cost-sharing arrangement in which the FAA share varies by airport size: generally, 75 percent for large- and medium-hub airports, and 90 percent for all other airports. Since the early days of federal participation in airport infrastructure projects, Congress has provided a higher federal share for airports located in states with more than five percent of their geographic acreage comprised of public lands and nontaxable tribal lands. For states that qualify, such as Arizona, the federal share is increased depending on the airport classification. As a general aviation airport, the federal share of eligible capital improvement projects for CHD is 91.06 percent. In exchange for this level of funding, the airport sponsor is required to meet various Grant Assurances, including maintaining the improvement for its useful life, usually 20 years.

Apportionment (Entitlement) Funds

AIP provides funding for eligible projects at airports through an apportionment (entitlement) program. Primary commercial service airports receive a guaranteed minimum level of federal assistance each year, based on their enplaned passenger levels and Congressional appropriation levels. A primary airport is defined as any commercial service airport enplaning at least 10,000 passengers annually. If the threshold is met, the airport receives $1 million annually in entitlement funds. Other entitlement funds are distributed to cargo service airports, states and insular areas (state apportionment), and Alaska airports.

General aviation airports included in the *National Plan of Integrated Airport Systems* (NPIAS) can receive up to $150,000 each year in non-primary entitlement (NPE) funds. These funds can be carried over and combined for up to four years, thereby allowing for completion of a more expensive project. It should be noted that CHD is eligible for and receives NPE funds.

The FAA also provides a state apportionment based on a federal formula that takes into account area and population. The FAA then distributes these funds for projects at various airports throughout the state.

Small Airport Fund

If a large- or medium-hub commercial service airport chooses to institute a PFC, which is a fee of up to $4.50 on each airline ticket for funding of capital improvement projects, then their apportionment is reduced. A portion of the reduced apportionment goes to the small airport fund. The small airport fund is reserved for small-hub primary commercial service airports, non-hub commercial service airports, reliever, and general aviation airports. As a general aviation airport, CHD is eligible for funds from this source.

Discretionary Funds

In several cases, airports face major projects that will require funds in excess of the airport's annual entitlements. Thus, additional funds from discretionary apportionments under AIP become desirable. The primary feature about discretionary funds is that they are distributed on a priority basis. The priorities are established by the FAA, utilizing a priority code system. Under this system, projects are ranked by their purpose. Projects ensuring airport safety and security are ranked as the most important priorities, followed by maintaining current infrastructure development, mitigating noise and other environmental impacts, meeting standards, and increasing system capacity.

It is important to note that competition for discretionary funding is not limited to airports in the State of Arizona or those within the FAA Western-Pacific Region. The funds are distributed to all airports in the country and, as such, are more difficult to obtain. High priority projects will often fare favorably, while lower priority projects may not receive discretionary grants.

Set-Aside Funds

Portions of AIP funds are set-asides designed to achieve specific funding minimums for noise compatibility planning and implementation, select former military airfields (Military Airports Program), and select reliever airports. As a reliever airport, CHD qualifies for set-aside funding.

FAA Facilities and Equipment (F&E) Program

The Airway Facilities Division of the FAA administers the Facilities and Equipment (F&E) Program. This program provides funding for the installation and maintenance of various navigational aids and equipment of the national airspace system. Under the F&E program, funding is provided for FAA airport traffic control towers (ATCTs), enroute navigational aids, on-airport navigational aids, and approach lighting systems.

While F&E still installs and maintains some navigational aids, on-airport facilities at general aviation airports have not been a priority. Therefore, airports often request funding assistance for navigational aids through AIP and then maintain the equipment on their own[1].

STATE FUNDING PROGRAMS

The ADOT – Aeronautics Group recognizes the valuable contribution to the state's transportation economy that airports make. Therefore, it administers several programs to aid in maintaining airports in the state. The source for state airport improvement funds is the Arizona Aviation Fund. Taxes levied by the state on aviation fuel, flight property, aircraft registration tax, and registration fees (as well as interest on these funds) are deposited in the Arizona Aviation Fund. The State Transportation Board establishes the policies for distribution of these state funds.

Under the State of Arizona's grant program, an airport can receive funding for one-half (currently 4.47 percent) of the local share of projects receiving federal AIP funding. The state also provides 90 percent funding for projects which are typically not eligible for federal AIP funding or have not received federal funding. CHD is eligible for these funding allocations.

Pavement Maintenance Program

The airport system in Arizona is a multi-million-dollar investment of public and private funds that must be protected and preserved. State aviation fund dollars are limited, and the State Transportation Board recognizes the need to protect and extend the maximum useful life of the airport system's pavement. The Arizona Pavement Management System (APMS) has been established to assist in the preservation of Arizona airports' system infrastructure.

[1] Guidance on the eligibility of a project for federal AIP grant funding can be found in FAA Order 5100.38D, *Airport Improvement Program Handbook*.

Public Law 103-305 requires that airports requesting federal AIP funding for pavement rehabilitation or reconstruction have an effective pavement maintenance program system. To this end, ADOT – Aeronautics Group maintains the APMS.

The Arizona APMS uses the Army Corps of Engineers' "Micropaver" program as a basis for generating a Five-Year Arizona Pavement Preservation Program (APPP). The APPP consists of visual inspections of all airport pavements. Evaluations are made of the types and severities observed, and then entered into a computer program database. PCI values are determined through the visual assessment of pavement conditions in accordance with the most recent FAA Advisory Circular 150/5380-7, *Pavement Management System*, and range from 0 (failed) to 100 (excellent). Every three years, a complete database update with new visual observations is conducted. Individual airport reports from the update are shared with all participating system airports. ADOT – Aeronautics Group ensures that the APMS database is kept current, in compliance with FAA requirements.

Every year, ADOT – Aeronautics Group, utilizing the APMS, will identify airport pavement maintenance projects eligible for funding for the upcoming five years. These projects will appear in the state's Five-Year Airport Development Program. Once a project has been identified and approved for funding by the State Transportation Board, the airport sponsor may elect to accept a state grant for the project and not participate in the APPP, or the sponsor may sign an Inter-Government Agreement (IGA) with ADOT-MPD – Aeronautics Group to participate in the APPP. CHD participates in this program.

LOCAL FUNDING

The balance of project costs, after consideration has been given to grants, must be funded through local resources. A goal for any airport is to generate enough revenue to cover all operating and capital expenditures, if possible. There are several local financing options to consider when funding future development at airports, including airport revenues, issuance of a variety of bond types, leasehold financing, implementing a customer facility charge (CFC), pursuing non-aviation development potential, and collecting from special events. These strategies could be used to fund the local matching share or complete a project if grant funding cannot be arranged. Below is a brief description of the most common local funding options.

Airport Revenues

An airport's daily operations are conducted through the collection of various rates and charges. These airport revenues are generated specifically by airport operations. There are restrictions on the use of revenues collected by the airport. All receipts, excluding bond proceeds or related grants and interest, are irrevocably pledged to the punctual payment of operating and maintenance expenses, payment of debt service for as long as bonds remain outstanding, or for additions and improvements to airport facilities.

All airports should establish standard basis rates for various leases. All lease rates should be set to adjust to a standard index, such as the consumer price index (CPI), to assure that fair and equitable rates continue to be charged into the future. Many factors will impact what the standard lease rate should be for a particular facility or ground parcel. For example, ground leases for aviation-related facilities should have a different lease rate than for non-aviation leases. When airports own hangars, a separate facility

lease rate should be charged. The lease rate for any individual parcel or hangar can vary due to availability of utilities, condition, location, and other factors. Nonetheless, standard lease rates should fall within an acceptable range.

Bonding

Bonding is a common method to finance large capital projects at airports. A bond is an instrument of indebtedness of the bond issuer to the bond holders, thus a bond is a form of loan or IOU. While bond terms are negotiable, typically the bond issuer is obligated to pay the bond holder interest at regular intervals and/or repay the principal at a later date.

Leasehold Financing

Leasehold financing refers to a private developer or tenant financing improvements under a long-term ground lease. The advantage of this arrangement is that it relieves the airport of the responsibility of having to raise capital funds for the improvement. As an example, an FBO might consider constructing hangars and charging fair market lease rates while paying the airport for a ground lease.

Customer Facility Charge (CFC)

A CFC is the imposition of an additional fee charged to customers for the use of certain facilities. The most common example is when an airport constructs a consolidated rental car facility and imposes a fee for each rental car contract. That fee is then used by the airport to pay down the debt incurred from building the facility.

Non-Aviation Development

In addition to generating revenue from traditional aviation sources, airports with excess land can permit compatible non-aviation development. Generally, an airport will extend a long-term lease for land not anticipated to be needed for aviation purposes in the future. The private developer then pays the monthly lease rate and constructs and uses the compatible facility. Certain areas at CHD have been reserved for non-aviation development. It should be noted that each individual proposed non-aviation development must be reviewed and approved by the FAA.

Special Events

Another common revenue-generating option is permitted use of airport property for temporary or single events. For example, some airports host open house or fly-in events that attracts thousands of spectators from around the region. Airports can also permit portions of their facility to be utilized for non-aviation special events, such as car shows or video production of commercials. This type of revenue generation must be approved by the FAA.

MASTER PLAN IMPLEMENTATION

To implement the master plan recommendations, it is key to recognize that planning is a continuous process and does not end with approval of this document. The airport should implement measures that allow it to track various demand indicators, such as based aircraft, hangar demand, and operations. The issues that this master plan is based on will remain valid for a number of years. The primary goal is for CHD to best serve the air transportation needs of the region, while achieving economic self-sufficiency.

The CIP and the phasing program presented will change over time. An effort has been made to identify and prioritize all major capital projects that would require FAA and ADOT – Aeronautics Group grant funding. Nonetheless, the airport and FAA review the five-year CIP on an annual basis.

The value of this study is keeping the issues and objectives at the forefront of the minds of decision-makers. In addition to adjustments in aviation demand, decisions on when to undertake the improvements recommended in this master plan will impact how long the plan remains valid. The format of this plan reduces the need for formal and costly updates by simply adjusting the timing of project implementation. Updates can be done by airport management, thereby improving the plan's effectiveness. Nonetheless, airports are typically encouraged to update their master plans every 7 to 10 years, or sooner if significant changes occur in the interim.

In summary, the planning process requires the City of Chandler to consistently monitor the progress of the airport. The information obtained from continually monitoring activity will provide the data necessary to determine if the development schedule should be accelerated or decelerated.



Appendix A

GLOSSARY OF TERMS

CHANDLER MUNICIPAL AIRPORT CHD

CHANDLER arizona

Glossary of Terms

A

ABOVE GROUND LEVEL: The elevation of a point or surface above the ground.

ACCELERATE-STOP DISTANCE AVAILABLE (ASDA): See declared distances.

ADVISORY CIRCULAR: External publications issued by the FAA consisting of nonregulatory material providing for the recommendations relative to a policy, guidance and information relative to a specific aviation subject.

AIR CARRIER: An operator which: (1) performs at least five round trips per week between two or more points and publishes flight schedules which specify the times, days of the week, and places between which such flights are performed; or (2) transports mail by air pursuant to a current contract with the U.S. Postal Service. Certified in accordance with Federal Aviation Regulation (FAR) Parts 121 and 127.

AIRCRAFT: A transportation vehicle that is used or intended for use for flight.

AIRCRAFT APPROACH CATEGORY: A grouping of aircraft based on 1.3 times the stall speed in their landing configuration at their maximum certificated landing weight. The categories are as follows:

- Category A: Speed less than 91 knots.
- Category B: Speed 91 knots or more, but less than 121 knots.
- Category C: Speed 121 knots or more, but less than 141 knots.
- Category D: Speed 141 knots or more, but less than 166 knots.
- Category E: Speed greater than 166 knots.

AIRCRAFT OPERATION: The landing, takeoff, or touch-and-go procedure by an aircraft on a runway at an airport.

AIRCRAFT OPERATIONS AREA (AOA): A restricted and secure area on the airport property designed to protect all aspects related to aircraft operations.

AIRCRAFT OWNERS AND PILOTS ASSOCIATION: A private organization serving the interests and needs of general aviation pilots and aircraft owners.

AIRCRAFT RESCUE AND FIRE FIGHTING: A facility located at an airport that provides emergency vehicles, extinguishing agents, and personnel responsible for minimizing the impacts of an aircraft accident or incident.

AIRFIELD: The portion of an airport which contains the facilities necessary for the operation of aircraft.

AIRLINE HUB: An airport at which an airline concentrates a significant portion of its activity and which often has a significant amount of connecting traffic.

AIRPLANE DESIGN GROUP (ADG): A grouping of aircraft based upon wingspan. The groups are as follows:

- Group I: Up to but not including 49 feet.
- Group II: 49 feet up to but not including 79 feet.
- Group III: 79 feet up to but not including 118 feet.
- Group IV: 118 feet up to but not including 171 feet.
- Group V: 171 feet up to but not including 214 feet.
- Group VI: 214 feet or greater.

AIRPORT AUTHORITY: A quasi-governmental public organization responsible for setting the policies governing the management and operation of an airport or system of airports under its jurisdiction.

AIRPORT BEACON: A navigational aid located at an airport which displays a rotating light beam to identify whether an airport is lighted.

AIRPORT CAPITAL IMPROVEMENT PLAN: The planning program used by the Federal Aviation Administration to identify, prioritize, and distribute funds for airport development and the needs of the National Airspace System to meet specified national goals and objectives.

AIRPORT ELEVATION: The highest point on the runway system at an airport expressed in feet above mean sea level (MSL).

AIRPORT IMPROVEMENT PROGRAM: A program authorized by the Airport and Airway Improvement Act of 1982 that provides funding for airport planning and development.

AIRPORT LAYOUT DRAWING (ALD): The drawing of the airport showing the layout of existing and proposed airport facilities.

AIRPORT LAYOUT PLAN (ALP): A scaled drawing of the existing and planned land and facilities necessary for the operation and development of the airport.

AIRPORT LAYOUT PLAN DRAWING SET: A set of technical drawings depicting the current and future airport conditions. The individual sheets comprising the set can vary with the complexities of the airport, but the FAA-required drawings include the Airport Layout Plan (sometimes referred to as the Airport Layout Drawing (ALD), the Airport Airspace Drawing, and the Inner Portion of the Approach Surface Drawing, On-Airport Land Use Drawing, and Property Map.

AIRPORT MASTER PLAN: The planner's concept of the long-term development of an airport.

AIRPORT MOVEMENT AREA SAFETY SYSTEM: A system that provides automated alerts and warnings of potential runway incursions or other hazardous aircraft movement events.

AIRPORT OBSTRUCTION CHART: A scaled drawing depicting the Federal Aviation Regulation (FAR) Part 77 surfaces, a representation of objects that penetrate these surfaces, runway, taxiway, and ramp areas, navigational aids, buildings, roads and other detail in the vicinity of an airport.

AIRPORT REFERENCE CODE (ARC): A coding system used to relate airport design criteria to the operational (Aircraft Approach Category) to the physical characteristics (Airplane Design Group) of the airplanes intended to operate at the airport.

AIRPORT REFERENCE POINT (ARP): The latitude and longitude of the approximate center of the airport.

AIRPORT SPONSOR: The entity that is legally responsible for the management and operation of an airport, including the fulfillment of the requirements of laws and regulations related thereto.

AIRPORT SURFACE DETECTION EQUIPMENT: A radar system that provides air traffic controllers with a visual representation of the movement of aircraft and other vehicles on the ground on the airfield at an airport.

AIRPORT SURVEILLANCE RADAR: The primary radar located at an airport or in an air traffic control terminal area that receives a signal at an antenna and transmits the signal to air traffic control display equipment defining the location of aircraft in the air. The signal provides only the azimuth and range of aircraft from the location of the antenna.

AIRPORT TRAFFIC CONTROL TOWER (ATCT): A central operations facility in the terminal air traffic control system, consisting of a tower, including an associated instrument flight rule (IFR) room if radar equipped, using air/ground communications and/or radar, visual signaling and other devices to provide safe and expeditious movement of terminal air traffic.

AIR ROUTE TRAFFIC CONTROL CENTER: A facility which provides en route air traffic control service to aircraft operating on an IFR flight plan within controlled airspace over a large, multi-state region.

AIRSIDE: The portion of an airport that contains the facilities necessary for the operation of aircraft.

AIRSPACE: The volume of space above the surface of the ground that is provided for the operation of aircraft.

AIR TAXI: An air carrier certificated in accordance with FAR Part 121 and FAR Part 135 and authorized to provide, on demand, public transportation of persons and property by aircraft. Generally operates small aircraft "for hire" for specific trips.

AIR TRAFFIC CONTROL: A service operated by an appropriate organization for the purpose of providing for the safe, orderly, and expeditious flow of air traffic.

AIR ROUTE TRAFFIC CONTROL CENTER (ARTCC): A facility established to provide air traffic control service to aircraft operating on an IFR flight plan within controlled airspace and principally during the en route phase of flight.

AIR TRAFFIC CONTROL SYSTEM COMMAND CENTER: A facility operated by the FAA which is responsible for the central flow control, the central altitude reservation system, the airport reservation position system, and the air traffic service contingency command for the air traffic control system.

AIR TRAFFIC HUB: A categorization of commercial service airports or group of commercial service airports in a metropolitan or urban area based upon the proportion of annual national enplanements existing at the airport or airports. The categories are large hub, medium hub, small hub, or non-hub. It forms the basis for the apportionment of entitlement funds.

AIR TRANSPORT ASSOCIATION OF AMERICA: An organization consisting of the principal U.S. airlines that represents the interests of the airline industry on major aviation issues before federal, state, and local government bodies. It promotes air transportation safety by coordinating industry and governmental safety programs and it serves as a focal point for industry efforts to standardize practices and enhance the efficiency of the air transportation system.

ALERT AREA: See special-use airspace.

ALTITUDE: The vertical distance measured in feet above mean sea level.

ANNUAL INSTRUMENT APPROACH (AIA): An approach to an airport with the intent to land by an aircraft in accordance with an IFR flight plan when visibility is less than three miles and/or when the ceiling is at or below the minimum initial approach altitude.

APPROACH LIGHTING SYSTEM (ALS): An airport lighting facility which provides visual guidance to landing aircraft by radiating light beams by which the pilot aligns the aircraft with the extended centerline of the runway on final approach and landing.

APPROACH MINIMUMS: The altitude below which an aircraft may not descend while on an IFR approach unless the pilot has the runway in sight.

APPROACH SURFACE: An imaginary obstruction limiting surface defined in FAR Part 77 which is longitudinally centered on an extended runway centerline and extends outward and upward from the primary surface at each end of a runway at a designated slope and distance based upon the type of available or planned approach by aircraft to a runway.

APRON: A specified portion of the airfield used for passenger, cargo or freight loading and unloading, aircraft parking, and the refueling, maintenance and servicing of aircraft.

AREA NAVIGATION: The air navigation procedure that provides the capability to establish and maintain a flight path on an arbitrary course that remains within the coverage area of navigational sources being used.

AUTOMATED TERMINAL INFORMATION SERVICE (ATIS): The continuous broadcast of recorded non-control information at towered airports. Information typically includes wind speed, direction, and runway in use.

AUTOMATED SURFACE OBSERVATION SYSTEM (ASOS): A reporting system that provides frequent airport ground surface weather observation data through digitized voice broadcasts and printed reports.

AUTOMATIC WEATHER OBSERVATION STATION (AWOS): Equipment used to automatically record weather conditions (i.e. cloud height, visibility, wind speed and direction, temperature, dew point, etc.)

AUTOMATIC DIRECTION FINDER (ADF): An aircraft radio navigation system which senses and indicates the direction to a non-directional radio beacon (NDB) ground transmitter.

AVIGATION EASEMENT: A contractual right or a property interest in land over which a right of unobstructed flight in the airspace is established.

AZIMUTH: Horizontal direction expressed as the angular distance between true north and the direction of a fixed point (as the observer's heading).

B

BASE LEG: A flight path at right angles to the landing runway off its approach end. The base leg normally extends from the downwind leg to the intersection of the extended runway centerline. See "traffic pattern."

BASED AIRCRAFT: The general aviation aircraft that use a specific airport as a home base.

BEARING: The horizontal direction to or from any point, usually measured clockwise from true north or magnetic north.

BLAST FENCE: A barrier used to divert or dissipate jet blast or propeller wash.

BLAST PAD: A prepared surface adjacent to the end of a runway for the purpose of eliminating the erosion of the ground surface by the wind forces produced by airplanes at the initiation of takeoff operations.

BUILDING RESTRICTION LINE (BRL): A line which identifies suitable building area locations on the airport.

C

CAPITAL IMPROVEMENT PLAN: The planning program used by the Federal Aviation Administration to identify, prioritize, and distribute Airport Improvement Program funds for airport development and the needs of the National Airspace System to meet specified national goals and objectives.

CARGO SERVICE AIRPORT: An airport served by aircraft providing air transportation of property only, including mail, with an annual aggregate landed weight of at least 100,000,000 pounds.

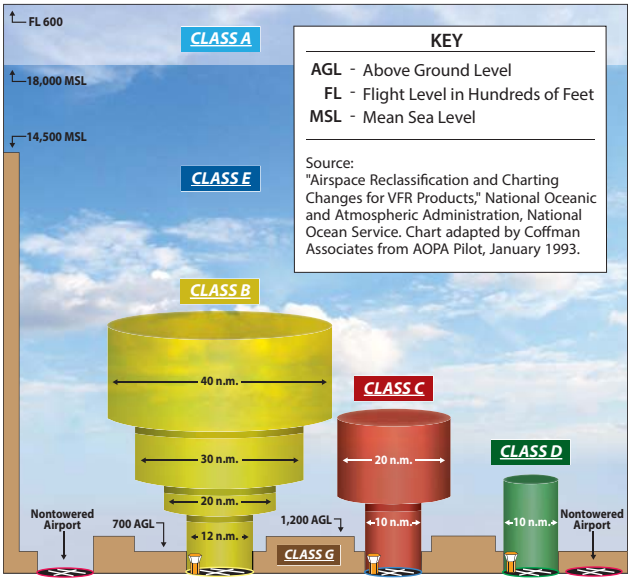
CATEGORY I: An Instrument Landing System (ILS) that provides acceptable guidance information to an aircraft from the coverage limits of the ILS to the point at which the localizer course line intersects the glide path at a decision height of 200 feet above the horizontal plane containing the runway threshold.

CATEGORY II: An ILS that provides acceptable guidance information to an aircraft from the coverage limits of the ILS to the point at which the localizer course line intersects the glide path at a decision height of 100 feet above the horizontal plane containing the runway threshold.

CATEGORY III: An ILS that provides acceptable guidance information to a pilot from the coverage limits of the ILS with no decision height specified above the horizontal plane containing the runway threshold.

CEILING: The height above the ground surface to the location of the lowest layer of clouds which is reported as either broken or overcast.

CIRCLING APPROACH: A maneuver initiated by the pilot to align the aircraft with the runway for landing when flying a predetermined circling instrument approach under IFR.



CLASS A AIRSPACE: See Controlled Airspace.

CLASS B AIRSPACE: See Controlled Airspace.

CLASS C AIRSPACE: See Controlled Airspace.

CLASS D AIRSPACE: See Controlled Airspace.

CLASS E AIRSPACE: See Controlled Airspace.

CLASS G AIRSPACE: See Controlled Airspace.

CLEAR ZONE: See Runway Protection Zone.

COMMERCIAL SERVICE AIRPORT: A public airport providing scheduled passenger service that enplanes at least 2,500 annual passengers.

COMMON TRAFFIC ADVISORY FREQUENCY: A radio frequency identified in the appropriate aeronautical chart which is designated for the purpose of transmitting airport advisory information and procedures while operating to or from an uncontrolled airport.

COMPASS LOCATOR (LOM): A low power, low/medium frequency radio-beacon installed in conjunction with the instrument landing system at one or two of the marker sites.

CONICAL SURFACE: An imaginary obstruction-limiting surface defined in FAR Part 77 that extends

from the edge of the horizontal surface outward and upward at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

CONTROLLED AIRPORT: An airport that has an operating airport traffic control tower.

CONTROLLED AIRSPACE: Airspace of defined dimensions within which air traffic control services are provided to instrument flight rules (IFR) and visual flight rules (VFR) flights in accordance with the airspace classification. Controlled airspace in the United States is designated as follows:

- **CLASS A**: Generally, the airspace from 18,000 feet mean sea level (MSL) up to but not including flight level FL600. All persons must operate their aircraft under IFR.
- **CLASS B**: Generally, the airspace from the surface to 10,000 feet MSL surrounding the nation's busiest airports. The configuration of Class B airspace is unique to each airport, but typically consists of two or more layers of air space and is designed to contain all published instrument approach procedures to the airport. An air traffic control clearance is required for all aircraft to operate in the area.
- **CLASS C**: Generally, the airspace from the surface to 4,000 feet above the airport elevation (charted as MSL) surrounding those airports that have an operational control tower and radar approach control and are served by a qualifying number of IFR operations or passenger enplanements. Although individually tailored for each airport, Class C airspace typically consists of a surface area with a five nautical mile (nm) radius and an outer area with a 10 nautical mile radius that extends from 1,200 feet to 4,000 feet above the airport elevation. Two-way radio communication is required for all aircraft.
- **CLASS D**: Generally, that airspace from the surface to 2,500 feet above the air port elevation (charted as MSL) surrounding those airports that have an operational control tower. Class D airspace is individually tailored and configured to encompass published instrument approach procedure. Unless otherwise authorized, all persons must establish two-way radio communication.
- **CLASS E**: Generally, controlled airspace that is not classified as Class A, B, C, or D. Class E airspace extends upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace. When designated as a surface area, the airspace will be configured to contain all instrument procedures. Class E airspace encompasses all Victor Airways. Only aircraft following instrument flight rules are required to establish two-way radio communication with air traffic control.
- **CLASS G**: Generally, that airspace not classified as Class A, B, C, D, or E. Class G airspace is uncontrolled for all aircraft. Class G airspace extends from the surface to the overlying Class E airspace.

CONTROLLED FIRING AREA: See special-use airspace.

CROSSWIND: A wind that is not parallel to a runway centerline or to the intended flight path of an aircraft.

CROSSWIND COMPONENT: The component of wind that is at a right angle to the runway centerline or the intended flight path of an aircraft.

CROSSWIND LEG: A flight path at right angles to the landing runway off its upwind end. See "traffic pattern."

D

DECIBEL: A unit of noise representing a level relative to a reference of a sound pressure 20 micro newtons per square meter.

DECISION HEIGHT/ DECISION ALTITUDE: The height above the end of the runway surface at which a decision must be made by a pilot during the ILS or Precision Approach Radar approach to either continue the approach or to execute a missed approach.

DECLARED DISTANCES: The distances declared available for the airplane's takeoff runway, takeoff distance, accelerate-stop distance, and landing distance requirements. The distances are:

- **TAKEOFF RUNWAY AVAILABLE (TORA):** The runway length declared available and suitable for the ground run of an airplane taking off.

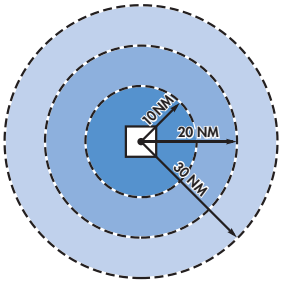
- **TAKEOFF DISTANCE AVAILABLE (TODA):** The TORA plus the length of any remaining runway and/or clear way beyond the far end of the TORA.
- **ACCELERATE-STOP DISTANCE AVAILABLE (ASDA):** The runway plus stopway length declared available for the acceleration and deceleration of an aircraft aborting a takeoff.
- **LANDING DISTANCE AVAILABLE (LDA):** The runway length declared available and suitable for landing.

DEPARTMENT OF TRANSPORTATION: The cabinet level federal government organization consisting of modal operating agencies, such as the Federal Aviation Administration, which was established to promote the coordination of federal transportation programs and to act as a focal point for research and development efforts in transportation.

DISCRETIONARY FUNDS: Federal grant funds that may be appropriated to an airport based upon designation by the Secretary of Transportation or Congress to meet a specified national priority such as enhancing capacity, safety, and security, or mitigating noise.

DISPLACED THRESHOLD: A threshold that is located at a point on the runway other than the designated beginning of the runway.

DISTANCE MEASURING EQUIPMENT (DME): Equipment (airborne and ground) used to measure, in nautical miles, the slant range distance of an aircraft from the DME navigational aid.



DNL: The 24-hour average sound level, in decibels, obtained after the addition of ten decibels to sound levels for the periods between 10 p.m. and 7 a.m. as averaged over a span of one year. It is the FAA standard metric for determining the cumulative exposure of individuals to noise.

DOWNWIND LEG: A flight path parallel to the landing runway in the direction opposite to landing. The downwind leg normally extends between the crosswind leg and the base leg. Also see "traffic pattern."

E

EASEMENT: The legal right of one party to use a portion of the total rights in real estate owned by another party. This may include the right of passage over, on, or below the property; certain air rights above the property, including view rights; and the rights to any specified form of development or activity, as well as any other legal rights in the property that may be specified in the easement document.

ELEVATION: The vertical distance measured in feet above mean sea level.

ENPLANED PASSENGERS: The total number of revenue passengers boarding aircraft, including originating, stop-over, and transfer passengers, in scheduled and nonscheduled services.

ENPLANEMENT: The boarding of a passenger, cargo, freight, or mail on an aircraft at an airport.

ENTITLEMENT: Federal funds for which a commercial service airport may be eligible based upon its annual passenger enplanements.

ENVIRONMENTAL ASSESSMENT (EA): An environmental analysis performed pursuant to the National Environmental Policy Act to determine whether an action would significantly affect the environment and thus require a more detailed environmental impact statement.

ENVIRONMENTAL AUDIT: An assessment of the current status of a party's compliance with applicable environmental requirements of a party's environmental compliance policies, practices, and controls.

ENVIRONMENTAL IMPACT STATEMENT (EIS): A document required of federal agencies by the National Environmental Policy Act for major projects are legislative proposals affecting the environment. It is a tool for decision-making describing the positive and negative effects of a proposed action and citing alternative actions.

ESSENTIAL AIR SERVICE: A federal program which guarantees air carrier service to selected small cities by providing subsidies as needed to prevent these cities from such service.

F

FEDERAL AVIATION REGULATIONS: The general and permanent rules established by the executive departments and agencies of the Federal Government for aviation, which are published in the Federal Register. These are the aviation subset of the Code of Federal Regulations.

FEDERAL INSPECTION SERVICES: The provision of customs and immigration services including passport inspection, inspection of baggage, the collection of duties on certain imported items, and the inspections for agricultural products, illegal drugs, or other restricted items.

FINAL APPROACH: A flight path in the direction of landing along the extended runway centerline. The final approach normally extends from the base leg to the runway. See "traffic pattern."

FINAL APPROACH AND TAKEOFF AREA (FATO). A defined area over which the final phase of the helicopter approach to a hover, or a landing is completed and from which the takeoff is initiated.

FINAL APPROACH FIX: The designated point at which the final approach segment for an aircraft landing on a runway begins for a non-precision approach.

FINDING OF NO SIGNIFICANT IMPACT (FONSI): A public document prepared by a Federal agency that presents the rationale why a proposed action will not have a significant effect on the environment and for which an environmental impact statement will not be prepared.

FIXED BASE OPERATOR (FBO): A provider of services to users of an airport. Such services include, but are not limited to, hangaring, fueling, flight training, repair, and maintenance.

FLIGHT LEVEL: A measure of altitude used by aircraft flying above 18,000 feet. Flight levels are indicated by three digits representing the pressure altitude in hundreds of feet. An airplane flying at flight level 360 is flying at a pressure altitude of 36,000 feet. This is expressed as FL 360.

FLIGHT SERVICE STATION: An operations facility in the national flight advisory system which utilizes data interchange facilities for the collection and dissemination of Notices to Airmen, weather, and administrative data and which provides pre-flight and in-flight advisory services to pilots through air and ground based communication facilities.

FRANGIBLE NAVAID: A navigational aid which retains its structural integrity and stiffness up to a designated maximum load, but on impact from a greater load, breaks, distorts, or yields in such a manner as to present the minimum hazard to aircraft.

G

GENERAL AVIATION: That portion of civil aviation which encompasses all facets of aviation except air carriers holding a certificate of convenience and necessity, and large aircraft commercial operators.

GENERAL AVIATION AIRPORT: An airport that provides air service to only general aviation.

GLIDESLOPE (GS): Provides vertical guidance for aircraft during approach and landing. The glideslope consists of the following:

1. Electronic components emitting signals which provide vertical guidance by reference to airborne instruments during instrument approaches such as ILS; or

2. Visual ground aids, such as VASI, which provide vertical guidance for VFR approach or for the visual portion of an instrument approach and landing.

GLOBAL POSITIONING SYSTEM (GPS): A system of 48 satellites used as reference points to enable navigators equipped with GPS receivers to determine their latitude, longitude, and altitude.

GROUND ACCESS: The transportation system on and around the airport that provides access to and from the airport by ground transportation vehicles for passengers, employees, cargo, freight, and airport services.

H

HELIPAD: A designated area for the takeoff, landing, and parking of helicopters.

HIGH INTENSITY RUNWAY LIGHTS: The highest classification in terms of intensity or brightness for lights designated for use in delineating the sides of a runway.

HIGH-SPEED EXIT TAXIWAY: A long radius taxiway designed to expedite aircraft turning off the runway after landing (at speeds to 60 knots), thus reducing runway occupancy time.

HORIZONTAL SURFACE: An imaginary obstruction-limiting surface defined in FAR Part 77 that is specified as a portion of a horizontal plane surrounding a runway located 150 feet above the established airport elevation. The specific horizontal dimensions of this surface are a function of the types of approaches existing or planned for the runway.

I

INITIAL APPROACH FIX: The designated point at which the initial approach segment begins for an instrument approach to a runway.

INSTRUMENT APPROACH PROCEDURE: A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing, or to a point from which a landing may be made visually.

INSTRUMENT FLIGHT RULES (IFR): Procedures for the conduct of flight in weather conditions below Visual Flight Rules weather minimums. The term IFR is often also used to define weather conditions and the type of flight plan under which an aircraft is operating.

INSTRUMENT LANDING SYSTEM (ILS): A precision instrument approach system which normally consists of the following electronic components and visual aids:

1. Localizer.
2. Glide Slope.
3. Outer Marker.
4. Middle Marker.
5. Approach Lights.

INSTRUMENT METEOROLOGICAL CONDITIONS: Meteorological conditions expressed in terms of specific visibility and ceiling conditions that are less than the minimums specified for visual meteorological conditions.

ITINERANT OPERATIONS: Operations by aircraft that are not based at a specified airport.

K

KNOTS: A unit of speed length used in navigation that is equivalent to the number of nautical miles traveled in one hour.

L

LOCAL-AREA AUGMENTATION SYSTEM: (LAAS) is an all-weather aircraft landing system based on real-time differential correction of the GPS signal.

LANDSIDE: The portion of an airport that provides the facilities necessary for the processing of passengers, cargo, freight, and ground transportation vehicles.

LANDING DISTANCE AVAILABLE (LDA): See declared distances.

LARGE AIRPLANE: An airplane that has a maximum certified takeoff weight in excess of 12,500 pounds.

LOCAL AREA AUGMENTATION SYSTEM: A differential GPS system that provides localized measurement correction signals to the basic GPS signals to improve navigational accuracy integrity, continuity, and availability.

LOCAL OPERATIONS: Aircraft operations performed by aircraft that are based at the airport and that operate in the local traffic pattern or within sight of the airport, that are known to be departing for or arriving from flights in local practice areas within a prescribed distance from the airport, or that execute simulated instrument approaches at the airport.

LOCAL TRAFFIC: Aircraft operating in the traffic pattern or within sight of the tower, or aircraft known to be departing or arriving from the local practice areas, or aircraft executing practice instrument approach procedures. Typically, this includes touch and-go training operations.

LOCALIZER: The component of an ILS which provides course guidance to the runway.

LOCALIZER TYPE DIRECTIONAL AID (LDA): A facility of comparable utility and accuracy to a localizer, but is not part of a complete ILS and is not aligned with the runway.

LONG RANGE NAVIGATION SYSTEM (LORAN): Long range navigation is an electronic navigational aid

which determines aircraft position and speed by measuring the difference in the time of reception of synchronized pulse signals from two fixed transmitters. Loran is used for en route navigation.

LOW INTENSITY RUNWAY LIGHTS: The lowest classification in terms of intensity or brightness for lights designated for use in delineating the sides of a runway.

M

MEDIUM INTENSITY RUNWAY LIGHTS: The middle classification in terms of intensity or brightness for lights designated for use in delineating the sides of a runway.

MICROWAVE LANDING SYSTEM (MLS): An instrument approach and landing system that provides precision guidance in azimuth, elevation, and distance measurement.

MILITARY OPERATIONS: Aircraft operations that are performed in military aircraft.

MILITARY OPERATIONS AREA (MOA): See special-use airspace

MILITARY TRAINING ROUTE: An air route depicted on aeronautical charts for the conduct of military flight training at speeds above 250 knots.

MISSED APPROACH COURSE (MAC): The flight route to be followed if, after an instrument approach, a landing is not affected, and occurring normally:

1. When the aircraft has descended to the decision height and has not established visual contact; or
2. When directed by air traffic control to pull up or to go around again.

MOVEMENT AREA: The runways, taxiways, and other areas of an airport which are utilized for taxiing/hover taxiing, air taxiing, takeoff, and landing of aircraft, exclusive of loading ramps and parking areas. At those airports with a tower, air traffic control clearance is required for entry onto the movement area.

N

NATIONAL AIRSPACE SYSTEM: The network of air traffic control facilities, air traffic control areas, and navigational facilities through the U.S.

NATIONAL PLAN OF INTEGRATED AIRPORT SYSTEMS: The national airport system plan developed by the Secretary of Transportation on a biannual basis for the development of public use airports to meet national air transportation needs.

NATIONAL TRANSPORTATION SAFETY BOARD: A federal government organization established to investigate and determine the probable cause of transportation accidents, to recommend equipment and procedures to enhance transportation safety, and to review on appeal the suspension or revocation of any certificates or licenses issued by the Secretary of Transportation.

NAUTICAL MILE: A unit of length used in navigation which is equivalent to the distance spanned by one minute of arc in latitude, that is, 1,852 meters or 6,076 feet. It is equivalent to approximately 1.15 statute mile.

NAVAID: A term used to describe any electrical or visual air navigational aids, lights, signs, and associated supporting equipment (i.e. PAPI, VASI, ILS, etc.)

NAVIGATIONAL AID: A facility used as, available for use as, or designed for use as an aid to air navigation.

NOISE CONTOUR: A continuous line on a map of the airport vicinity connecting all points of the same noise exposure level.

NON-DIRECTIONAL BEACON (NDB): A beacon transmitting nondirectional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine their bearing to and from the radio beacon and home on, or track to, the station. When the radio beacon is installed in conjunction with the Instrument Landing System marker, it is normally called a Compass Locator.

NON-PRECISION APPROACH PROCEDURE: A standard instrument approach procedure in which no electronic glide slope is provided, such as VOR, TACAN, NDB, or LOC.

NOTICE TO AIRMEN: A notice containing information concerning the establishment, condition, or change in any component of or hazard in the National Airspace System, the timely knowledge of which is considered essential to personnel concerned with flight operations.

O

OBJECT FREE AREA (OFA): An area on the ground centered on a runway, taxiway, or taxilane centerline provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes.

OBSTACLE FREE ZONE (OFZ): The airspace below 150 feet above the established airport elevation and along the runway and extended runway centerline that is required to be kept clear of all objects, except for frangible visual NAVAIDs that need to be located in the OFZ because of their function, in order to provide clearance for aircraft landing or taking off from the runway, and for missed approaches.

ONE-ENGINE INOPERABLE SURFACE: A surface emanating from the runway end at a slope ratio of 62.5:1. Air carrier airports are required to maintain a technical drawing of this surface depicting any object penetrations by January 1, 2010.

OPERATION: The take-off, landing, or touch-and-go procedure by an aircraft on a runway at an airport.

OUTER MARKER (OM): An ILS navigation facility in the terminal area navigation system located four to seven miles from the runway edge on the extended centerline, indicating to the pilot that he/she is passing over the facility and can begin final approach.

P

PILOT CONTROLLED LIGHTING: Runway lighting systems at an airport that are controlled by activating the microphone of a pilot on a specified radio frequency.

PRECISION APPROACH: A standard instrument approach procedure which provides runway alignment and glide slope (descent) information. It is categorized as follows:

- **CATEGORY I (CAT I)**: A precision approach which provides for approaches with a decision height of not less than 200 feet and visibility not less than 1/2 mile or Runway Visual Range (RVR) 2400 (RVR 1800) with operative touchdown zone and runway centerline lights.
- **CATEGORY II (CAT II)**: A precision approach which provides for approaches with a decision height of not less than 100 feet and visibility not less than 1200 feet RVR.
- **CATEGORY III (CAT III)**: A precision approach which provides for approaches with minima less than Category II.

PRECISION APPROACH PATH INDICATOR (PAPI): A lighting system providing visual approach slope guidance to aircraft during a landing approach. It is similar to a VASI but provides a sharper transition between the colored indicator lights.

PRECISION APPROACH RADAR: A radar facility in the terminal air traffic control system used to detect and display with a high degree of accuracy the direction, range, and elevation of an aircraft on the final approach to a runway.

PRECISION OBJECT FREE AREA (POFA): An area centered on the extended runway centerline, beginning at the runway threshold and extending behind the runway threshold that is 200 feet long by 800 feet wide. The POFA is a clearing standard which requires the POFA to be kept clear of above ground objects protruding above the runway safety area edge elevation (except for frangible NAVAIDS). The POFA applies to all new authorized instrument approach procedures with less than 3/4 mile visibility.

PRIMARY AIRPORT: A commercial service airport that enplanes at least 10,000 annual passengers.

PRIMARY SURFACE: An imaginary obstruction limiting surface defined in FAR Part 77 that is specified as a rectangular surface longitudinally centered about a runway. The specific dimensions of this surface are a function of the types of approaches existing or planned for the runway.

PROHIBITED AREA: See special-use airspace.

PVC: Poor visibility and ceiling. Used in determining Annual Service Volume. PVC conditions exist when the cloud ceiling is less than 500 feet and visibility is less than one mile.

R

RADIAL: A navigational signal generated by a Very High Frequency Omni-directional Range or VORTAC station that is measured as an azimuth from the station.

REGRESSION ANALYSIS: A statistical technique that seeks to identify and quantify the relationships between factors associated with a forecast.

REMOTE COMMUNICATIONS OUTLET (RCO): An unstaffed transmitter receiver/facility remotely controlled by air traffic personnel. RCOs serve flight service stations (FSSs). RCOs were established to provide ground-to-ground communications between air traffic control specialists and pilots at satellite airports for delivering en route clearances, issuing departure authorizations, and acknowledging instrument flight rules cancellations or departure/ landing times.

REMOTE TRANSMITTER/RECEIVER (RTR): See remote communications outlet. RTRs serve ARTCCs.

RELIEVER AIRPORT: An airport to serve general aviation aircraft which might otherwise use a congested air-carrier served airport.

RESTRICTED AREA: See special-use airspace.

RNAV: Area navigation - airborne equipment which permits flights over determined tracks within prescribed accuracy tolerances without the need to overfly ground-based navigation facilities. Used en route and for approaches to an airport.

RUNWAY: A defined rectangular area on an airport prepared for aircraft landing and takeoff. Runways are normally numbered in relation to their magnetic direction, rounded off to the nearest 10 degrees. For example, a runway with a magnetic heading of 180 would be designated Runway 18. The runway heading on the opposite end of the runway is 180 degrees from that runway end. For example, the opposite runway heading for Runway 18 would be Runway 36 (magnetic heading of 360). Aircraft can takeoff or land from either end of a runway, depending upon wind direction.

RUNWAY ALIGNMENT INDICATOR LIGHT: A series of high intensity sequentially flashing lights installed on the extended centerline of the runway usually in conjunction with an approach lighting system.

RUNWAY DESIGN CODE: A code signifiying the design standards to which the runway is to be built.

RUNWAY END IDENTIFICATION LIGHTING (REIL): Two synchronized flashing lights, one on each side of the runway threshold, which provide rapid and positive identification of the approach end of a particular runway.

RUNWAY GRADIENT: The average slope, measured in percent, between the two ends of a runway.

RUNWAY PROTECTION ZONE (RPZ): An area off the runway end to enhance the protection of people and property on the ground. The RPZ is trapezoidal in shape. Its dimensions are determined by the aircraft approach speed and runway approach type and minima.

RUNWAY REFERENCE CODE: A code signifying the current operational capabilities of a runway and associated taxiway.

RUNWAY SAFETY AREA (RSA): A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway.

RUNWAY VISIBILITY ZONE (RVZ): An area on the airport to be kept clear of permanent objects so that there is an unobstructed line of- site from any point five feet above the runway centerline to any point five feet above an intersecting runway centerline.

RUNWAY VISUAL RANGE (RVR): An instrumentally derived value, in feet, representing the horizontal distance a pilot can see down the runway from the runway end.

S

SCOPE: The document that identifies and defines the tasks, emphasis, and level of effort associated with a project or study.

SEGMENTED CIRCLE: A system of visual indicators designed to provide traffic pattern information at airports without operating control towers.

SHOULDER: An area adjacent to the edge of paved runways, taxiways, or aprons providing a transition between the pavement and the adjacent surface; support for aircraft running off the pavement; enhanced drainage; and blast protection. The shoulder does not necessarily need to be paved.

SLANT-RANGE DISTANCE: The straight line distance between an aircraft and a point on the ground.

SMALL AIRCRAFT: An aircraft that has a maximum certified takeoff weight of up to 12,500 pounds.

SPECIAL-USE AIRSPACE: Airspace of defined dimensions identified by a surface area wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft operations that are not a part of those activities. Special-use airspace classifications include:

- **ALERT AREA**: Airspace which may contain a high volume of pilot training activities or an unusual type of aerial activity, neither of which is hazardous to aircraft.
- **CONTROLLED FIRING AREA**: Airspace wherein activities are conducted under conditions so controlled as to eliminate hazards to nonparticipating aircraft and to ensure the safety of persons or property on the ground.
- **MILITARY OPERATIONS AREA (MOA)**: Designated airspace with defined vertical and lateral dimensions established outside Class A airspace to separate/segregate certain military activities from instrument flight rule (IFR) traffic and to identify for visual flight rule (VFR) traffic where these activities are conducted.
- **PROHIBITED AREA**: Designated airspace within which the flight of aircraft is prohibited.
- **RESTRICTED AREA**: Airspace designated under Federal Aviation Regulation (FAR) 73, within which the flight of aircraft, while not wholly prohibited, is subject to restriction. Most restricted areas are designated joint use. When not in use by the using agency, IFR/VFR operations can be authorized by the controlling air traffic control facility.
- **WARNING AREA:** Airspace which may contain hazards to nonparticipating aircraft.

STANDARD INSTRUMENT DEPARTURE (SID): A preplanned coded air traffic control IFR departure routing, preprinted for pilot use in graphic and textual form only.

STANDARD INSTRUMENT DEPARTURE PROCEDURES: A published standard flight procedure to be utilized following takeoff to provide a transition between the airport and the terminal area or en route airspace.

STANDARD TERMINAL ARRIVAL ROUTE (STAR): A preplanned coded air traffic control IFR arrival routing, preprinted for pilot use in graphic and textual or textual form only.

STOP-AND-GO: A procedure wherein an aircraft will land, make a complete stop on the runway, and then commence a takeoff from that point. A stop-and-go is recorded as two operations: one operation for the landing and one operation for the takeoff.

STOPWAY: An area beyond the end of a takeoff runway that is designed to support an aircraft during an aborted takeoff without causing structural damage to the aircraft. It is not to be used for takeoff, landing, or taxiing by aircraft.

STRAIGHT-IN LANDING/APPROACH: A landing made on a runway aligned within 30 degrees of the final approach course following completion of an instrument approach.

T

TACTICAL AIR NAVIGATION (TACAN): An ultrahigh frequency electronic air navigation system which provides suitably-equipped aircraft a continuous indication of bearing and distance to the TACAN station.

TAKEOFF RUNWAY AVAILABLE (TORA):
See declared distances.

TAKEOFF DISTANCE AVAILABLE (TODA):
See declared distances.

TAXILANE: The portion of the aircraft parking area used for access between taxiways and aircraft parking positions.

TAXIWAY: A defined path established for the taxiing of aircraft from one part of an airport to another.

TAXIWAY DESIGN GROUP: A classification of airplanes based on outer to outer Main Gear Width (MGW) and Cockpit to Main Gear (CMG) distance.

TAXIWAY SAFETY AREA (TSA): A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway.

TERMINAL INSTRUMENT PROCEDURES: Published flight procedures for conducting instrument approaches to runways under instrument meteorological conditions.

TERMINAL RADAR APPROACH CONTROL: An element of the air traffic control system responsible for monitoring the en-route and terminal segment of air traffic in the airspace surrounding airports with moderate to high levels of air traffic.

TETRAHEDRON: A device used as a landing direction indicator. The small end of the tetrahedron points in the direction of landing.

THRESHOLD: The beginning of that portion of the runway available for landing. In some instances the landing threshold may be displaced.

TOUCH-AND-GO: An operation by an aircraft that lands and departs on a runway without stopping or exiting the runway. A touch-and go is recorded as two operations: one operation for the landing and one operation for the takeoff.

TOUCHDOWN: The point at which a landing aircraft makes contact with the runway surface.

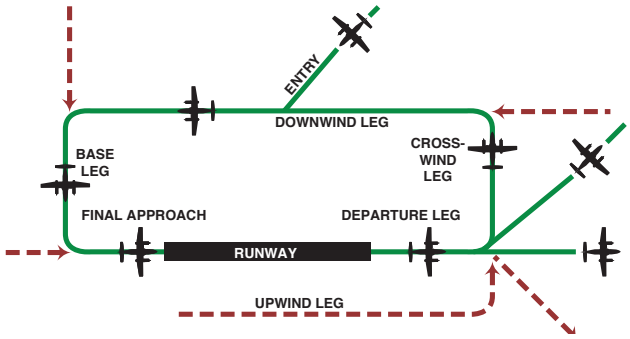
TOUCHDOWN AND LIFT-OFF AREA (TLOF): A load bearing, generally paved area, normally centered in the FATO, on which the helicopter lands or takes off.

TOUCHDOWN ZONE (TDZ): The first 3,000 feet of the runway beginning at the threshold.

TOUCHDOWN ZONE ELEVATION (TDZE): The highest elevation in the touchdown zone.

TOUCHDOWN ZONE (TDZ) LIGHTING: Two rows of transverse light bars located symmetrically about the runway centerline normally at 100- foot intervals. The basic system extends 3,000 feet along the runway.

TRAFFIC PATTERN: The traffic flow that is prescribed for aircraft landing at or taking off from an airport. The components of a typical traffic pattern are the upwind leg, crosswind leg, downwind leg, base leg, and final approach.



U

UNCONTROLLED AIRPORT: An airport without an air traffic control tower at which the control of Visual Flight Rules traffic is not exercised.

UNCONTROLLED AIRSPACE: Airspace within which aircraft are not subject to air traffic control.

UNIVERSAL COMMUNICATION (UNICOM):
A nongovernment communication facility which may provide airport information at certain airports. Locations and frequencies of UNICOM's are shown on aeronautical charts and publications.

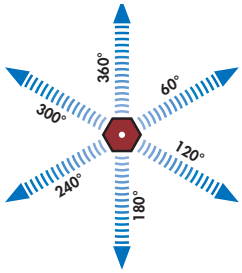
UPWIND LEG: A flight path parallel to the landing runway in the direction of landing. See "traffic pattern."

V

VECTOR: A heading issued to an aircraft to provide navigational guidance by radar.

VERY HIGH FREQUENCY/ OMNIDIRECTIONAL RANGE (VOR): A ground-based electronic navigation aid transmitting very high frequency navigation signals, 360 degrees in azimuth, oriented from magnetic north. Used as the basis for navigation in the national airspace system. The VOR periodically identifies itself by Morse Code and may have an additional voice identification feature.

VERY HIGH FREQUENCY OMNI-DIRECTIONAL RANGE/ TACTICAL AIR NAVIGATION (VORTAC): A navigation aid providing VOR azimuth, TACAN azimuth, and TACAN distance-measuring equipment (DME) at one site.



VICTOR AIRWAY: A control area or portion thereof established in the form of a corridor, the centerline of which is defined by radio navigational aids.

VISUAL APPROACH: An approach wherein an aircraft on an IFR flight plan, operating in VFR conditions under the control of an air traffic control facility and having an air traffic control authorization, may proceed to the airport of destination in VFR conditions.

VISUAL APPROACH SLOPE INDICATOR (VASI): An airport lighting facility providing vertical visual approach slope guidance to aircraft during approach to landing by radiating a directional pattern of high intensity red and white focused light beams which indicate to the pilot that he is on path if he sees red/ white, above path if white/white, and below path if red/red. Some airports serving large aircraft have three-bar VASI's which provide two visual guide paths to the same runway.

VISUAL FLIGHT RULES (VFR): Rules that govern the procedures for conducting flight under visual conditions. The term VFR is also used in the United States to indicate weather conditions that are equal to or greater than minimum VFR requirements. In addition, it is used by pilots and controllers to indicate type of flight plan.

VISUAL METEOROLOGICAL CONDITIONS: Meteorological conditions expressed in terms of specific visibility and ceiling conditions which are equal to or greater than the threshold values for instrument meteorological conditions.

VOR: See "Very High Frequency Omnidirectional Range Station."

VORTAC: See "Very High Frequency Omnidirectional Range Station/Tactical Air Navigation."

W

WARNING AREA: See special-use airspace.

WIDE AREA AUGMENTATION SYSTEM: An enhancement of the Global Positioning System that includes integrity broadcasts, differential corrections, and additional ranging signals for the purpose of providing the accuracy, integrity, availability, and continuity required to support all phases of flight.

Abbreviations

AC: advisory circular

ACIP: airport capital improvement program

ADF: automatic direction finder

ADG: airplane design group

AFSS: automated flight service station

AGL: above ground level

AIA: annual instrument approach

AIP: Airport Improvement Program

AIR-21: Wendell H. Ford Aviation Investment and Reform Act for the 21st Century

ALS: approach lighting system

ALSF-1: standard 2,400-foot high intensity approach lighting system with sequenced flashers (CAT I configuration)

ALSF-2: standard 2,400-foot high intensity approach lighting system with sequenced flashers (CAT II configuration)

AOA: Aircraft Operation Area

APV: instrument approach procedure with vertical guidance

Coffman Associates Airport Consultants

ARC: airport reference code

ARFF: aircraft rescue and fire fighting

ARP: airport reference point

ARTCC: air route traffic control center

ASDA: accelerate-stop distance available

ASR: airport surveillance radar

ASOS: automated surface observation station

ATC(T): airport traffic control tower

ATIS: automated terminal information service

AVGAS: aviation gasoline - typically 100 low lead (100LL)

AWOS: automatic weather observation station

BRL: building restriction line

CFR: Code of Federal Regulation

CIP: capital improvement program

DME: distance measuring equipment

DNL: day-night noise level

DWL: runway weight bearing capacity of aircraft with dual-wheel type landing gear

DTWL: runway weight bearing capacity of aircraft with dual-tandem type landing gear

FAA: Federal Aviation Administration

FAR: Federal Aviation Regulation

FBO: fixed base operator

FY: fiscal year

GA: general aviation

GPS: global positioning system

GS: glide slope

HIRL: high intensity runway edge lighting

IFR: instrument flight rules (FAR Part 91)

ILS: instrument landing system

IM: inner marker

LAAS: local area augmented system

LDA: localizer type directional aid

LDA: landing distance available

LIRL: low intensity runway edge lighting

LMM: compass locator at middle marker

LOM: compass locator at outer marker

LORAN: long range navigation

MALS: medium intensity approach lighting system with indicator lights

MIRL: medium intensity runway edge lighting

MITL: medium intensity taxiway edge lighting

MLS: microwave landing system

MM: middle marker

MOA: military operations area

MSL: mean sea level

NAVAID: navigational aid

NDB: nondirectional radio beacon

NM: nautical mile (6,076.1 feet)

NPDES: National Pollutant Discharge Elimination System

NPIAS: National Plan of Integrated Airport Systems

NPRM: notice of proposed rule making

ODALS: omnidirectional approach lighting system

OFA: object free area

OFZ: obstacle free zone

OM: outer marker

PAC: planning advisory committee

PAPI: precision approach path indicator

PFC: porous friction course

PFC: passenger facility charge

PCL: pilot-controlled lighting

PIW public information workshop

PLASI: pulsating visual approach slope indicator

POFA: precision object free area

PVASI: pulsating/steady visual approach slope indicator

PVC: poor visibility and ceiling

RCO: remote communications outlet

RRC: Runway Reference Code

RDC: Runway Design Code

REIL: runway end identification lighting

RNAV: area navigation

RPZ: runway protection zone

RSA: runway safety area

RTR: remote transmitter/receiver

RVR: runway visibility range

RVZ: runway visibility zone

SALS: short approach lighting system

SASP: state aviation system plan

SEL: sound exposure level

SID: standard instrument departure

SM: statute mile (5,280 feet)

SRE: snow removal equipment

SSALF: simplified short approach lighting system with runway alignment indicator lights

STAR: standard terminal arrival route

SWL: runway weight bearing capacity for aircraft with single-wheel tandem type landing gear

TACAN: tactical air navigational aid

TAF: Federal Aviation Administration (FAA) Terminal Area Forecast

TDG: Taxiway Design Group

TLOF: Touchdown and lift-off

TDZ: touchdown zone

TDZE: touchdown zone elevation

TODA: takeoff distance available

TORA: takeoff runway available

TRACON: terminal radar approach control

VASI: visual approach slope indicator

VFR: visual flight rules (FAR Part 91)

VHF: very high frequency

VOR: very high frequency omni-directional range

VORTAC: VOR and TACAN collocated

WAAS: wide area augmentation system



Appendix B

ASHRAE LEVEL II ENERGY AUDIT REPORT

CHANDLER MUNICIPAL AIRPORT CHD

CHANDLER arizona

Chandler Municipal Airport

Chandler, Arizona

ASHRAE Level II Energy Audit Report

Provided by

Quest energy group

June 2020



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Executive Summary

As part of the updated Master Plan for Chandler Municipal Airport, Quest Energy Group performed a comprehensive energy audit of selected buildings at the airport to assist in identifying and prioritizing potential energy conservation measures (ECMs).

This audit meets or exceeds the Level II requirements established by the American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE), which requires a historical analysis of all building utility consumption, efficiency improvement recommendations, and a detailed financial analysis recommendation. Above and beyond the requirements for an ASHRAE Level II Audit, Quest Energy Group developed a full scale energy simulation model using eQUEST software with International Performance Measurement and Verification Protocol (IPMVP) compliant baseline calibration in order to validate energy savings estimates.

Key Audit Findings

The Chandler Municipal Airport spent about $59,000 on electricity from January 2019 to December 2019. The results of the audit yielded the following findings listed below and are summarized in the following table and figure. Additionally, individual energy conservation opportunities are detailed within each individual building/area report following this Executive Summary.

- Incorporating all ECMs over a ten year timeline could reduce total energy costs by almost 38%. Incorporating a PV system to offset all energy usage onsite, would result in a payback of 13 years and make the Chandler Municipal Airport a Net-Zero Energy facility.
- Upgrading to LED fixtures and proper lighting controls results in an overall energy reduction of almost 6% with an overall simple payback close to 5.3 years.
- Small control upgrades to HVAC equipment in the Administration Building and ATCT would provide quick paybacks and reduce energy costs by 2.5%.
- Upgrading to a Variable Refrigerant Flow (VRF) system in the Administration building should be considered at the end of life of the current equipment. A VRF system could reduce total airport energy costs by up to 5%.
- LED upgrades to the airport landing lighting fixtures requires a significantly high first cost and results in an unfavorable economic return.
- Installing a solar PV system for individual buildings results in an average payback of about 16 years. This is mainly due to the Salt River Project (SRP) utility buyback rate of only $0.02-$0.03 per kWh instead of the full retail rate of $0.09 kWh (on average).

ECM	Measure Description	Estimated Initial Costs	Utility Cost Savings	Potential SRP Incentives	Simple Payback
ECM1	LED Lighting Upgrades	$13,400	$2,753	$2,280	4.0
ECM2	High Performance Lighting Controls	$7,250	$430	$1,450	13.5
ECM3	LED Exterior Lighting Upgrades	$51,040	$2,475	$1,500	20.0
ECM4	HVAC Controls Upgrades	$2,150	$1,351	$600	1.1
ECM5	HVAC Equipment Upgrades	$46,500	$2,953	$2,250	15.0
ECM6	Landing Lights LED Replacement	$110,000	$4,420	$4,000	24.0
ECM7	Instantaneous Hot Water Heaters	$2,425	$128	$99	18.2
ECM8	Receptacle Load Upgrades	$500	$336	$177	1.0
ECM9	Individual Solar PV Installations	$126,540	$7,873	$0	16.1

Figure 1 – Annual Financial Results Summary Table for Aggregated Measures (All Meters)

ECM	Measure Description	Electricity Usage (kWh/year)	Electricity Cost ($/year)	Percent Savings (%)
B0	Baseline Utility Usage	534,943	$58,928	0.0%
ECM1	LED Lighting Upgrades	513,653	$56,175	4.7%
ECM2	High Performance Lighting Controls	509,672	$55,744	5.4%
ECM3	LED Exterior Lighting Upgrades	482,814	$53,269	9.6%
ECM4	HVAC Controls Upgrades	470,672	$51,919	11.9%
ECM5	HVAC Equipment Upgrades	446,062	$48,965	16.9%
ECM6	Landing Lights LED Replacement	405,142	$44,545	24.4%
ECM7	Instantaneous Hot Water Heaters	403,999	$44,417	24.6%
ECM8	Receptacle Load Upgrades	401,201	$44,081	25.2%
ECM9	Individual Solar PV Installations	313,751	$36,208	38.6%

Figure 2 – Annual Results Breakdown for Aggregated Measures (All Meters)

Solar PV Discussion

The project team has indicated the area highlighted the image below as a potential location for a solar PV system. Based on the site visit, the following items need to be confirmed to determine whether the site could house a solar PV system:

- Federal Aviation Administration (FAA) regulations for glare and other flight impact issues.
- No underground piping or sewer systems that would require access
- Proper spacing between solar PV system and existing structures/roads/construction.



Figure 3: Potential Solar PV Location

Additionally, two major financial considerations need to be considered for the installation of a solar PV system:

1. In similar circumstances, other businesses have elected to form a power-purchase agreement (PPA) with a third-party developer. This would theoretically enable the airport to lease the land to a developer (solar services provider), who would build, own, and maintain the solar equipment. The solar services provider could then sell the produced energy back to the airport at a set rate. The

advantage of this approach is that the solar services provider could take advantage of any tax credits not available to City of Chandler, thus lowering the net cost of the project, while potentially avoiding or mitigating some of the barriers mentioned below.
    a. Taxpayer/ public approval of funding
    b. Utility connectivity issues and/or production arrangements
    c. Other airport operational constraints
2. SRP only offers about a $0.02-$0.03 per kWh credit for excess generation on an hourly basis. This means that if the PV system generates more energy than the property/building consumes, the project will only be credited $0.02-$0.03 per kWh instead of the retail rate of about $0.09 per kWh. Therefore, it is important to consider the installation of batteries for this project to store excess energy generation so that it can be used on site. SRP currently does not offer battery storage incentives to commercial customers, only to residential customers.

There are many potential options for installing solar PV at the Chandler Municipal airport. The following PV systems were evaluated with and without battery storage assuming that the airport enters into a power purchase agreement (PPA) with a third party developer and will not own their own system.

1. PV System to Offset All Airport Energy Usage
2. PV System to Offset Administration Building Energy Usage
3. PV System to Offset ATCT Energy Usage

The following table shows the financial results of the solar PV analysis including the following key metrics:

1. Internal Rate of Return - calculates the discount rate that results in the net present value of all cash flows for the project to equal zero over a 20 year period. This value can be used to compare investments and their profitability.
2. Straight Line Payback – the time required to earn back the amount invested in the project.
3. 20-year Cash Flow – the net amount of cash generated by the project over the 20-year period.

It should be noted that an hourly/daily analysis is needed to determine more specifically the first cost for battery storage and total excess generation from the PV system. Currently, conservative factors are being used, and further investigation into hourly loads could reduce the first cost and payback for the systems.

PV System Options without Battery Storage					
System Type	PV System Size	First Cost	Straight Line Payback (years)	Internal Rate of Return (IRR)	20-year Cash Flow
Offset all Airport Energy Usage	325 kW	$450,875	13.33	6.5%	$262,885
Offset Admin. Bldg Energy Usage	18 kW	$33,300	18.01	1.2%	$4,570
Offset ATCT Energy Usage	35 kW	$51,800	14.95	3.3%	$21,836

PV System Options with Battery Storage					
System Type	PV System Size	First Cost	Straight Line Payback (years)	Internal Rate of Return (IRR)	20-year Cash Flow
Offset all Airport Energy Usage	325 kW	$605,875	15.06	8.0%	$350,760
Offset Admin. Bldg Energy Usage	18 kW	$44,400	18.17	1.4%	$7,429
Offset ATCT Energy Usage	35 kW	$82,140	19.15	0.7%	$6,805

Methodology

The primary focus of the site audit performed was to survey the existing envelope, lighting, domestic hot water (DHW) and HVAC equipment in the buildings and provide a summary of condition, age and life of the units, and overall performance level. This audit is composed of a site visit conducted by John Daniels on May 19th, 2020 as well as conversations with site personnel.

Based on the information collected from the site audit, a detailed energy simulation model was developed using eQUEST (DOE2.2) software to analyze the baseline energy usage for the Administration Building at the airport. The collected information was also used to develop engineering grade spreadsheets of the remaining buildings and energy consuming equipment in scope: Air Traffic Control Tower, Maintenance Building, Hangars, Exterior Lighting, and Landing Lights. The methodology and assumptions in the energy modeling process are detailed below. A graphical depiction of the model is shown in each building report.

- A detailed energy model of the Administration Building was constructed based on drawings provided by airport personnel and field observations during the audit. Site inspections included verifying wall and roof constructions, glass types, lighting equipment, HVAC, DHW, and other major energy using equipment.
- Equipment operation schedules were based on operational, occupancy, and usage data and supplemented through interviews with the operations and maintenance staff and field observations.
- Lighting fixtures and schedules were input into the models based on field data and electrical drawings.
- HVAC and DHW equipment were added to the model according to drawings and field observations, and each zone was assigned to the appropriate HVAC system. Equipment efficiencies were based on nameplate data and/or mechanical plans. Operation schedules and controls were input according to maintenance staff interviews.

Project Information



Project Name & Location

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Baseline Utility Summary

Electricity bills from January 2019 to December 2019 were collected and analyzed for all utility meters in the scope. A summary of all utility meter annual electricity cost is provided below.

As shown below, the municipal airport spends about **$58,969 per year** on electricity at a unit cost of about **$0.11 per kWh.** The areas that account for the majority of electricity usage are the landing lights Air Traffic Control Tower (ATCT), and the Administration Building.

Utility Meter	Location	Electricity Usage	Unit Cost	Total Cost	% of Total
		kWh/year	$/kWh	$/year	Usage
117-280-004	Runway Lights	264,960	$0.11	$ 28,622	49.5%
858-480-004	ATCT	72,073	$0.09	$ 6,664	13.5%
036-390-004	Administration Bldg	69,560	$0.119	$ 8,280	13.0%
223-360-001	Exterior Lighting	45,200	$0.10	$ 4,632	8.4%
956-201-006	Unknown	35,004	$0.11	$ 3,749	6.5%
814-680-005	T-Hangars	27,596	$0.11	$ 2,926	5.2%
013-722-007	Maintenance Bldg	7,030	$0.15	$ 1,052	1.3%
402-980-004	Fuel Building	5,174	$0.17	$ 900	1.0%
863-754-006	Abandoned Bldg	4,000	$0.24	$ 960	0.7%
148-375-004	Unknown	2,969	$0.23	$ 671	0.6%
085-304-007	Unknown	1,377	$0.37	$ 513	0.3%
	Total	**534,943**	**$0.11**	$ 58,969	

Figure 4: Electricity Usage and Cost by Utility Meter

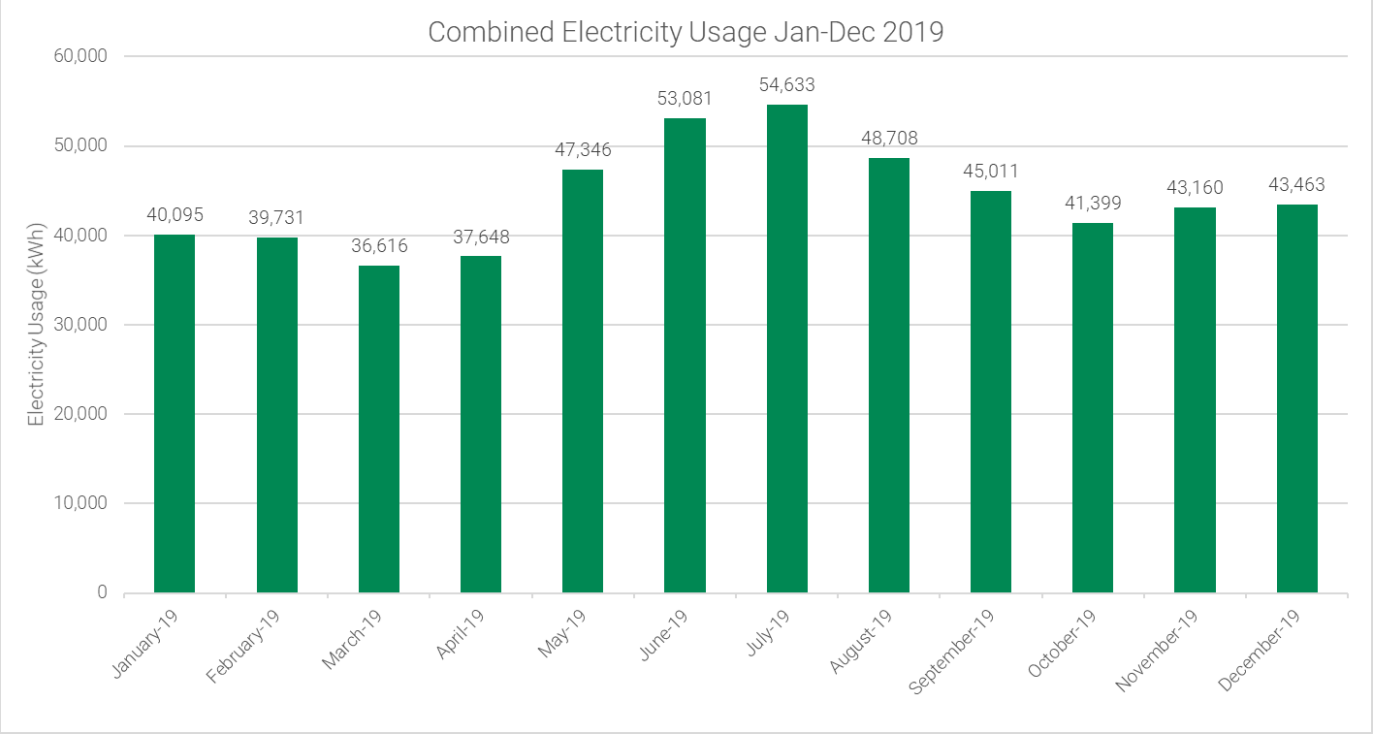


Figure 5 – Total Electricity Usage from Jan to Dec 2019

Baseline Model Calibration

Calibration Process

After a detailed baseline model is constructed for each utility meter, it is important to adjust and validate the accuracy of the model results by comparing it with the real-life building behavior. This process, known as calibration, is outlined in the paragraph and figure below.

Calibration of an energy model is initiated by running the model simulation using the actual weather data from the site over a one-year performance period. The simulated energy and power outputs are then compared to the historical utility data for the same period, and the model inputs are refined to make the simulated behavior match the actual data as closely as possible. Model input adjustments are typically made based on sub-metered data, trend data, and operational details provided by the building staff. This iterative process is repeated until the accuracy of the model is within reasonable tolerances (+/- 5% MBE as recommended by IPMVP).

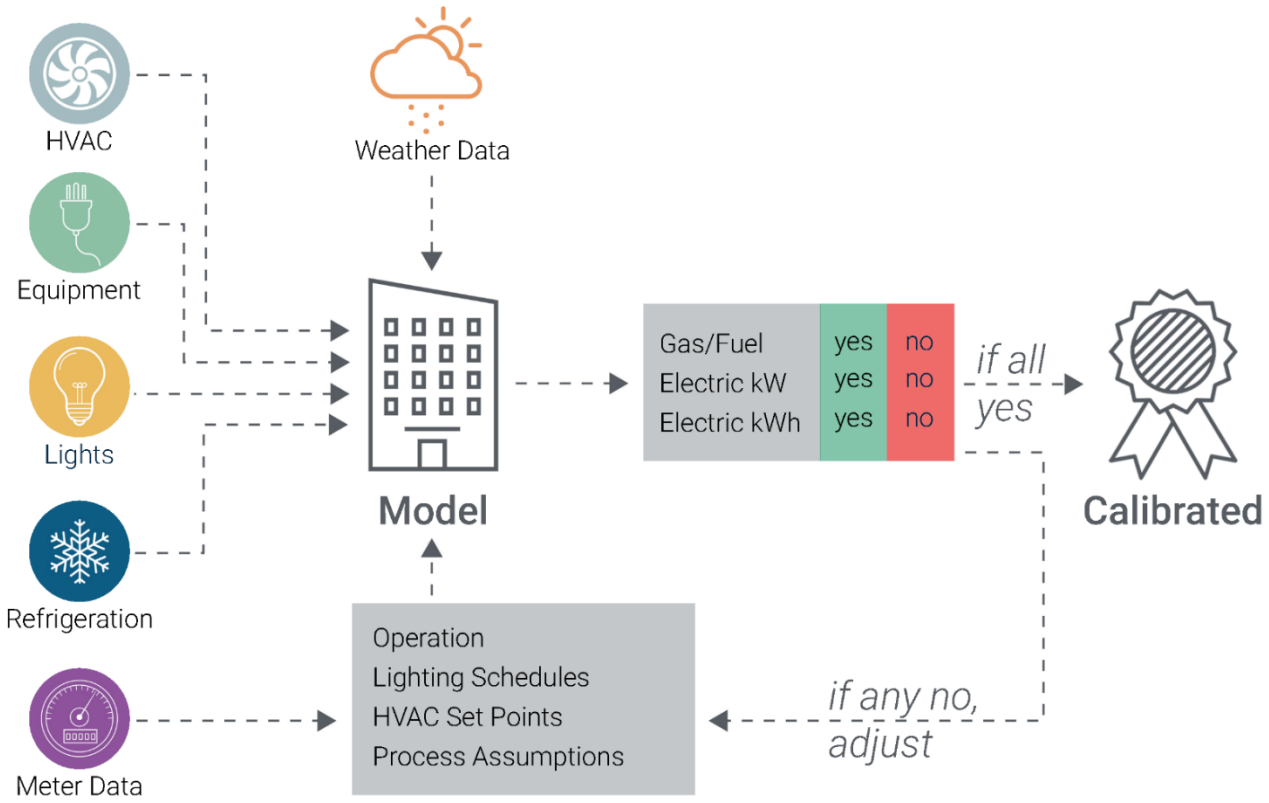
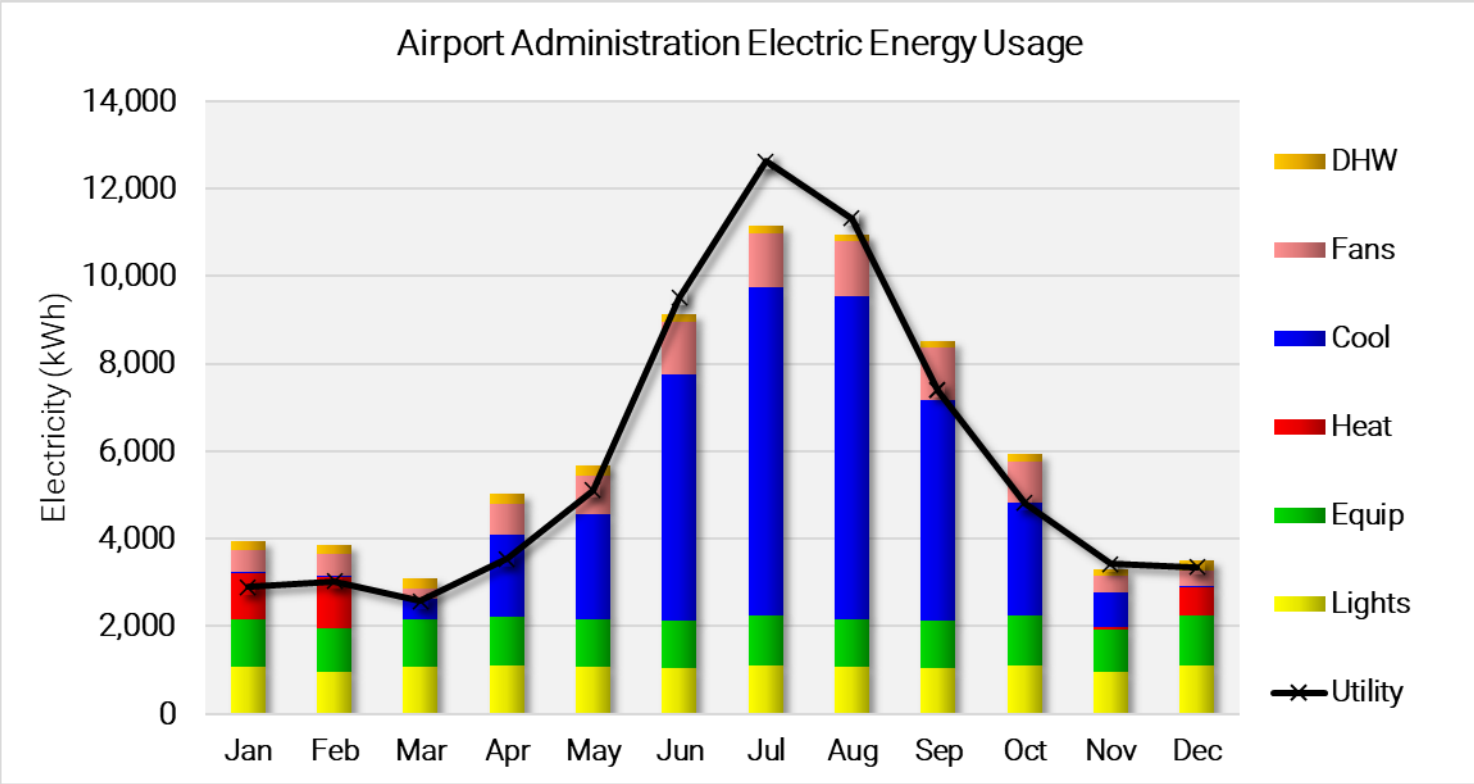


Figure 6 – Calibration Process Flowchart

Baseline Energy Use Analysis & Calibration

The building modeled and calibrated through eQUEST was the Administration Building. All other buildings/utility metered were calibrated utilizing engineering grade excel sheets. The figure below illustrates the simulated eQUEST electrical energy usage predicted throughout the one-year period (Jan 2019 – Dec 2019) as compared to the actual historical utility data. The black line represents actual building/utility data provided by each electrical meter. Most models were calibrated to within IPMVP guidelines for calibration (MBE <±5%, Cv(RSME) <15%).



Analysis Reports

Administration Building

Air Traffic Control Tower

Maintenance Building

T-Hangars A to I

Exterior and Canopy Lights

Runway and Taxiway Lights

Solar PV Analysis

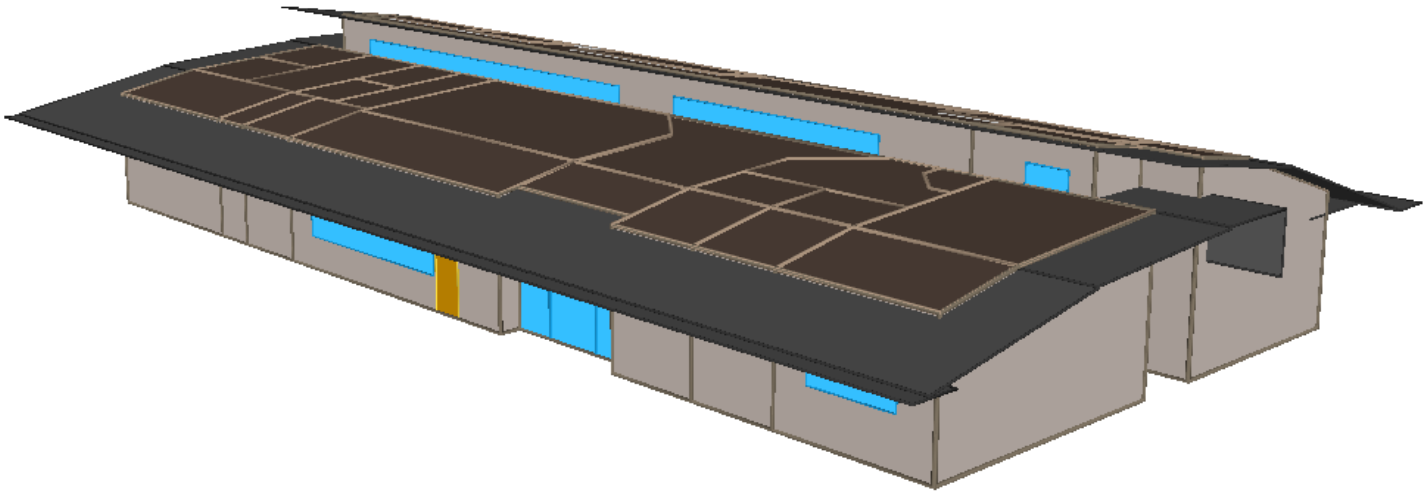


Airport Administration Building



Building Description

The airport administration building is comprised of private office, meeting/conference, lobby, and amenity areas. The total square footage of the building is about 5,000 SF. A 3D eQUEST rendering of the building is shown in the figure below.



Operational Schedules

The airport administration building is expected to be occupied from 7AM to 5PM Monday through Friday. Based on conversation with facility personnel, when the airport gets busier, the occupancy schedule changes to 6AM to 9PM Monday through Friday.

Energy Conservation Measures

The following section describes in detail individual energy conservation measures resulting from the site visit. Estimated energy savings, implementation cost, and simple payback are calculated for each conservation measure.

AA1: Replace Linear and Compact Fluorescent Lamps with LEDs

Existing Condition

The airport administration building utilizes a mixture of 2-lamp, 4ft. T8 fluorescent fixtures and recessed incandescent 60W lamps throughout. Each fixture has the opportunity to be upgraded to LED lamps/fixtures that draw significantly less power while also providing similar/better lighting levels.



Figure 1: Fluorescent Lighting Fixtures in the Hallways

Recommended Action

Replace all fluorescent lamps with LED lamps. Use a 12W GE LED12ET8/g/4/840 linear LED lamp or similar to replace linear fluorescent lamps. Replace all 60W incandescent lamps with LED 9W lamp. It is important that the LED lamp is checked for ballast compatibility. Utilize new fixtures only when deemed aesthetically or electrically necessary. The recommended fixture specifications can be found in the Appendix.



Figure 2: Dark Walls and Ceiling in Pilot's Lounge

LED lamps output similar lighting levels as CFLs at a reduced power draw; thus, minimizing lighting energy usage without compromising performance. Additionally, LED lamps have a longer lifespan minimizing maintenance and replacement costs. As a bonus, LED lamps contain no mercury, helping to streamline its recycling process.

It is also recommended that maintenance staff consider painting the walls to a brighter color (such as white) and replacing the old ceiling tiles with new, whiter ceiling tiles. Brighter colors have a higher reflectivity than darker colors meaning the brighter surfaces would reflect more light to the room. Less output from the lighting fixtures would be needed to provide the same lighting levels in the space. Thus, fewer fixtures would need to be installed, and it would require less energy to illuminate the space.

Energy and Cost Savings

Replacing all fluorescent and incandescent lamps with LED lamps would result in electrical savings of about 7,292 kWh per year. Total cost savings would be about $875 per year.

SRP offers a lighting rebate of $300 per kW of reduced installed demand for qualified interior LEDs. It is estimated that this recommendation could receive up to $600 in incentive rebates.

It is assumed that each fixture would take about 30 minutes to replace the lamps at a labor rate of $25 per hour (which assumes internal staff). Utilizing this information and cost data for the recommended lamps, the implementation cost would be about $3,000, and the simple payback would be 2.7 years, including the incentive.

AA2: Install High Performance Lighting Controls

Existing Condition

Currently, only the bathrooms and conference rooms in the administration building utility occupancy sensors. Based on conversation with airport personnel and observations during the site visit, the building has highly variable occupancy and it was noticed that lights were left on in spaces that were unoccupied.



Figure 3: Occupancy Sensor in the Restroom

Additionally, spaces such as the conference rooms and offices utilize significant amounts of natural light. There is opportunity to utilize daylight harvesting controls to dim lighting fixtures when sufficient natural light enters the space.

Recommended Action

It is recommended to expand the installation of occupancy sensors to the whole building and install daylighting controls in perimeter spaces with large quantity of windows. The occupancy sensors should turn off lighting fixtures within 20 minutes of people leaving the room. Daylighting controls should automatically dim perimeter lighting fixtures near windows to maintain a constant lighting level of 30 fc (typical for office spaces).

There are numerous lighting control companies that offer occupancy and daylighting control solutions such as Lutron, Lithonia, Leviton, etc. This installation is best implemented at the same time as upgrading lighting fixtures to LED fixtures since many lighting companies will offer LED upgrades and lighting control upgrades as a packaged deal.

Energy and Cost Savings

Installing high performance lighting controls including occupancy and daylighting sensors would result in electrical savings of about 1,682 kWh per year. Total cost savings would be about $202 per year.

SRP offers a lighting rebate of $0.40 per watt controlled. It is therefore estimated that this recommendation could receive up to $750 in incentive rebates.

Based on RSMeans and manufacturing data, each occupancy and daylight sensor would cost about $250 to purchase and install. Utilizing this information, the implementation cost would be about $3,750, and the simple payback would be over 10 years, including the incentive. It is thus recommended that this ECM be coupled with ECM AA1. Combining the two ECMs, the simple payback would be closer to 5.0 years.

AA3: Replace Indirect Lighting and Optimize Natural Light in Corridors and Lobby

Existing Condition

The corridors and main lobby of the administration building have significant amounts of linear fluorescent fixtures that provide indirect lighting to illuminate the higher walls and ceiling. Additionally, there are windows located near the ceiling, as shown on the right, that provide natural lighting to illuminate the ceiling and upper walls. Small amounts of the indirect lighting actually reach the work plane making it an inefficient form of providing light to the space. Replacing the indirect lighting with direct lighting would provide a more efficient operation and the natural lighting would still illuminate the ceiling and high walls.



Figure 4: Indirect Lighting and Natural Lighting in the Lobby

Recommended Action

It is recommended to remove the indirect linear fluorescent lamps with direct linear LED fixtures. This can be accomplished by simply repositioning the lighting covers to direct the light towards the ground instead of the ceiling. Alternatively, linear fixtures could be installed and suspended from the ceiling (below the level of the windows) to direct light to the work plane. Either scenario would minimize the lighting output and energy usage to illuminate the space while also maintaining an illuminated ceiling.

This recommendation should be considered with ECM AA1 and AA2. Installing daylighting controls would maximize the usage of natural lighting from the windows and minimize the energy output of the lighting fixtures.

Energy and Cost Savings

Removing indirect lighting and optimizing natural lighting would would result in electrical savings of about 375 kWh per year. Total cost savings would be about $45 per year.

SRP offers a lighting rebate of $300 per kW of reduced installed demand for qualified interior LEDs. It is estimated that this recommendation could receive up to $30 in incentive rebates.

It is assumed that this recommendation would be included in ECM AA1 LED upgrades. Based on RSMeans data, installing new ceiling hung fixtures would cost about $140 each. Each fixture would take about one hour to install at a labor rate of $125 per hour. Utilizing this information and cost data, the implementation cost would be about $800, and the simple payback would be over 10 years, including the incentive. Coupling this recommendation with ECM AA1 and AA2, the total simple payback would be closer to 5.5 years.

AA4: Install New Thermostats with Optimized Temperature Controls

Existing Condition

During the site visit, it was noticed that only two thermostats exist; however, there are four HVAC units serving the administration building. It is unclear how the two thermostats are controlling the four HVAC units. Additionally, it was noticed that the existing thermostats are very old and do not have the ability for scheduling or automatic controls, as shown on the right. Given that the building is not occupied 24/7, installing thermostats with scheduling and automatic controls would reduce heating, cooling, and fan energy by the HVAC units.



Figure 5: Thermostats in Administration Building

The cooling setpoints shown on the thermostats are around 71-72 °F. These cooling setpoint temperatures are very low and typical offices in Phoenix, Arizona maintain occupied cooling setpoint temperature around 74 °F.

Recommended Action

It is recommended that the existing thermostats be replaced with four, new thermostats so that each HVAC unit is served by its own thermostat. Each thermostat should have scheduling capability and controls that allow for automatic temperature setbacks overnight and during unoccupied times. Examples of companies that produce these thermostats would include Honeywell, Google, or Samsung. These thermostats can be found at Home Depot or Lowes.

Onsite personnel indicated that the office areas are occupied from 7AM to 5PM Monday through Sunday. Thus, it is recommended that the staff program the thermostats to be 70 °F for heating and 74 °F for cooling during occupied hours. Schedules should be implemented so that the setback temperatures are 82 °F for cooling and 60 °F for heating from 6PM to 6AM Monday through Friday and all day on Saturday and Sunday. These schedules can be adjusted during busier times of the year.

Energy and Cost Savings

Installing four new thermostats and programming setback schedules would result in electrical energy savings of about 8,270 kWh per year. Total cost savings would be about $992 per year.

SRP offers a smart thermostat rebate of $150 per thermostat. Thus, the total rebate would be $600.

Based on cost data from sources like Home Depot and Lowes, smart thermostats cost about $250 each. Each thermostat would take about one hour to install at a labor rate of $125 per hour. Utilizing this information and cost data, the implementation cost would be about $1,500, and the simple payback would be 0.9 years, including the incentive.

AA5: Replacing Existing Heat Pump Units with Ductless VRF System

Existing Condition

The administration building currently utilizes four, 7.5-ton RHEEM heat pump units that were installed around 2012. The published efficiency of the units is 11 EER for cooling and 3.3 COP for heating. Given the age of the equipment, it is expected that the efficiency of the units is closer to 10.5 EER and 3.0 COP, respectively.



Figure 6: One of four Condenser Units serving the Admin Building

The Air Traffic Control Tower building has upgraded their HVAC system to VRF units. There is opportunity in the administration building to upgrade the current equipment to a high efficiency VRF system.

Recommended Action

It is recommended that the existing HVAC system be replaced with a VRF system similar to the Air Traffic Control Tower. These systems utilize the inverter control technology to modulate the compressor and fans to meet part load conditions and eliminate the inefficiencies of cycling compressors. VRF systems have cooling and heating efficiencies up to 28 IEER and 4.2 COP and utilizing ductless VRF units could reduce fan energy usage by nearly 50%. Additionally, a VRF system is a zonal system so each room would have its own control over temperature setpoints and thermal comfort. This system type would allow for optimized HVAC controls to be able to implement temperature setbacks based on occupancy or time of day for each room in the building.

Energy and Cost Savings

Installing a VRF system to replace the existing heat pump units would result in electrical energy savings of about 24,610 kWh per year. Total cost savings would be about $2,953 per year.

SRP offers a $75 per ton rebate for installing multi-split variable refrigerant flow systems. Based on the current equipment tonnage, the rebate is estimated at $2,250.

Based on RSMeans cost data, each evaporator unit would cost about $2,650 and each condensing unit would cost about $20,000, for a total implementation cost of $46,500. The simple payback would be over 10 years, including the incentive.

AA6: Insulate Domestic Hot Water Pipes

Existing Condition

The administration building currently utilizes an electric domestic hot water (DHW) storage tank to provide hot water to restrooms and the pantry sink. During the site visit, it was noticed that all DHW pipes were uninsulated, as shown on the right. Uninsulated pipes result in significant heat loss in the distribution of hot water to the restrooms and pantry area.



Figure 7: Uninsulated copper DHW pipes

Recommended Action

It is recommended that 1”-1.5” insulation be installed on the DHW pipes to reduce distribution heat loss. Insulating DHW pipes not only reduces the energy consumed by the water heater, but also reduces the wait time for occupants wanting hot water at the pantry or restrooms.

Energy and Cost Savings

Installing DHW piping insulation would result in electrical energy savings of about 173 kWh per year. Total cost savings would be about $21 per year.

Based on typical cost data, it estimated the material cost to insulate DHW pipes would cost about $50. It is assumed that installing insulation would take about 30 minutes a labor rate of $25 per hour (which assumes internal staff). Using this cost data, total implementation cost would be about $75, and the simple payback would be 3.6 years, including the incentive.

AA7: Install Instantaneous, Tankless Electric Water Heaters

Existing Condition

The administration building currently utilizes a 30 gallon electric domestic hot water (DHW) storage tank to provide hot water to restrooms and the pantry sink, as shown on the right. While electric water heaters are about 97% efficient, there is significant distribution losses from the storage tank and uninsulated piping. Given that the only end uses for DHW are restrooms, shower, and a pantry sink, the 30 gallons storage tank seems unnecessary, and there is opportunity to pursue instantaneous, tankless electric water heaters.



Figure 8: 30 gal DHW Storage Tank

Recommended Action

It is recommended that instantaneous, tankless electric water heaters be installed 1) at the pantry sink and 2) in each restroom. Instantaneous water heaters eliminate tank storage heat losses and distribution piping heat losses.

Energy and Cost Savings

Installing instantaneous electric water heaters would result in electrical savings of about 663 kWh per year. Total cost savings would be about $76 per year.

SRP offers custom rebates of $0.10 per kWh saved, up to 60% of the implementation cost. This recommendation would qualify for a rebate of about $66.

Based RSMeans costs and cost from retail stores, the material cost for three instantaneous hot water heaters rated at 1.27 gpm would be about $170 each. Estimated installation cost would be about $300 per unit. Thus, the total implementation cost would be about $1,410, and the simple payback would be over 10 years, including the incentive.

AA8: Install Receptacle Load Controls to Turn Off Equipment

Existing Condition

The administration building utilizes a wide range of appliances such as printers/scanners, TVs, compact refrigerators, and more. Given that the building has variable occupancy, there are times when this equipment will remain on even when no one is present or utilizing the equipment. Based on previous project experience, as much as 50% of miscellaneous equipment can be left on overnight for a typical office space. Installing controls to automatically turn off TVs, computers, coffee makers, etc. could significantly reduce wasted energy usage.



Figure 9: Administration Pantry Area

Recommended Action

It is recommended that receptacle load controls be implemented for all office, pantry, copy room, and conference areas to turn off equipment overnight and during unoccupancy. Many lighting manufacturers have incorporated receptacle load controls into their lighting controls, and thus, this recommendation should be considered alongside ECMs AA1 and AA2.

Receptacle load controls can come in a variety of forms. New outlets can be installed that are separately circuited to include one outlet for equipment that can be turned off and another outlet that remains on. Another form of receptacle control is the use of power strips or wireless remote control plug-ins. The power strips and plug ins can be controlled directly from a lighting control system or simply from an App on your phone. These controls are typical for home retrofits but apply to small office spaces such as the administration building. The following link to The Home Depot website shows examples of these controls: https://www.homedepot.com/b/Electrical-Wiring-Devices-Light-Controls-Plug-Adapters/Remote-Control/N-5yc1vZcjvpZ1z0r7we.

Energy and Cost Savings

Installing receptacle load controls to turn off equipment during unoccupancy would result in electrical savings of about 1,771 kWh per year. Total cost savings would be about $213 per year.

SRP offers custom rebates of $0.10 per kWh saved, up to 60% of the implementation cost. This recommendation would qualify for a rebate of about $177.

Based on RSMeans data and retail store cost data, purchasing simple plug-in and power strip controls would cost about $500. Installing the equipment and programming could be completed in-house since it only requires the use of a smart phone. If so, the implementation cost would be about $500, and the simple payback would be 1.5 years.

AA9: Implement Policy to Purchase Energy Star Equipment

Existing Condition

The administration building utilizes a wide range of appliances such as printers/scanners, TVs, compact refrigerators, and more. Based on site observations, a number of these equipment were not Energy Star certified. These pieces of equipment are typically left on overnight or utilize significant amounts of power when not in use. Upgrading to Energy Star equipment would minimize usage during operation and non-operation.

Many corporations have begun instituting policies that require the purchase of Energy Star equipment. There is opportunity to implement similar practices across the airport buildings to minimize energy usage due to miscellaneous equipment.

Recommended Action

It is recommended that the airport implement a policy to purchase Energy Star equipment when purchasing new equipment or replacing existing equipment. All Energy Star rated equipment from office, pantry, and AV equipment can be found on the following website: https://www.energystar.gov/productfinder/. Many of the products found on this site can be purchased from local retail stores such as Home Depot, Lowes, Best Buy, etc.

Energy and Cost Savings

Implementing a policy to purchase Energy Star equipment would result in electrical savings of about 1,027 kWh per year. Total cost savings would be about $123 per year.

Based on the Energy Star website, the cost between standard and Energy Star equipment is negligible, and thus, there is no implementation cost and the simple payback is immediate.

Analysis Results

Economic Results Summary

The following table details the eQUEST outputs, energy savings, and cost savings for each ECM option evaluated. Key findings from the energy analysis include:

- Implementing all recommendations could reduce the total building energy usage by nearly 60% and reduce energy costs by more than 50%.
- Installing LED lighting and high performance controls can reduce electrical energy costs by 13% with a 5.5 year payback.
- Installing proper temperature controls and setpoints can reduce energy costs by about 11% with a very short payback.
- Replacing HVAC equipment should only be considered at the end of life. However, upgrading to a VRF system with optimized zone controls can reduce energy costs by nearly 33%.
- Utilizing instantaneous hot water heaters can reduce hot water energy usage by nearly 30%.
- Installing Energy Star equipment and providing optimized controls of plug loads can reduce energy cost by 4% with minimal implementation cost.

Chandler Aiport Administration Building									
#	Run				HVAC				Electric
		Ambient Lighting	Misc Equip	DHW Electric	Heating Electric	Cooling Electric	Vent Fans	Total HVAC	Total Electric
		(kWh)	(kWh)	(kWh)	(kWh)	(kWh)	(kWh)	(kWh)	(kWh)
0	Calibrated Model	12,750	13,015	2,495	2,921	33,717	9,381	46,019	74,319
AA1	0+Replace Fluorescents with LED Fixtures	6,375	13,015	2,496	3,502	32,316	9,281	45,099	67,027
AA2	L1+Install High Performance Lighting Controls	4,912	13,015	2,496	3,632	31,994	9,254	44,880	65,345
AA3	L2+Optimize Natural Lighting and Remove Uplighting	4,585	13,015	2,496	3,660	31,922	9,250	44,832	64,970
AA4	L3+Install New Thermostats with Temperature Setbacks	4,585	13,015	2,492	1,627	27,663	7,289	36,579	56,700
AA5	M1+Replace Heat Pumps with VRF System	4,585	13,015	2,492	1,032	8,023	2,916	11,971	32,090
AA6	M2+Insulate Domestic Hot Water Pipes	4,585	13,015	2,325	1,035	8,016	2,915	11,966	31,917
AA7	P1+Install Instantaneous Electric Water Heaters	4,585	13,015	1,693	1,035	8,016	2,915	11,966	31,284
AA8	P2+Install Receptacle Load Controls	4,585	11,346	1,693	1,064	7,904	2,894	11,862	29,513
AA9	R1+Install Energy Star Equipment	4,585	10,372	1,693	1,082	7,841	2,886	11,809	28,486
	Savings relative to Previous Measure								
AA1	0+Replace Fluorescents with LED Fixtures	6,375	-	(1)	(581)	1,401	100	920	7,292
AA2	L1+Install High Performance Lighting Controls	1,463	-	-	(130)	322	27	219	1,682
AA3	L2+Optimize Natural Lighting and Remove Uplighting	327	-	-	(28)	72	4	48	375
AA4	L3+Install New Thermostats with Temperature Setbacks	-	-	4	2,033	4,259	1,961	8,253	8,270
AA5	M1+Replace Heat Pumps with VRF System	-	-	-	595	19,640	4,373	24,608	24,610
AA6	M2+Insulate Domestic Hot Water Pipes	-	-	167	(3)	7	1	5	173
AA7	P1+Install Instantaneous Electric Water Heaters	-	-	632	-	-	-	-	633
AA8	P2+Install Receptacle Load Controls	-	1,669	-	(29)	112	21	104	1,771
AA9	R1+Install Energy Star Equipment	-	974	-	(18)	63	8	53	1,027
	Total Savings								
	Totals:	8,165	2,643	802	1,839	25,876	6,495	34,210	45,833
	Percent of Baseline:	64.0%	20.3%	32.1%	63.0%	76.7%	69.2%	74.3%	61.7%

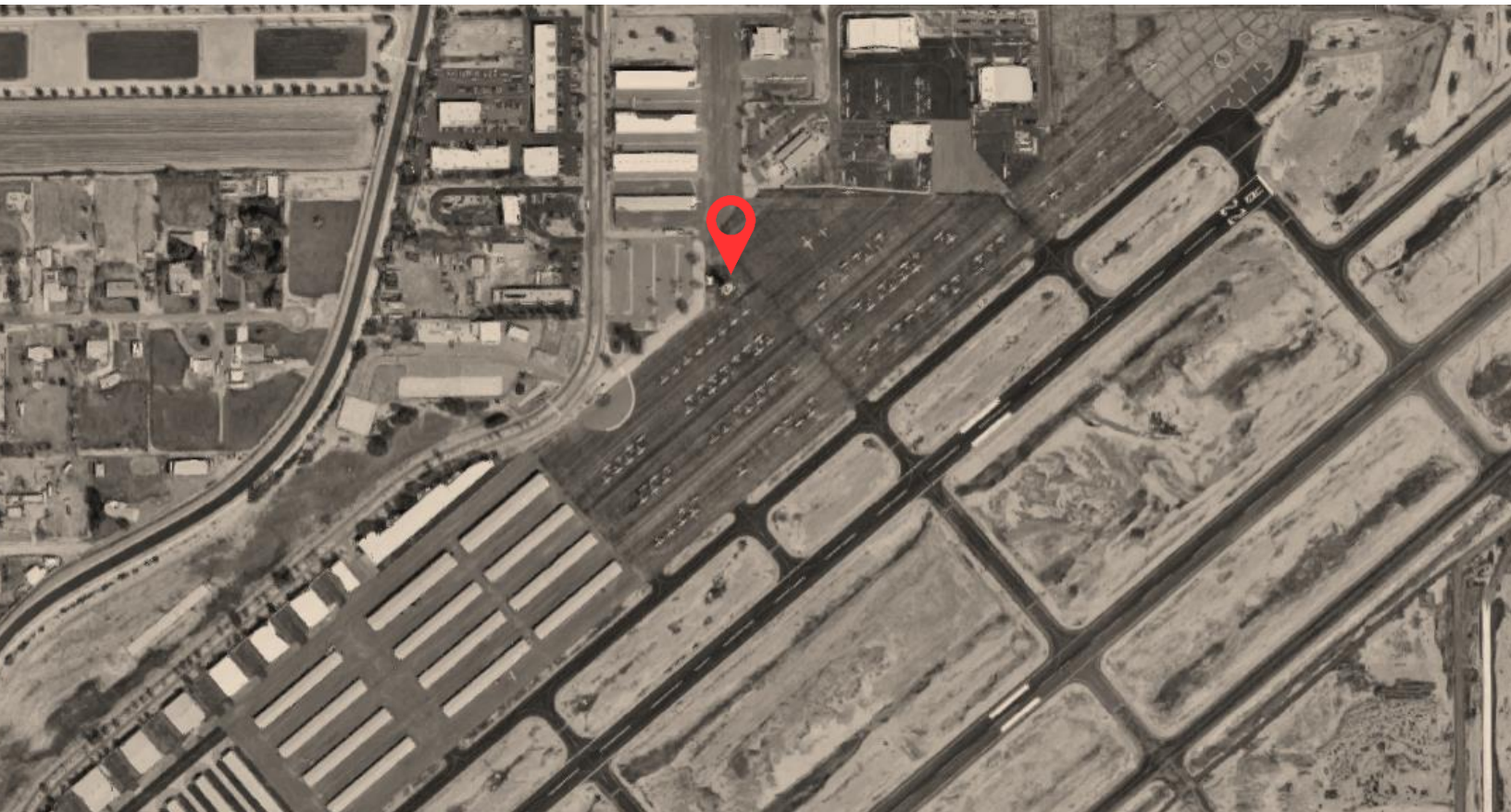
Figure 10: Energy and Cost Summary for Each ECM

Economic results are summarized in the table below. Estimated implementation costs for each measure were based on manufacturing data and RSMeans data.

ECM	Measure Description	First Cost	Utility Cost Savings	SRP Incentive	Simple Payback
AA1	0+Replace Fluorescents with LED Fixtures	$3,000	$875	$600	2.7
AA2	L1+Install High Performance Lighting Controls	$3,750	$202	$750	14.9
AA3	L2+Optimize Natural Lighting and Remove Uplighting	$800	$45	$30	17.1
AA4	L3+Install New Thermostats with Temperature Setbacks	$1,500	$992	$600	0.9
AA5	M1+Replace Heat Pumps with VRF System	$46,500	$2,953	$2,250	15.0
AA6	M2+Insulate Domestic Hot Water Pipes	$75	$21	$0	3.6
AA7	P1+Install Instahot Water Heaters	$1,410	$76	$66	17.7
AA8	P2+Install Receptacle Load Controls	$500	$213	$177	1.5
AA9	R1+Install Energy Star Equipment	$0	$123	$0	Immediate

Figure 11 – Economic Results Summary

Air Traffic Control Tower



Energy Conservation Measures

The following section describes in detail individual energy conservation measures resulting from the site visit. Estimated energy savings, implementation cost, and simple payback are calculated for each conservation measure.

AT1: Replace Linear and Compact Fluorescent Lamps with LEDs

Existing Condition

The air traffic control building utilizes a mixture of 2-lamp 4ft. T8 fluorescent fixtures and recessed incandescent 60W lamps throughout. Each fixture has the opportunity to be upgraded to LED lamps/fixtures that draw significantly less power while also providing similar/better lighting levels.



Figure 1: Fluorescent Lighting Fixtures in the ATCT

Recommended Action

Replace all fluorescent lamps with LED lamps. Use a 12W GE LED12ET8/g/4/840 linear LED lamp or similar to replace linear fluorescent lamps. Replace all 60W incandescent lamps with 9W LED lamp. It is important that the LED lamp is checked for ballast compatibility. Utilize new fixtures only when deemed aesthetically or electrically necessary. The recommended fixture specifications can be found in the Appendix.

LED lamps output similar lighting levels as CFLs at a reduced power draw; thus, minimizing lighting energy usage without compromising performance. Additionally, LED lamps have a longer lifespan minimizing maintenance and replacement costs. As a bonus, LED lamps contain no mercury, helping to streamline its recycling process.

Energy and Cost Savings

Replacing all fluorescent and incandescent lamps with LED lamps would result in electrical savings of about **4,912 kWh per year.** Total cost savings would be about **$454 per year**.

SRP offers a lighting rebate of $300 per kW of reduced installed demand for qualified interior LEDs. It is estimated that this recommendation could receive up to **$600** in incentive rebates.

It is assumed that each fixture would take about 30 minutes to replace the lamps at a labor rate of $25 per hour (which assumes internal staff). Utilizing this information and cost data for the recommended lamps, the implementation cost would be about **$2,500**, and the simple payback would be **4.2 years,** including the incentive.

AT2: Install High Performance Lighting Controls

Existing Condition

Currently, the air traffic control tower building does not utilize any occupancy sensors. Based on conversation with airport personnel and observations during the site visit, the building has highly variable occupancy on multiple floors and it was noticed that lights were left on in spaces that were unoccupied.



Figure 2: Lighting Fixture in Electrical Room

Recommended Action

It is recommended to install occupancy sensors throughout the building. The occupancy sensors should turn off lighting fixtures within 20 minutes of people leaving the room.

There are numerous lighting control companies that offer occupancy and daylighting control solutions such as Lutron, Lithonia, Leviton, etc. This installation is best implemented at the same time as upgrading lighting fixtures to LED fixtures since many lighting companies will offer LED upgrades and lighting control upgrades as a package.

Energy and Cost Savings

Installing high performance lighting controls including occupancy and daylighting sensors would result in electrical savings of about 1,403 kWh per year. Total cost savings would be about $130 per year.

SRP offers a lighting rebate of $0.40 per watt controlled. It is therefore estimated that this recommendation could receive up to $450 in incentive rebates.

Based on RSMeans and manufacturing data, each occupancy and daylight sensor would cost about $250 to purchase and install. Utilizing this information, the implementation cost would be about $2,250, and the simple payback would be over 10 years, including the incentive. It is thus recommended that this ECM be coupled with ECM AA1. Combining the two ECMs, the simple payback would be closer to 6.7 years.

AT3: Replace the HPS Beacon Light with LED Fixture

Existing Condition

The current beacon light draws about 2000W and is controlled by a photocell to operate from dusk till dawn. Similar to the other landing lights, there is opportunity to replace the beacon fixture with a more efficient LED fixture.



Figure 3: Beacon Light at top of ATCT

Recommended Action

Replace the 2000W beacon fixture with a 795W RBMI Rotating Beacon light, or similar. Based on FAA regulations, the whole fixture would need to be replaced, not just the lamps. Additionally, staff personnel should consider if the voltage between the new LED fixtures and old incandescent fixtures would change.

Energy and Cost Savings

Replacing the existing beacon fixture with a new, higher efficient light would result in electricity savings of about **4,380 kWh per year** and cost savings of about **$405** per year.

SRP offers custom rebates of $0.10 per kWh. This recommendation could qualify for **$438** in rebates.

Based on previous projects and manufacturing data, the expected cost for the beacon light would be about **$10,000**. The simple payback would be **over 10 years,** including incentives.

AT4: Program Thermostats with Optimized Temperature Setbacks

Existing Condition

During the site visit, each room in the ATCT utilizes the smart thermostat as shown on the right. However, it was noticed that the thermostats have not been programmed or scheduled. Additionally, the thermostats were locked from editing and were not able to be programmed during the visit. Given that the building is not occupied 24/7 and has variable occupancy, programming the thermostats for temperature setback modes would reduce heating, cooling, and fan energy by the HVAC units.



Figure 4: Existing Smart Thermostats in ATCT

Recommended Action

It is recommended that the existing thermostats be programmed with optimized schedules for temperature setbacks. Schedules should be implemented so that the setback temperatures are 82 °F for cooling and 60 °F for heating from 9PM to 6AM everyday of the week. These schedules can be adjusted during busier times of the year.

Energy and Cost Savings

Installing four new thermostats and programming setback schedules would result in electrical energy savings of about 2,880 kWh per year. Total cost savings would be about $266 per year.

It is estimated that an LG electrician would need about 30 minutes per thermostat to reprogram at a labor rate of $125 per hour. If so, the implementation cost would be about $500, and the simple payback would be 1.9 years, including the incentive.

AT5: Adjust Thermostat Setpoints to 74° F for Cooling in IT Rooms

Existing Condition

During the site visit, it was noticed that the IT rooms had cooling temperature setpoints between 68-70 °F, as shown in the image on the right. While IT rooms need to be conditioned to relatively cool temperatures, IT equipment can operate at temperatures up to 78 °F without malfunction or reduced speed. Setpoints of 68 °F are not needed and should be adjusted closer to 74 °F.

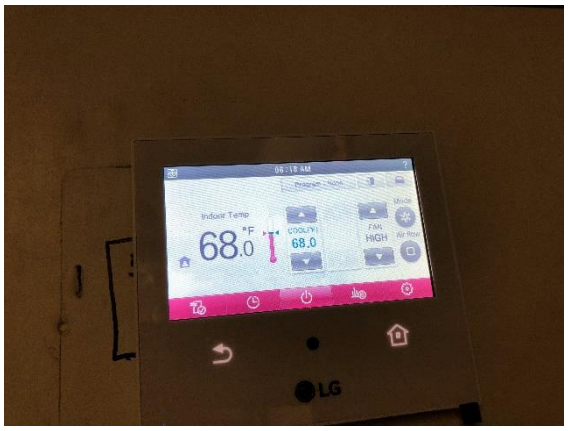


Figure 5: Thermostat in IT Room

Recommended Action

It is recommended that temperature setpoints in the IT rooms be adjusted from 68-70 °F to 74 °F. Increasing the temperature in the space to 74 °F does not hinder the function of the IT equipment and reduces cooling energy consumption considerably.

Energy and Cost Savings

Adjusting temperature setpoints in the IT rooms would result in electrical energy savings of about 561 kWh per year. Total cost savings would be about $52 per year.

Adjusting setpoints requires no implementation cost, and thus, the simple payback is immediate.

AT6: Remove Old AC Units and Insulate Walls

Existing Condition

There exist a number of old, AC units in the air traffic control tower as the one shown on the right. Given that all spaces now utilize newer VRF units, the old AC units can be removed so that the spot that once held the AC unit can be covered and insulated.



Figure 6: Window Unit in ATCT

Recommended Action

It is recommended that all old AC units be removed, and the wall be filled with at a minimum R-13 Batt insulation between 4in wood studs. Reducing the infiltration and heat transfer through the envelope reduces the cooling load on the VRF unit and results in significant energy savings.

Energy and Cost Savings

Insulating the wall to minimize infiltration and heat transfer would result in in electrical energy savings of about 432 kWh per year. Total cost savings would be about $40 per year.

Based on typical construction cost and RSMeans data, the cost to install R-13 batt insulation between 4in wood studs is about $5 per SF. It is estimated that a total of 15 SF would be needed to fully cover and insulate the holes in the wall. If so, the implementation cost would be about $150, and the simple payback would be about 3.8 years.

AT7: Install Instantaneous, Tankless Electric Water Heaters

Existing Condition

The air traffic control tower building currently utilizes a 6 gallon electric domestic hot water (DHW) storage tank to provide hot water to restrooms, as shown on the right. While electric water heaters are about 97% efficient, there is significant distribution losses from the storage tank and uninsulated piping. Given that the only end uses for DHW are restrooms and breakroom, the 6 gallon storage tank seems unnecessary, and there is opportunity to pursue instantaneous, tankless electric water heaters.



Figure 7: 6 Gallon DHW Storage Tank

Recommended Action

It is recommended that instantaneous, tankless electric water heaters be installed in each restroom. Instantaneous water heaters eliminate tank storage heat losses and distribution piping heat losses.

Energy and Cost Savings

Installing instantaneous electric water heaters would result in electrical savings of about 337 kWh per year. Total cost savings would be about $31 per year.

SRP offers custom rebates of $0.10 per kWh saved, up to 60% of the implementation cost. This recommendation would qualify for a rebate of about $33.

Based RSMeans costs and cost from retail stores, the material cost for two instantaneous hot water heaters rated at 1.27 gpm would be about $170 each. Estimated installation cost would be about $300 per unit. Thus, the total implementation cost would be about $940, and the simple payback would be over 10 years, including the incentive.

Analysis Results

Economic Results Summary

Energy results for each of the ECMs described above are shown in the table below. Key findings from the energy analysis include:

- Implementing all recommendations could reduce the ATCT energy usage by nearly 21%
- Installing LED lighting and high performance controls can reduce electrical energy costs by 15%.
- Installing proper temperature controls and setpoints can reduce energy costs by about 5% with a very short payback.
- Utilizing instantaneous hot water heaters can reduce hot water energy usage by nearly 30% and overall energy usage by about 0.5%.

ECM	Measure Description	Electricity Usage (kWh/year)	Utility Cost ($/year)	Percent Savings	Incremental	
					Cost Savings	Percent Savings
B0	Baseline Usage	72,073	$6,664	0.0%	$0	0.0%
AT1	Replace Fluorescent Lamps with LEDs	67,161	$6,210	6.8%	$454	6.8%
AT2	Install High Performance Lighting Controls	65,758	$6,080	8.8%	$130	1.9%
AT3	Replace HPS Beacon Light with LED Fixture	61,378	$5,675	14.8%	$405	6.1%
AT4	Program Thermostats with Optimized Temperature Setbacks	58,498	$5,409	18.8%	$266	4.0%
AT5	Adjust Thermostat Setpoints to 74 °F in IT Rooms	57,937	$5,357	19.6%	$52	0.8%
AT6	Remove Old AC Units and Insulate Walls	57,505	$5,317	20.2%	$40	0.6%
AT7	Install Instantaneous, Tankless Electric Water Heaters	57,168	$5,286	20.7%	$31	0.5%

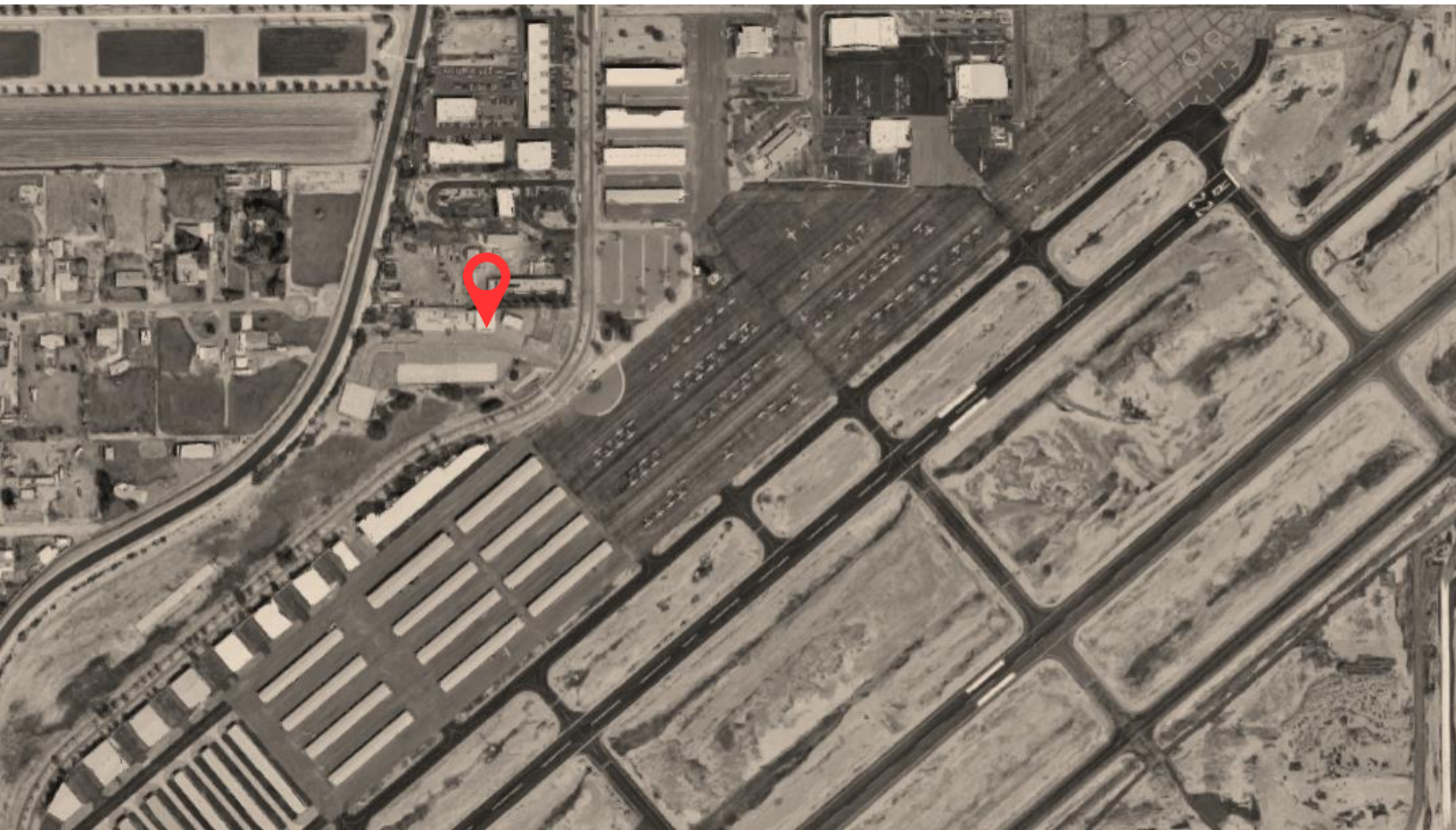
Figure 8: Energy and Cost Summary for Each ECM

Economic results are summarized in the table below. Estimated implementation costs for each measure were based on manufacturing data and RSMeans data.

ECM	Measure Description	First Cost	Utility Cost Savings	SRP Incentives	Simple Payback (years)
AT1	Replace Fluorescent Lamps with LEDs	$2,500	$454	$600	4.2
AT2	Install High Performance Lighting Controls	$2,500	$130	$450	15.8
AT3	Replace HPS Beacon Light with LED Fixture	$10,000	$405	$438	23.6
AT4	Program Thermostats with Optimized Temperature Setbacks	$500	$266	$0	1.9
AT5	Adjust Thermostat Setpoints to 74 °F in IT Rooms	$0	$52	$0	Immediate
AT6	Remove Old AC Units and Insulate Walls	$150	$40	$0	3.8
AT7	Install Instantaneous, Tankless Electric Water Heaters	$940	$31	$33	29.1

Figure 9 – Economic Results Summary

Maintenance Building



Energy Conservation Measures

The following section describes in detail individual energy conservation measures resulting from the site visit and analysis for interior and exterior lighting. Estimated energy savings, implementation cost, and simple payback are calculated for each conservation measure.

M1: Replace All Linear Fluorescent Fixtures with LED Fixtures

Existing Condition

The airport maintenance facility utilizes a 4-lamp, 4-ft. T8 linear fluorescent fixtures. Each fixture has the opportunity to be upgraded to LED fixtures that draw significantly less power while also providing same/better lighting levels.



Figure 1: Interior Linear Fluorescent Fixtures

Recommended Action

It is recommended that each T8 lamp should be replaced with a 12W GE LED12ET8/g/4/840 linear LED lamp or similar. Utilize new fixtures only when deemed aesthetically or electrically necessary. The recommended fixture specifications can be found in the Appendix.

LED lamps output similar lighting levels as fluorescent fixtures at a reduced power draw; thus, minimizing lighting energy usage without compromising performance. Additionally, LED lamps have a longer lifespan minimizing maintenance costs. As a bonus, LED lamps contain no mercury, helping to streamline the recycling process.

Energy and Cost Savings

Replacing all linear fluorescent fixtures with LED fixtures would result in electrical energy savings of about 2,868 kWh per year and cost savings of about $316 per year.

SRP offers a lighting rebate of $300 per kW of reduced installed demand for qualified interior LEDs. It is estimated that this recommendation could receive up to $150 in incentive rebates.

It is assumed that each fixture would take about 30 minutes to replace the lamps at a labor rate of $25 per hour (which assumes internal staff). Utilizing this information and cost data for the recommended lamps, the implementation cost would be about $1,100, and the simple payback would be 3.0 years, including the incentive.

M2: Install High Performance Lighting Controls

Existing Condition

Based on the site visit, the maintenance building currently does not utilize occupancy sensors to control lighting fixtures. Given that this building has low occupancy and high variability during the day, installing occupancy sensors can significantly reduce energy usage and run time for the lighting fixtures.

Additionally, the maintenance building utilizes significant amounts of skylights. There is opportunity to utilize daylight harvesting controls to dim lighting fixtures when sufficient natural light enters the space.



Figure 2: Linear Fluorescent Fixtures in the Maintenance Building

Recommended Action

It is recommended to install a couple of occupancy and daylighting sensors in the maintenance building to control lighting fixtures. The occupancy sensors should turn off lighting fixtures within 20 minutes of people leaving the space. Daylighting controls should automatically dim lighting fixtures near windows to maintain a constant lighting level of 40 fc (typical for warehouse/manufacturing spaces).

There are numerous lighting control companies that occupancy and daylighting control solutions such as Lutron, Lithonia, Leviton, etc. This installation is best implemented at the same time as upgrading lighting fixtures to LED fixtures since many lighting companies will offer LED upgrades and lighting control upgrades as a package.

Energy and Cost Savings

Installing high performance lighting controls including occupancy and daylighting sensors would result in electrical savings of about 896 kWh per year. Total cost savings would be about $99 per year.

SRP offers a lighting rebate of $0.40 per watt controlled. It is therefore estimated that this recommendation could receive up to $250 in incentive rebates.

Based on RSMeans and manufacturing data, each occupancy and daylight sensor would cost about $250 to purchase and install. Utilizing this information, the implementation cost would be about $1,000, and the simple payback would be 7.6 years, including the incentive. It is thus recommended that this ECM be coupled with ECM AA1. Combining the two ECMs, the simple payback would be closer to 4.1 years.

Analysis Results

Economic Results Summary

Energy results for each ECM described above are shown in the table below. Overall, replacing all lighting fixtures with high efficient LEDs and installing lighting controls could reduce total energy consumption for the Maintenance Building by **39%**.

ECM	Measure Description	Electricity Usage (kWh/year)	Utility Cost ($/year)	Percent Savings	Incremental	
					Cost Savings	Percent Savings
B0	Baseline Usage	7,030	$1,052	0%	$0	0%
M1	Replace All Linear Fluorescents w/ LEDs	4,162	$736	30%	$316	30%
M2	Install High Performance Lighting Controls	3,265	$638	39%	$99	9%

Figure 3: Energy Results Summary

Economic results are summarized in the table below. Estimated implementation costs for each measure were based on manufacturing data, conversations with facility personnel, and RSMeans data.

ECM	Measure Description	First Cost	Utility Cost Savings	SRP Incentives	Simple Payback (years)
M1	Replace All Linear Fluorescents w/ LEDs	$1,100	$316	$150	3.0
M2	Install High Performance Lighting Controls	$1,000	$99	$250	7.6

Figure 4 – Economic Results Summary



T-Hangars A Through I



Energy Conservation Measures

The following section describes in detail individual energy conservation measures resulting from the site visit and analysis for interior and exterior lighting. Estimated energy savings, implementation cost, and simple payback are calculated for each conservation measure.

H1: Replace All Linear Fluorescent Fixtures with LED Fixtures

Existing Condition

The hangars utilize a mixture of linear fluorescent fixtures. Each fixture has the opportunity to be upgraded to LED fixtures that draw significantly less power while also providing same/better lighting levels.



Figure 1: Exterior T-Hangars

Recommended Action

It is recommended that each T12 fixture in the hangars be replaced with a Series SKD 8ft. 80W LED fixture or similar. Each T8 fixture should be replaced with a 12W GE LED12ET8/g/4/840 linear LED lamp or similar. Utilize new fixtures only when deemed aesthetically or electrically necessary. The recommended fixture specifications can be found in the Appendix.

LED lamps output similar lighting levels as fluorescent fixtures at a reduced power draw; thus, minimizing lighting energy usage without compromising performance. Additionally, LED lamps have a longer lifespan minimizing maintenance costs. As a bonus, LED lamps contain no mercury, helping to streamline the recycling process.

Energy and Cost Savings

Replacing all linear fluorescent fixtures in the hangars with LED fixtures would result in electrical energy savings of about **5,842 kWh per year** and cost savings of about **$643 per year**.

SRP offers a lighting rebate of $300 per kW of reduced installed demand for qualified interior LEDs. It is estimated that this recommendation could receive up to **$900** in incentive rebates.

It is assumed that each fixture would take about 30 minutes to replace the lamps at a labor rate of $25 per hour (which assumes internal staff). Utilizing this information and cost data for the recommended lamps, the implementation cost would be about **$6,000**, and the simple payback would be **7.9 years,** including the incentive.

H2: Replace All Exterior Lighting with LED Fixtures

Existing Condition

Based on the site visit, the hangars utilize 60-100W incandescent and halide exterior fixtures that are controlled by a photocell. Each exterior fixture has the opportunity to be upgraded to LED fixtures that draw significantly less power while also providing the same/better lighting levels.



Figure 2: Exterior Halide Fixture

Recommended Action

It is recommended that each exterior fixture be replaced with a 50W LED Flat Corn Light or similar. It is important that the LED lamp is checked for ballast compatibility. Utilize new fixtures only when deemed aesthetically or electrically necessary. The recommended fixture specifications can be found in the Appendix.

LED lamps output similar lighting levels as fluorescent fixtures at a reduced power draw; thus, minimizing lighting energy usage without compromising performance. Additionally, LED lamps have a longer lifespan minimizing maintenance costs. As a bonus, LED lamps contain no mercury, helping to streamline the recycling process.

Energy and Cost Savings

Replacing all exterior fixtures serving the hangars with LED fixtures would result in electrical energy savings of about **2,652 kWh per year** and cost savings of about **$292 per year**.

SRP offers an exterior lighting rebate of $200 per kW of reduced installed demand for qualified LEDs. It is estimated that this recommendation could receive up to **$400** in incentive rebates.

It is assumed that each fixture would take about 30 minutes to replace the lamps at a labor rate of $25 per hour (which assumes internal staff). Utilizing this information and cost data for the recommended lamps, the implementation cost would be about **$2,300**, and the simple payback would be **6.5 years,** including the incentive.

Analysis Results

Economic Results Summary

Energy results for each ECM described above are shown in the table below. Overall, replacing all lighting fixtures with high efficient LEDs could reduce total energy consumption for the Hangars by 32%.

ECM	Measure Description	Electricity Usage (kWh/year)	Utility Cost ($/year)	Percent Savings	Incremental	
					Cost Savings	Percent Savings
B0	Baseline Usage	27,596	$2,926	0%	$0	0%
H1	Replace All Linear Fluorescents w/ LEDs	21,753	$2,283	22%	$643	22%
H2	Replace All Exterior Lighting w/ LEDs	19,101	$1,991	32%	$292	10%

Figure 3: Energy Results Summary

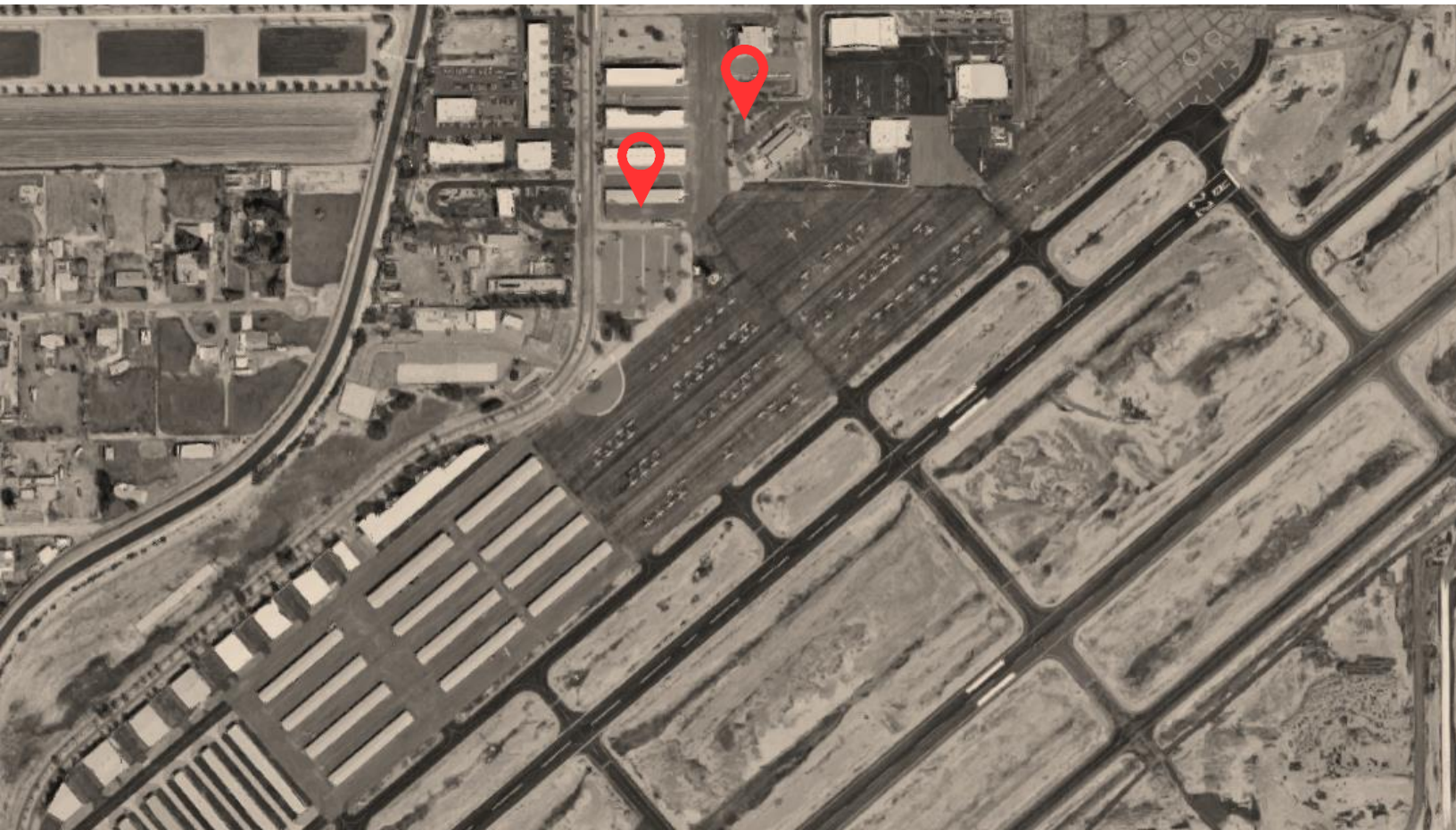
Economic results are summarized in the table below. Estimated implementation costs for each measure were based on manufacturing data, conversations with facility personnel, and RSMeans data.

ECM	Measure Description	First Cost	Utility Cost Savings	SRP Incentives	Simple Payback (years)
H1	Replace All Linear Fluorescents w/ LEDs	$6,000	$643	$900	7.9
H2	Replace All Exterior Lighting w/ LEDs	$2,300	$292	$400	6.5

Figure 4 – Economic Results Summary



Parking Lot and Canopy Lighting



Energy Conservation Measures

The following section describes in detail individual energy conservation measures resulting from the site visit and analysis. Estimated energy savings, implementation cost, and simple payback are calculated for each conservation measure.

E1: Replace All 100W HPS Exterior Pole Fixtures with 50W LED Fixtures

Existing Condition

The parking lot for the airport administration building utilizes 12, 100W HPS exterior pole lights. Additionally, it is expected that all streetlights utilize inefficient halogen or HPS fixtures. The fixtures are controlled by photocells to turn on at dusk and turn off at dawn. The 100W pole lamps draw a significant amount of power, and there is opportunity to replace the current fixtures with 50W LED fixtures.



Figure 1: Exterior HPS Fixtures in Parking Lot

Recommended Action

It is recommended that all exterior pole fixtures be replaced with a 50W LED fixture or similar. It is assumed that the existing pole structure is in good shape and the LED fixture could be fastened to the existing pole.

LED lamps output similar lighting levels as CFLs at a reduced power draw; thus, minimizing lighting energy usage without compromising performance. Additionally, LED lamps have a longer lifespan minimizing maintenance costs. As a bonus, LED lamps contain no mercury, helping to streamline the recycling process.

Energy and Cost Savings

Replacing the exterior pole fixtures with high efficiency LED fixtures would result in electricity savings of about 20,189 kWh per year and cost savings of about $2,019 per year.

SRP offers a lighting rebate of $200 per kW of reduced installed demand for qualified exterior LEDs. It is estimated that this recommendation could receive up to $1,000 in incentive rebates.

It is assumed that each fixture would take about one hour to replace the lamps at a labor rate of $125 per hour. Utilizing this information and cost data for the recommended lamps, the implementation cost would be about $48,500 and the simple payback would be over 10 years, including the incentive.

E2: Replace Incandescent Lamps with LED in Canopy Parking Area

Existing Condition

The canopy parking area currently utilizes about eight incandescent lamps to illuminate the area overnight. There is opportunity to replace these lamps with low wattage LED lamps.



Figure 2: Existing Canopy Lighting Fixtures

Recommended Action

Replace all 60W incandescent lamps with LED 9W lamp. It is important that the LED lamp is checked for ballast compatibility. Utilize new fixtures only when deemed aesthetically or electrically necessary. The recommended fixture specifications can be found in the Appendix.

LED lamps output similar lighting levels as CFLs at a reduced power draw; thus, minimizing lighting energy usage without compromising performance. Additionally, LED lamps have a longer lifespan minimizing maintenance and replacement costs. As a bonus, LED lamps contain no mercury, helping to streamline its recycling process.

Energy and Cost Savings

Replacing all fluorescent and incandescent lamps with LED lamps would result in electrical savings of about 1,647 kWh per year. Total cost savings would be about $165 per year.

SRP offers a lighting rebate of $200 per kW of reduced installed demand for qualified exterior LEDs. It is estimated that this recommendation could receive up to $100 in incentive rebates.

It is assumed that each fixture would take about 30 minutes to replace the lamps at a labor rate of $25 per hour. Utilizing this information and cost data for the recommended lamps, the implementation cost would be about $240 and the simple payback would be 0.8 years, including the incentive.

Analysis Results

Economic Results Summary

Energy results for each ECM described above are shown in the table below. Overall, replacing all lighting fixtures with high efficient LEDs could reduce total energy consumption for exterior lighting by 48%.

ECM	Measure Description	Electricity Usage (kWh/year)	Utility Cost ($/year)	Percent Savings	Incremental	
					Cost Savings	Percent Savings
B0	Baseline Usage	45,200	$4,632	0%	$0	0%
E1	Replace Exterior Street and Parking Lot Pole Lights w/ LEDs	25,011	$2,613	44%	$2,019	44%
E2	Replace Canopy Incandescents with LED Lamps	23,364	$2,448	47%	$165	4%

Figure 3: Energy Results Summary

Economic results are summarized in the table below. Estimated implementation costs for each measure were based on manufacturing data, conversations with facility personnel, and RSMeans data.

ECM	Measure Description	First Cost	Utility Cost Savings	SRP Incentives	Simple Payback (years)
E1	Replace Exterior Street and Parking Lot Pole Lights w/ LEDs	$48,500	$2,019	$1,000	23.5
E2	Replace Canopy Incandescents with LED Lamps	$240	$165	$100	0.8

Figure 4 – Economic Results Summary



Runway and Taxiway Lights



Energy Conservation Measures

The following section describes in detail individual energy conservation measures resulting from the site visit and analysis for the runway lighting. Estimated energy savings, implementation cost, and simple payback are calculated for each conservation measure.

L1: Consider Replace Runway Fixtures with LED Fixtures

Existing Condition

The runway and taxiways currently utilize 30W halogen lamp to illuminate the paths. There is opportunity to replace the 30W halogen fixtures with LED fixtures that draw significantly less power while also provide the same/better lighting levels.

Recommended Action

It is recommended that the 30W halogen fixtures be replaced with the Navigate Series 861-L 20W LED fixtures, or similar. Based on FAA regulations, the whole fixture would need to be replaced, not just the lamp. Additionally, staff personnel should consider if the voltage between the new LED fixtures and old halogen fixtures would change. If so, it is possible the transformers would need to be replaced as well.

Energy and Cost Savings

Replacing the incandescent runway fixtures with LED fixtures would result in electricity savings of about 40,490 kWh per year and cost savings of about $4,420 per year.

SRP offers custom rebates of $0.10 per kWh. This recommendation could qualify for $4,000 in rebates.

Based on previous projects and manufacturing data, the expected cost for each runway fixture would be about $200. It is expected that there are over 500 fixtures installed. If so, the total implementation cost would be about $100,000. The simple payback would be over 10 years.

Analysis Results

Economic Results Summary

Energy results for each of the ECMs described above are shown in the table below. Overall, installing LED lighting for the landing lights could reduce costs by about 15%

ECM	Measure Description	Electricity Usage (kWh/year)	Utility Cost ($/year)	Percent Savings	Incremental	
					Cost Savings	Percent Savings
B0	Baseline Usage	264,960	$28,622	0%	$0	0%
L1	Replace Runway Lights with LED Fixtures	224,040	$24,202	15%	$4,420	15%

Figure 1: Energy Results Summary

Economic results are summarized in the table below. Estimated implementation costs for each measure were based on manufacturing data, conversations with facility personnel, and RSMeans data. Overall, replacing landing lights is not economically favorable and should only be considered when fixtures have to be replaced.

ECM	Measure Description	First Cost	Utility Cost Savings	SRP Incentives	Simple Payback (years)
L1	Replace Runway Lights with LED Fixtures	$100,000	$4,420	$4,000	21.7

Figure 2 – Economic Results Summary

Solar PV Potential



Background

The climate at Chandler Municipal Airport provides an ideal location for solar energy production. The project team has indicated the area highlighted in the image below as a potential location for a solar PV system. Based on the site visit, the following items need to be confirmed to determine whether the site could house a solar PV system:

- Federal Aviation Administration (FAA) regulations for glare and other flight impact issues.
- No underground piping or sewer systems that would require access
- Proper spacing between solar PV system and existing structures/roads/construction.



Figure 1: Potential Solar PV Location

Financial Cost Considerations

From a utility cost standpoint, SRP only offers about a $0.02-$0.03 per kWh credit for excess generation on an hourly basis. This means that if the PV system generates more energy than the property/building consumes, the project will only be credited $0.02-$0.03 per kWh instead to the retail rate of about $0.09 per kWh. Therefore, it is important to consider the installation of batteries for this project to store excess energy generation so that it can be used on site. SRP currently does not offer battery storage incentives to commercial customers, only to residential customers.

Additionally, in similar circumstances, other businesses have elected to form a power-purchase agreement (PPA) with a third-party developer. This would theoretically enable the airport to lease the land to a developer (solar services provider), who would build, own, and maintain the solar equipment. The solar services provider could then sell the produced energy back to the airport at a set rate. **The advantage of this approach is that the solar services provider could take advantage of any tax credits not available to the City of Chandler, thus lowering the net cost of the project**, while potentially avoiding or mitigating some of the barriers mentioned below.

- Taxpayer/public approval of funding
- Utility connectivity issues and/or production arrangements
- Other airport operational constraints

Potential Solar PV Installations and Financial Costs

There are many potential options for installing solar PV at the Chandler Municipal Airport. The following sections summarize the potential solar PV installations and financial costs with the following considerations:

1. PV systems serving specific buildings
2. PV system to serve all buildings in scope
3. Inclusion of Battery Storage

All options outlined below assume that airport will enter into a power purchase agreement (PPA) with a third party developer and will not own their own system. This allows the project to take advantage of the 26% federal tax credit.

PV System to Offset Energy Usage of All Buildings

Based on the potential location for a solar PV installation, there is sufficient area to generate 100% of the airport's energy needs, plus much more, potentially. However, a solar PV system can only be attached to one meter. Given that the airport has 10+ meters, coordination with SRP would be required to install a master meter and/or consolidate the multiple meters on site.

From the utility analysis, the municipal airport consumes about 534,943 kWh per year of electrical energy. A fixed tilt, ground mount PV system would produce approximately 1,650 kWh/kW of installed capacity per year. Therefore, to offset the total energy consumption for the municipal airport, a 325 kW solar PV array would need to be installed. The following map highlights the potential location and actual size of the 325 kW ground mount solar PV array.



Figure 2: Potential Location and Size for 325 kW Solar PV Array

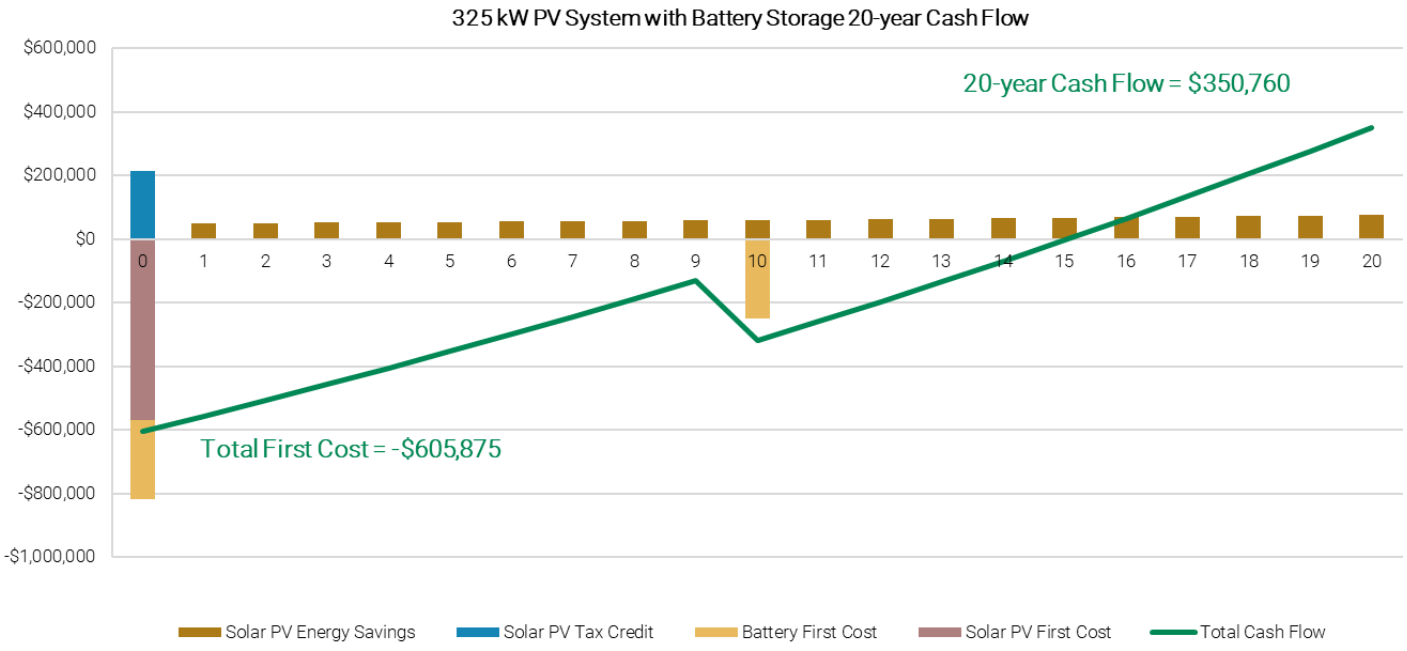
As mentioned previously, the buyback rate for excess energy generation is only a third of the retail rate, and thus, the potential for a battery storage system should be evaluated. The following table shows the financial inputs for the 325 kW ground mount solar PV system with and without a battery storage system. It is estimated that the cost of batteries is roughly $500 per kWh in addition to the cost of the PV system itself.

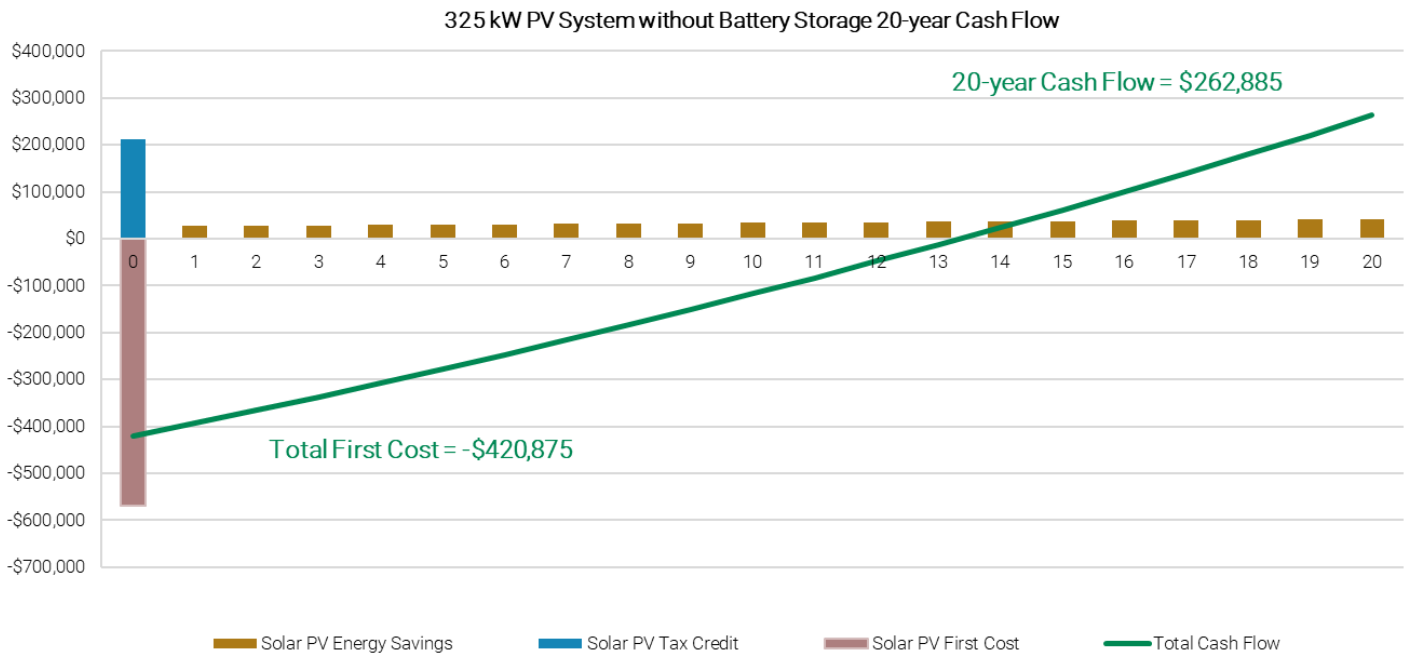
Solar PV Cost Inputs			
	w/ Battery	w/out Battery	
Solar PV First Cost	$1.75	$1.75	/Watt
Battery Storage First Cost	$500	N/A	/kWh
Federal Tax Incentive	26%	26%	-
Energy Escalation Rate	2.8%	2.8%	-
Solar PV Equipment Lifetime	20	10	years
Battery Equipment Lifetime	10	N/A	years
Solar Utility Rate	$0.09	$0.09	$/kWh
Buyback Rate	N/A	$0.03	$/kWh

The following table summarizes the financial results for both system options. As noted, both options result in a simple payback of over 13 years. The financial results are slightly more favorable to a solar PV system without batteries; however, the battery system results in a greater cash flow after 20 years.

Financial Results			
	w/ Battery	w/out Battery	
20-year NPV	$21,459	$30,319	-
Straight Line Payback	15.06	13.33	years
Year-1 ROI	8.0%	6.5%	-
IRR	4.4%	4.7%	-

The following graphs show the 20 year cash flow for the solar PV system with and without battery storage incorporating first cost, federal tax credit, solar depreciation, and cost savings.





PV System to Offset Administration Building Energy Use

If all ECMs for the administration building were to be implemented, the airport administration building would consume about **28,486 kWh per year** of electrical energy. Therefore, to offset the total energy consumption for the building, an **18 kW** solar PV array would need to be installed. At this size, it is possible to install a carport solar PV installation on the adjacent parking lot. The following map highlights the potential location and actual size of the 18 kW carport solar PV array.

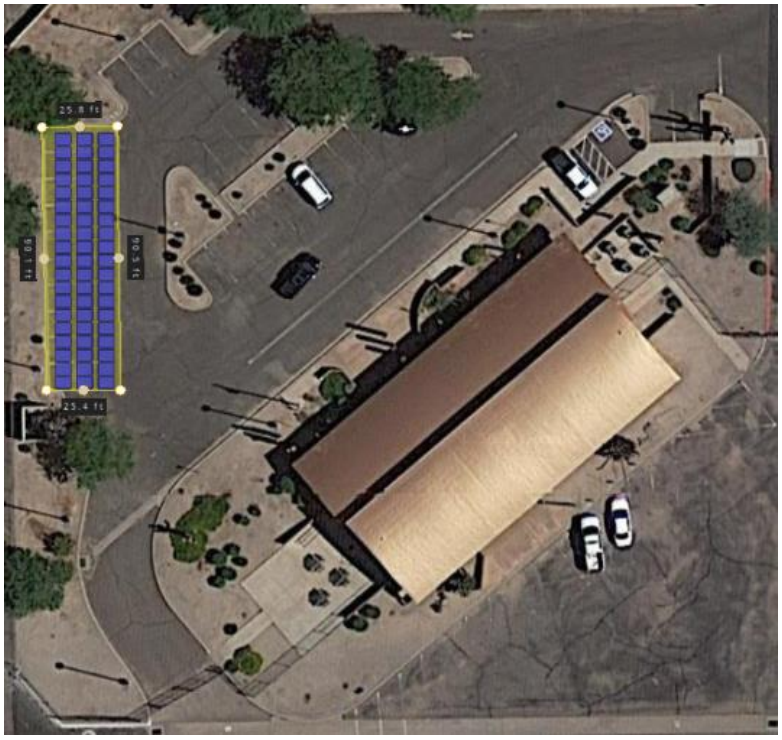


Figure 3: Potential Location and Size of 18 kW PV System

The following table shows the financial inputs for the 18 kW carport solar PV system with and without a battery storage system.

Solar PV Cost Inputs			
	w/ Battery	w/out Battery	
Solar PV First Cost	$3.00	$3.00	/Watt
Battery Storage First Cost	$500	N/A	/kWh
Federal Tax Incentive	26%	26%	-
Energy Escalation Rate	2.8%	2.8%	-
Solar PV Equipment Lifetime	20	10	years
Battery Equipment Lifetime	10	N/A	years
Solar Utility Rate	$0.09	$0.09	$/kWh
Buyback Rate	N/A	$0.03	$/kWh

The following table summarizes the financial results for both system options. As noticed, both options result in a simple payback of about **18 years**. The financial results are slightly more favorable to a solar PV system without batteries; however, the battery system results in a greater cash flow after 20 years.

Financial Results			
	w/ Battery	w/out Battery	
20-year NPV	-$10,435	-$8,311	-
Straight Line Payback	18.17	18.01	years
Year-1 ROI	6.0%	4.5%	-
IRR	1.4%	1.2%	-
20-year Cash Flow	$7,429	$4,570	-

PV System to Offset Air Traffic Control Tower Energy Use

If all ECMs for the air traffic control tower (ATCT) were to be implemented, the ATCT would consume about **57,168 kWh per year** of electrical energy. Therefore, to offset the total energy consumption for the building, a **35 kW** solar PV array would need to be installed. The following map highlights the potential location and actual size of the 35 kW solar PV array.



Figure 4: Potential Location and Size of 35 kW PV System

The following table shows the financial inputs for the 35 kW carport solar PV system with and without a battery storage system.

Solar PV Cost Inputs			
	w/ Battery	w/out Battery	
Solar PV First Cost	$2.00	$2.00	/Watt
Battery Storage First Cost	$500	N/A	/kWh
Federal Tax Incentive	26%	26%	-
Energy Escalation Rate	2.8%	2.8%	-
Solar PV Equipment Lifetime	20	20	years
Battery Equipment Lifetime	10	N/A	years
Solar Utility Rate	$0.09	$0.09	$/kWh
Buyback Rate	N/A	$0.03	$/kWh

The following table summarizes the financial results for both system options. As noticed, the system without battery storage results in a 15 year payback while the battery storage option is around a 19 year payback. This is mainly due to having to size the battery storage system larger to fully cover the large overnight loads from the IT rooms.

Financial Results			
	w/ Battery	w/out Battery	
20-year NPV	-$24,091	-$3,210	-
Straight Line Payback	19.15	14.95	years
Year-1 ROI	6.3%	5.7%	-
IRR	0.7%	3.3%	-
20-year Cash Flow	$6,805	$21,836	-

Appendix 1:
Equipment Specifications

GE
Lighting

Refit Solutions from GE



Application illustration only, subject lamps not used in photo.

Integrated LED Tubes - 2, 3 and 4 foot - Improved Lumens

Convert your existing linear fluorescent fixture to LED lighting without needing a comprehensive reinstall. LED tubes are ideal for those seeking high energy savings with minimal installation time. Each LED tube is operated by an internal GE Lightech™ driver. GE integrated LED tubes run on electronic T8 instant-start or programmed start ballasts.

FEATURES

- 2', 3' & 4' tubes
- 950 – 3,050 lumens
- >100 total system lumens per watt (LPW)
- Available in 3000K, 3500K, 4000K, and 5000K color temperatures
- 50,000-hour rated life
- Dimmable
- DLC listed (2ft. and 4ft.)
- UL and cUL listed
  – in compliance with UL 1598 certification
- Open or Enclosed Fixtures
- 5 year limited warranty

BENEFITS

- Fast and easy LED upgrade
- Low energy LFL replacement
- 66% longer life than LFL (50,000 vs. 30,000 hours)
- Better quality of light
  - no UV
  - instant on
- Shatter resistant
  - prevents breakage and downtime
- Easy disposal, non-hazardous waste

To learn more about saving money and energy, go to: **gelighting.com/ThinkLED**

When you Think LED lighting, Think GE.

ecomagination℠

imagination at work

Information provided is subject to change without notice. Please verify all details with GE. All values are design or typical values when measured under laboratory conditions, and GE makes no warranty or guarantee, expressed or implied, that such performance will be obtained under end-use conditions.

Product Specifications

Integrated Refit LED Tubes

GE DLC Listed Code	Description	Bulb Shape	Base	Low BF Watts	Normal BF Watts	High BF Watts	Case Qty	Length (In)	Low BF Intital Lumens	Normal BF Initial Lumens	High BF Initial Lumens	Color Temp (°K)	CRI	Rated Life (L70)	DLC Listed
2ft LED Tube															
31557	LED9ET8/2/830	T8	Med Bi-Pin(G13)	8	9	13	25	24"	950	1100	1600	3000	80	50,000	Yes
26635	LED9ET8/2/835	T8	Med Bi-Pin(G13)	8	9	13	25	24"	950	1100	1600	3500	80	50,000	Yes
26648	LED9ET8/2/840	T8	Med Bi-Pin (G13)	8	9	13	25	24"	950	1100	1600	4000	80	50,000	Yes
26676	LED9ET8/2/850	T8	Med Bi-Pin(G13)	8	9	13	25	24"	950	1100	1600	5000	80	50,000	Yes
3ft LED Tube															
31554	LED12ET8/3/830	T8	Med Bi-Pin(G13)	10	12	16	25	36"	1150	1350	1800	3000	80	50,000	-
26544	LED12ET8/3/835	T8	Med Bi-Pin(G13)	10	12	16	25	36"	1200	1400	1900	3500	80	50,000	-
26625	LED12ET8/3/840	T8	Med Bi-Pin (G13)	10	12	16	25	36"	1200	1400	1900	4000	80	50,000	-
26627	LED12ET8/3/850	T8	Med Bi-Pin(G13)	10	12	16	25	36"	1250	1500	2000	5000	80	50,000	-
4ft LED Tube															
61218	LED12ET8/4/830	T8	Med Bi-Pin(G13)	10	12	15	25	48"	1350	1550	2050	3000	80	50,000	Yes
61223	LED12ET8/4/835	T8	Med Bi-Pin(G13)	10	12	15	25	48"	1400	1600	2150	3500	80	50,000	Yes
61271	LED12ET8/4/840	T8	Med Bi-Pin(G13)	10	12	15	25	48"	1400	1600	2150	4000	80	50,000	Yes
61327	LED12ET8/4/850	T8	Med Bi-Pin(G13)	10	12	15	25	48"	1500	1700	2250	5000	80	50,000	Yes
61329	LED12ET8/4/865	T8	Med Bi-Pin(G13)	10	12	15	25	48"	1400	1600	2150	6500	80	50,000	Yes
62339	LED15ET8/4/830	T8	Med Bi-Pin(G13)	13	15	21	25	48"	1650	1850	2450	3000	80	50,000	Yes
62401	LED15ET8/4/835	T8	Med Bi-Pin(G13)	13	15	21	25	48"	1750	1950	2600	3500	80	50,000	Yes
62402	LED15ET8/4/840	T8	Med Bi-Pin(G13)	13	15	21	25	48"	1750	1950	2600	4000	80	50,000	Yes
62409	LED15ET8/4/850	T8	Med Bi-Pin(G13)	13	15	21	25	48"	1800	2050	2700	5000	80	50,000	Yes
62410	LED15ET8/4/865	T8	Med Bi-Pin(G13)	13	15	21	25	48"	1750	1950	2600	6500	80	50,000	Yes
31550	LED18ET8/4/830	T8	Med Bi-Pin(G13)	15	18	23	25	48"	1950	2150	2850	3000	80	50,000	Yes
93133	LED18ET8/4/835	T8	Med Bi-Pin (G13)	15	18	23	25	48"	2050	2250	3000	3500	80	50,000	Yes
93135	LED18ET8/4/840	T8	Med Bi-Pin(G13)	15	18	23	25	48"	2050	2250	3000	4000	80	50,000	Yes
93140	LED18ET8/4/850	T8	Med Bi-Pin(G13)	15	18	23	25	48"	2100	2350	3100	5000	80	50,000	Yes

System Watts - Refit LED Tubes

Ballast Factor	LED18ET8/4/xxx Rated Lumens	LED Approx. System Watts per tube	F32T8 Approx. System Watts per lamp
L (232MAX-G-L)	2050	17	25
N (232MAX-G-N)	2250	20	28
H (232MAX-G-N	3000	27	37

Lumen and wattage numbers above are approximations that can be used for estimates only.
LED System Watts - Add 10%-12% to LED Tube wattage for driver losses.

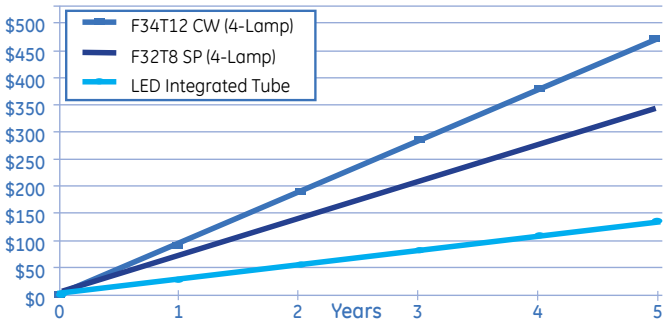
Savings Breakdown

Save 66% compared to standard T8 (4-lamp) light fixtures over a five-year period.

Provides 4400 lumens at 36W vs. 6600 lumens at 148W in a 4 lamp T12 system.

Check ballast compatibility at **www.gelighting.com/LEDTUBES-ballast-compatibility**

Cumulative Energy Costs - Cumulative Costs



Savings calculations are based on energy costs using $0.11 per kWh and 16 hours of daily operation.

ecomagination℠

Product is compliant with material restriction requirements of RoHS

www.gelighting.com

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LEDL029 (Rev 5/27/16)

Series SKD

2"W Low Profile LED Surface Mount

FEATURES & SPECIFICATIONS

INTENDED USE

Full body micro silhouette makes a bold statement with a minimal design in brushed nickel powder coated finish (consult factory for other finishes). Scaled to the LED module the matte white diffuser surrounds the LEDs for soft lighting. Brushed nickel fixture can be surface mounted on wall or ceiling or pendant mounted with specially engineering cable mounting kit.



SIZE L x W x D in inches

- 22.5" or 46" or 92"L x 2"W x 2.6"D
- 22.5" or 46" or 92"L x 3"W x 3"D

MATERIALS & FEATURES

- Fully assembled housing is formed and welded, 22 gauge steel, chemically treated to resist corrosion and enhance paint adhesion
- Available in brushed nickel. Consult for other finishes
- Available with smooth frosted lens
- Clean body - No knock-outs on sides or ends
- Knock-outs on back accept standard electrical fittings (by others) Consult factory for other locations
- Dimming ballast options available (consult factory for availability and system compatibility)

MOUNTING

Surface mount or Pendant mount.
Horizontal or Vertical.

TYPICAL OPTIONS AND ACCESSORIES

Whips, hanging kits, and cord sets. See options page at the end of the T02Strip section, or contact factory for more details.

ACCESSORIES

SKD-HC301WH - 5'cable kit w/white canopy*
SKD-HC301BN - - 5'cable kit w/brushed nickel*
SKD-HC501BN - 4' Cable Mounting Kit*

*Includes canopy for cable only and a canopy for cable & power chord.

ORDERING INFORMATION

Example: **SKDFR24LE12W1200LDMV40KWH**

2FT - STANDARD

SKD | FR | 24L | E12W1200L | DMV | 40K | WH

Series
SKD Low Profile LED Surface Mount 2" Width Body

Width
24L 22.5"

Wattage and Lumen
E12W1200L 12 System Watts, 1200 Delivered Lumens

Lens
FR Frosted Smooth

Driver
DMV 0-10V Dimming *Field installed-Dimming Wire
DMVFID 0-10V Dimming *Factory installed-Dimming Wire

Color Temperture
30K 3000K
35K 3500K
40K 4000K
50K 5000K

Finish
WH White
BN Brushed Nickel
BK Black
BZ Bronze

Options
WP 6 ft. 3 wire 18 gauge whip
CS 8ft. 3/18 3 prong (5-15P) cord & plug

2FT - HIGH OUTPUT

SKD | FR | 24L | H18W1750L | DMV | 40K | WH

Series
SKD Low Profile LED Surface Mount 2" Width Body

Width
24L 24"

Wattage and Lumen
H18W1750L 18 System Watts, 1750 Delivered Lumens

Lens
FR Frosted Smooth

Driver
DMV 0-10V Dimming *Field installed-Dimming Wire
DMVFID 0-10V Dimming *Factory installed-Dimming Wire

Color Temperture
30K 3000K
35K 3500K
40K 4000K
50K 5000K

Finish
WH White
BN Brushed Nickel
BK Black
BZ Bronze

Options
WP 6 ft. 3 wire 18 gauge whip
CS 8ft. 3/18 3 prong (5-15P) cord & plug

SKD-HC301WH - 5'cable kit w/white canopy*
SKD-HC301BN - - 5'cable kit w/brushed nickel*
SKD-HC501BN - 4' Cable Mounting Kit*

*Includes canopy for cable only and a canopy for cable & power chord.

Intertek

Series SKD

3"W Low Profile LED Surface Mount

4FT - STANDARD

Example: **SKDWBMW48LE48W4800LDMV40KBN**

SKDWB | MW | 48L | E48W4800L | DMV | 40K | BN

Series
SKDWB Low Profile LED Surface Mount 3" Width Body

Size
48L 46"

Lens
MW White Lens
FR Frosted Lens

Wattage and Lumen
E32W3450L 32 System Watts, 3450 Delivered Lumens
E48W4800L 48 System Watts, 4800 Delivered Lumens
E57W5400L 57 System Watts, 5400 Delivered Lumens

Driver
DMV 0-10V Dimming *Field installed-Dimming Wire
DMVFID 0-10V Dimming *Factory installed-Dimming Wire

Color Temperture
30K 3000K
35K 3500K
40K 4000K
50K 5000K

Finish
WH White
BN Brushed Nickel
BK Black
BZ Bronze

Options
WP 6 ft. 3 wire 18 gauge whip
CS 8ft. 3/18 3 prong (5-15P) cord & plug

4FT - HIGH OUTPUT

SKDWB | MW | 48L | R72W7000L | DMV | 40K | BN

Series
SKDWB Low Profile LED Surface Mount 3" Width Body

Size
48L 46"

Lens
MW White Lens
FR Frosted Lens

Wattage and Lumen
R72W7000L 72 System Watts, 7000 Delivered Lumens

Driver
DMV 0-10V Dimming *Field installed-Dimming Wire
DMVFID 0-10V Dimming *Factory installed-Dimming Wire

Color Temperture
30K 3000K
35K 3500K
40K 4000K
50K 5000K

Finish
WH White
BN Brushed Nickel
BK Black
BZ Bronze

Options
WP 6 ft. 3 wire 18 gauge whip
CS 8ft. 3/18 3 prong (5-15P) cord & plug

8FT - STANDARD

SKDWB | MW | 96L | E114W10800L | DMV | 40K | BN

Series
SKDWB Low Profile LED Surface Mount 3" Width Body

Size
96L 92"

Lens
MW White Lens
FR Frosted Lens

Wattage and Lumen
H80W8000L 80 System Watts, 8000 Delivered Lumens
E114W10800L 114 System Watts, 10800 Delivered Lumens

Driver
DMV 0-10V Dimming *Field installed-Dimming Wire
DMVFID 0-10V Dimming *Factory installed-Dimming Wire

Color Temperture
30K 3000K
35K 3500K
40K 4000K
50K 5000K

Finish
WH White
BN Brushed Nickel
BK Black
BZ Bronze

Options
WP 6 ft. 3 wire 18 gauge whip
CS 8ft. 3/18 3 prong (5-15P) cord & plug

8FT - HIGH OUTPUT

SKDWB | MW | 96L | R144W14000L | DMV | 40K | BN

Series
SKDWB Low Profile LED Surface Mount 3" Width Body

Size
96L 92"

Lens
MW White Lens
FR Frosted Lens

Wattage and Lumen
R144W14000L 144 System Watts, 14000 Delivered Lumens

Driver
DMV 0-10V Dimming *Field installed-Dimming Wire
DMVFID 0-10V Dimming *Factory installed-Dimming Wire

Color Temperture
30K 3000K
35K 3500K
40K 4000K
50K 5000K

Finish
WH White
BN Brushed Nickel
BK Black
BZ Bronze

Options
WP 6 ft. 3 wire 18 gauge whip
CS 8ft. 3/18 3 prong (5-15P) cord & plug

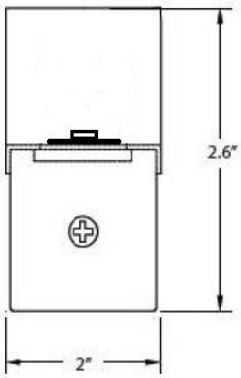
C ETL US LISTED Intertek

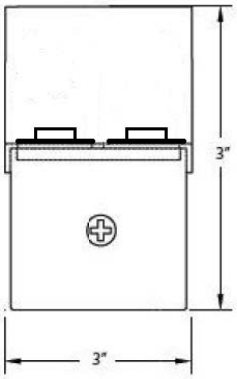
Series SKD

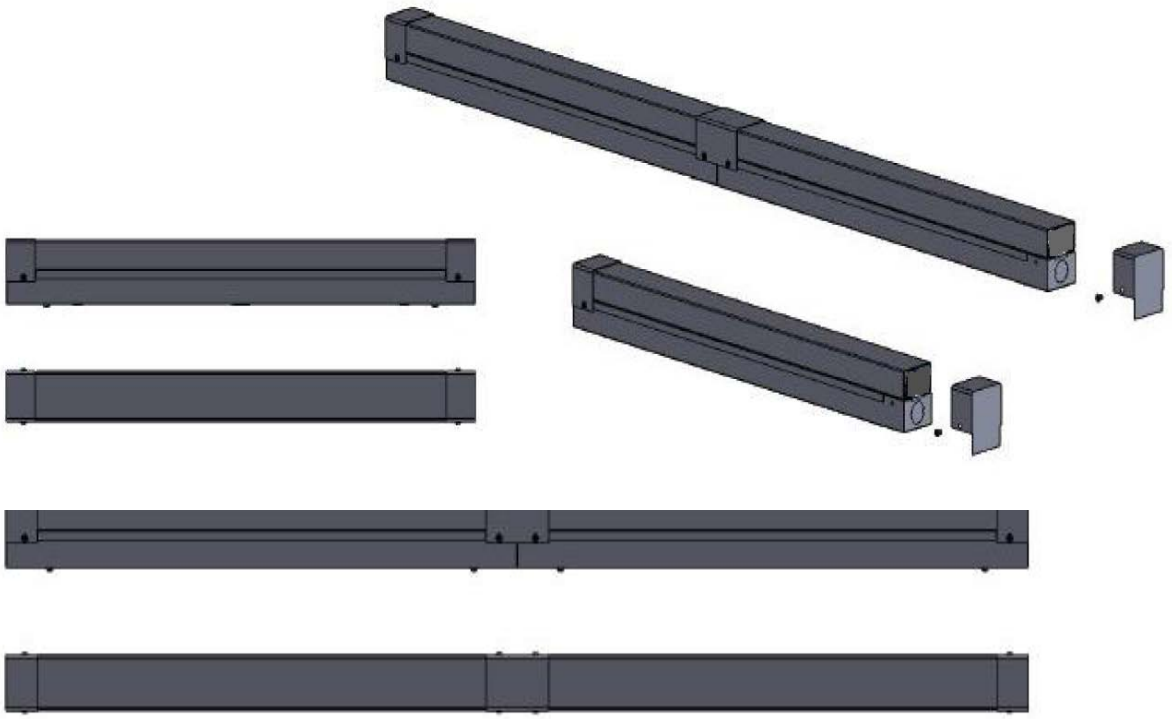
Low Profile LED Surface Mount

DIMENSIONS

All dimensions are inches.
Specifications subject to change without notice.







Intertek

9W LED Lamp Replacement

Model # B7A19A60WUL38 Store SKU #1002861726



Best Seller

EcoSmart >

60-Watt Equivalent A19 Non-Dimmable LED Light Bulb Daylight (8-Pack)

★★★★½ (3029) Write a Review Questions & Answers (22)

- Daylight color temperature provides stimulating, cool light
- Ideal for indoor/covered outdoor use and enclosed fixtures
- $62 estimated lifetime energy savings per bulb

Includes 8 bulbs ($1.35 /bulb)

$10.78

Save up to $100* on your qualifying purchase.
Apply for a Home Depot Consumer Card

Number of Bulbs Included: **8**

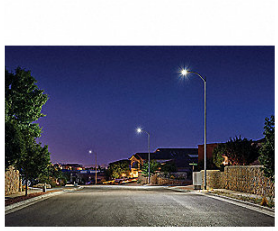
1 PACK | 4 PACK | 8 PACK

Exterior LED Parking and Street Light Fixture

ACUITY AMERICAN ELECTRIC

LED Parking Lot Light Fixture, 4000K Color Temperature, 120 to 277VAC, Arm Mount Type, 6101 lm

Item # **53XH17** Mfr. Model # **ATBS G MVOLT R3** Catalog Page # **455** UNSPSC # **39111605**



Clearance Price

$364.50 / each

~~Web Price $405.00~~

1 Add to Cart

+ Add to List |

Shipping Pickup

Expected to arrive **Mon. Jun 15.**

Ship To 80201 (Change)

Shipping Weight **14.5 lbs.**

Country of Origin **Mexico** | *Country of Origin is subject to change.*

Note: Product availability is real-time updated and adjusted continuously. The product will be reserved for you when you complete your order. More

Technical Specs

Item	Parking Lot Light Fixture	Lumens per Watt	122
Mount Type	Arm	Socket Type	None
Lumens	6101 lm	Standards	CSA
Fixture Wattage	50W	Warranty	5 yr.
Light Distribution Shape	Type III	Fixture Lumens Range	6001 lm and Greater
LED Replacement For	100 to 200W HPS/MH	Wattage Range	41 to 100W
Fixture Sensor Type	Photocell Receptacle	Fixture Rated Life	100,000 hr.
Light Technology	LED	Fixture Height	4-1/2"
Color Temperature	4000K	Fixture Length	23-3/4"
Color Rendering Index	70	Fixture Temp. Range	-40 Degrees to 40 Degrees C
Voltage	120 to 277VAC	Fixture Width	11-1/4"
Fixture Housing Color	Gray	Green Environmental Attribute	Product Contributes To Reducing Energy Consumption
Fixture Housing Material	Die-Cast Aluminum	Green Certification or Other Recognition	DesignLights Consortium (DLC)(R) Listed
Fixture Lens Material	No Lens		

ELEDLIGHTS.COM

LED Flat Corn Lights

Applications

ELEDLIGHTS' Flat Corn Light LED Retrofit Light are an easy and economical way to convert your existing fixtures to energy-saving LED lighting technology. It can easily be installed and is rotatable to get precise angle in shoebox/parking lot lights, wall packs, canopy lights, street lights and more. This flat corn light will immediately reduce power consumption by more than 65% and outperforms other retrofit kits by a wide margin.



Features

- Direct replacement for metal halide
- E39 mogul base
- Easy installation
- Advanced heat dissipation
- Internal driver
- 180° beam angle
- 5000K cold white light
- 50,000-hour operating life
- DLC, UL certified
- 5 year warranty

Specifications

	115W	54W	27W
Light Output	13,500 lumens	6,600 lumens	3,300 lumens
Luminous Efficacy	118 lm/W	122 lm/W	122 lm/W
Power Consumption	115W	54W	27W
Average Lamp Life	50,000 hours	50,000 hours	50,000 hours
Color	Cold White: 5000K	Cold White: 5000K	Cold White: 5000K
Base Type	E39 - Mogul	E39 - Mogul	E26 - Edison
CRI	73	73	73
Reflector Beam Angle	180°	180°	180°
Dimensions	11.7" x 5.4" x 3.4"	11.7" x 5.4" x 3.4"	9.6" x 4.4" x 3.1"
Housing Material	Magnesium Alloy, Aluminum Heat Sink, and PC Cover		
Housing Color	Black and Silver	Black and Silver	Black and Silver
Number of LEDs	196	112	56
Certification	DLC, UL	DLC, UL	DLC, UL
Warranty	5 Years	5 Years	5 Years

7835 Wilkerson Ct, San Diego, CA 92111 • 858.581.0597 • 1610 Republic Road, Huntingdon Valley, PA 19006 • 215.355.7200
Email: lights@eledlights.com • www.eledlights.com

Smart Thermostats

Compare



More Options Available

Best Seller **Google** Nest Learning Thermostat 3rd Gen in Stainless Steel
Model# T3007ES
★★★★★ (10639)
$249.00
Limit 5 per order

Free delivery
31 in stock at Santa Fe
Check nearby stores

Compare



More Options Available

Google Nest Thermostat E
Model# T4000ES
★★★★★ (3490)
BULK PRICE ELIGIBLE $169.00
Buy 2 or more $159.00

Free delivery
8 in stock at Santa Fe
Check nearby stores

Compare



ecobee SmartThermostat with Voice Control
Model# EB-STATE5-01
★★★★★ (470)
$249.00

Free delivery
8 in stock at Santa Fe
Check nearby stores

Compare



ecobee 3 Lite Smart Thermostat
Model# EB-STATE3LT-02
★★★★★ (2009)
$169.00
Get up to $150 in Rebates

Delivery unavailable
2 in stock at Santa Fe
Check nearby stores

Instantaneous DHW Heaters

Model # POU 6T



EcoSmart ›

6.5 kW Point of Use Electric Tankless Water Heater

★★★☆☆ (155) Write a Review Questions & Answers (7)

- Self-modulating technology
- Versatile to mount in different ways
- Intelligently control temperature from 80 to 140-degrees F

($169.00 /unit)

$169.00

Save up to $100[*] on your qualifying purchase.
Apply for a Home Depot Consumer Card

Flow Rate @ 35 F Rise (gallons/min): **1.27 gal (US)/min**

0.68 gal (US)/min | .78 gal (US)/min | 1.07 gal (US)/min | **1.27 gal (US)/min**

Controlled Power Cords and Plug-in Devices

Compare



TP-LINK 6-Outlet Wi-Fi Smart Power Strip

Model# HS300

★★★★★ (11)

$79.99

Compare



Vivitar Smart Home Wi-Fi Power Strip

Model# HA-1007-HD-DRP

★★★☆☆ (2)

$41.19

Compare



Globe Electric Wi-Fi Smart 4 ft. Cord 4-Outlet Surge Protector 2 USB Port Power Strip, No Hub Required and Voice Activated, White

Model# 50077

View the Globe Smart Home Collection

★★★★½ (9)

$37.14

Compare



WireLogic Smart Surge Strip 216,000 Amp and 3240 Joules 10-Outlet - Black

Model# WLPOWER10

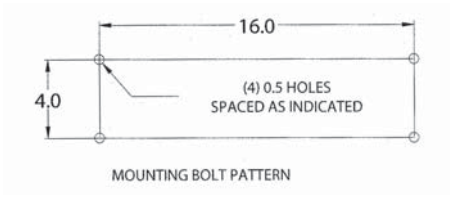
$129.99

Appendix 2:
Landing Lights Specifications

RBMI

Airport Rotating Beacon

MEDIUM INTENSITY





Compliance with Standards

FAA: L-801 AC 150/5345-12 (Current Edition)
ICAO: Annex 14, para. 5.3.3

Uses

L-801 beacons are designed primarily for night operation as identification and location markers for airports.

Features

- Patented belt-drive system eliminates the lubrication required by conventional gear-drive beacons. (U.S. Patent No. 5,339,224)
- Patented liquid-filled lamp connector eliminates the slip rings and brushes found on conventional beacons (U.S. Patent No. 5,816,678)
- Two 13,000 lumen, 150-watt pulse-start metal-halide lamps
- 12,000 hour typical lamp life (3 years)
- One clear lens and one aviation green lens
- No maintenance except lamp replacement
- All moving parts are permanently lubricated
- Impedance-protected motor eliminates burn outs
- 12 rpm rotation, 24 flashes per minute
- Lamps preset at 5° above horizontal, adjustable
- Weatherproof steel cabinet with powder-coated international orange finish
- Optional photocell and/or tell-tale relay
- Mountable on a Hali-Brite Tipdown Pole. See catalog sheet 2035 for photo and details.
- Electrical Power – The beacon operates on 120 VAC, 60 Hz or 220-240 VAC, 50/60 Hz
- Power Consumption–Class I: 395W; Class II: 795W
- Made in the USA and ETL certified by Hali-Brite, Inc., Crosby, MN

Operating Conditions

Temperature:	Class I: -22 °F to +131 °F (-30 °C to +55 °C) Class II: -67 °F to +131 °F (-55 °C to +55 °C)
Wind:	Velocities up to 100 mph (161 kph)

Ordering Code

44A4837- [ ] **1** [ ] **0**

Type
0 = Airport

Style
1 = Standard Base, Belt-Driven

Power
0 = 120 VAC, 60 Hz, without heater, Class I
1 = 220-240 VAC, 50 Hz, without heater, Class I
2 = 120 VAC, 60 Hz, with heater, Class II
3 = 220-240 VAC, 50 Hz, with heater, Class II
4 = 220-240 VAC, 60 Hz, without heater, Class I
5 = 220-240 VAC, 60 Hz, with heater, Class II

Notes
- 220-240 VAC must be single wire with neutral.
- Add tell-tale relay for monitoring (see options below).

Spare Components

Description	Part No.
Ballast Assembly 50 Hz	0200-0024
Ballast Assembly 60 Hz	0200-0023
Belt	0600-0003
Fuse, motor, 0.5 A	2300-0002
Fuse, lamp, 6.25 A	2300-0010
Lamp, 150 W pulse-start metal-halide	3400-0125
Lens, amber	2800-0025
Lens, clear	2800-0006
Lens, green	2800-0043
Lens clip	1500-0011

Optional Accessories

Description	Part No.
Tell-Tale Relay, 120 VAC	L801/802 T/T HBM 120
Tell-Tale Relay, 220/240 VAC	L801/802 T/T HBM 240
Tell-Tale Relay, 220/240 VAC, 50 Hz	L801/802 T/T 240/50
Tower Mounting Kit	4200-0000

Packaging

Cube Shipping Volume:	48 x 25 x 25 in (122 x 63.5 x 63.5 cm)
Weight:	110 lb (49.9 kg) - shipping 75 lb (34 kg) - unpackaged

ADB Airfield Solutions
Leuvensesteenweg 585
B-1930 Zaventem
Belgium

Telephone: +32 (0)2 722.17.11
www.adb-air.com

ADB Airfield Solutions, LLC
977 Gahanna Parkway
Columbus, OH 43230
USA

Telephone: +1 614.861.1304
+1 800.545.4157

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Product specifications may be subject to change, and specifications listed here are not binding. Confirm current specifications at time of order.

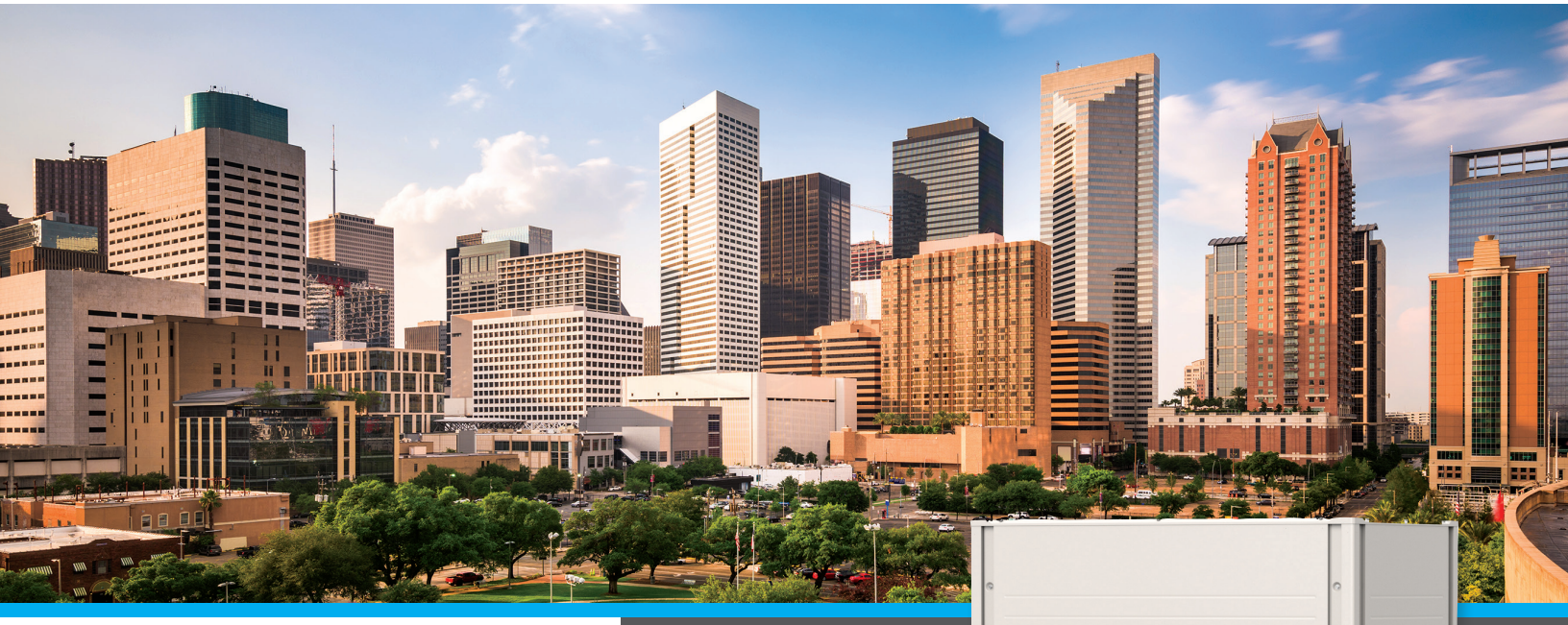
Appendix 3:
HVAC Equipment Specifications

DAIKIN
AIR INTELLIGENCE™

NEW!

VRV IV

Air-Cooled Heat Pump
RXYQ_TATJU / RXYQ_TAYDU





Commercial.
Renovation.
New construction.

Daikin's VRV IV systems integrate advanced technology to provide comfort control with high energy efficiency and reliability. VRV IV provides heating and cooling solutions for multi-family residential to large commercial applications. Daikin VRV IV is the first variable refrigerant flow (VRF) system assembled in North America.

Main features and benefits:

- Total comfort solution for heating, cooling, ventilation and controls.
- Redesigned and optimized for low total Life Cycle Cost (LCC).
- Available in large capacity single modules up to 14 tons and systems up to 34 tons allowing for a more flexible system design.
- Year-round comfort and energy efficiency delivered by combining VRV and VRT technologies.
- High energy efficiency with IEER values up to 27.3.
- Integrated inverter technology delivers high efficiency during part load conditions and provides precise individual zone control.
- Design flexibility with long piping lengths up to 3,280 ft. total, and up to 100 ft. vertical separation between indoor units.
- Corrosion resistant 1000 hr. salt-spray tested Daikin PE blue fin heat exchanger.
- Reduced commissioning time with VRV configuration software and Graphical User Interface (GUI), as compared to VRV III.
- VRV IV takes advantage of Daikin's unique zone and centralized controls that are optimized for the specific needs of North America.
- Outstanding 10-year limited parts warranty* as standard.





Additional information
Before purchasing this appliance, read important information about its estimated annual energy consumption, yearly operating cost, or energy efficiency rating that is available from your retailer.

FIND OUT MORE ABOUT DAIKIN VRV.

*Complete warranty details available from your local distributor, manufacturer's representative, www.daikincomfort.com or www.daikinac.com.

VRV IV Operations

Variable Refrigerant Temperature

Lower capacity is required to cool and heat a building during mid-season.

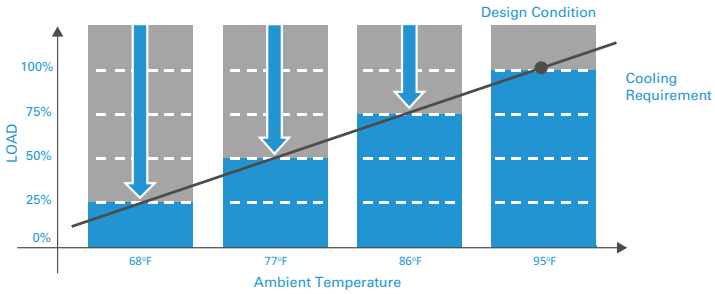
A VRV system adapts to the required changes in capacity by varying the refrigerant volume. This results in an increase in efficiency at part load operation.

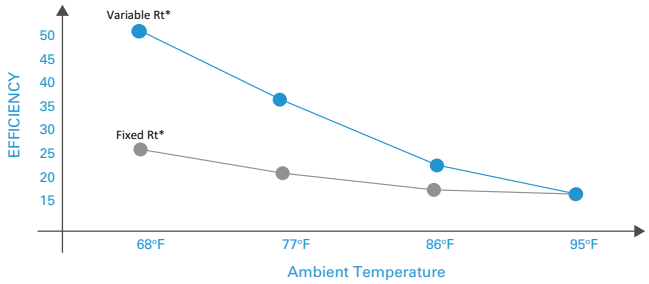
The efficiency of the VRV IV system is further increased by adjusting the refrigerant temperature depending on space load and weather conditions.

Up to 28% Improved Seasonal Cooling Efficiency vs. VRV III

VRV IV VRT Advantages

The graphs below are intended only to depict how new Daikin VRV IV efficiency is increased by using VRT.





*Data based on RXYQ96 outdoor unit only with 100% connection ratio.

Technical Data for VRV IV Heat Pump Outdoor Units

			6 Ton	8 Ton	10 Ton	12 Ton	14 Ton
Model	208-230V/3Ph/60Hz		RXYQ72TATJU	RXYQ96TATJU	RXYQ120TATJU	RXYQ144TATJU	RXYQ168TATJU
	460V/3Ph/60Hz		RXYQ72TAYDU	RXYQ96TAYDU	RXYQ120TAYDU	RXYQ144TAYDU	RXYQ168TAYDU
Performance	Rated Cooling Capacity	Btu/h	69,000	92,000	114,000	138,000	160,000
	Rated Heating Capacity	Btu/h	73,000	103,000	129,000	154,000	176,000
	Operation Range - Cooling	°F DB	10*-122	10*-122	10*-122	10*-122	10*-122
	Operation Range - Heating	°F WB	-4 - 60	-4 - 60	-4 - 60	-4 - 60	-4 - 60
	Sound Pressure	dB(A)	58	61	61	64	65
	IEER (Ducted / Non-Ducted)		20.7 / 25.9	22.5 / 27.3	22 / 25.4	22.6 / 24.8	19.8 / 22.6
	Airflow	cfm	5,544	5,827	6,286	8,228	8,228
Refrigerant Piping	Vertical Pipe Length Above	ft.	164 (295 w/outdoor setting)	164 (295 w/outdoor setting)	164 (295 w/outdoor setting)	164 (295 w/outdoor setting)	164 (295 w/outdoor setting)
	Vertical Pipe Length Below	ft.	130 (295 w/outdoor setting)	130 (295 w/outdoor setting)	130 (295 w/outdoor setting)	130 (295 w/outdoor setting)	130 (295 w/outdoor setting)
	Vertical Pipe Length Between IDU	ft.	100	100	100	100	100
	Actual Pipe Length	ft.	540	540	540	540	540
	Equivalent Pipe Length	ft.	620	620	620	620	620
	Total Pipe Length	ft.	3,280	3,280	3,280	3,280	3,280
Unit	Weight (RXYQ_TAT / RXYQ_TAY)	lbs.	435 / 451	525 / 553	528 / 556	695 / 709	
	Dimensions (H x W x D)	in.	66-11/16 x 36-11/16 x 30-3/16	66-11/16 x 48-7/8 x 30-3/16			

			16 Ton	18 Ton	20 Ton	22 Ton	24 Ton
Model	208-230V/3Ph/60Hz		RXYQ192TATJU	RXYQ216TATJU	RXYQ240TATJU	RXYQ264TATJU	RXYQ288TATJU
	460V/3Ph/60Hz		RXYQ192TAYDU	RXYQ216TAYDU	RXYQ240TAYDU	RXYQ264TAYDU	RXYQ288TAYDU
	Combination		1 x RXYQ120T 1 x RXYQ72T	1 x RXYQ120T 1 x RXYQ96T	2 x RXYQ120T	1 x RXYQ144T 1 x RXYQ120T	2 x RXYQ144T
Performance	Rated Cooling Capacity	Btu/h	184,000	206,000	228,000	250,000	274,000
	Rated Heating Capacity	Btu/h	206,000	230,000	256,000	282,000	308,000
	Operation Range - Cooling	°F DB	23-122	23-122	23-122	23-122	23-122
	Operation Range - Heating	°F WB	-4 - 60	-4 - 60	-4 - 60	-4 - 60	-4 - 60
	Sound Pressure	dB(A)	63	64	64	66	67
	IEER (Ducted/Non-Ducted)		21.2 / 22.2	21.1 / 20.5	20.9 / 20.8	19.6 / 20.3	19.6 / 20.1
	Airflow	cfm	5,544 + 6,286	5,827 + 6,286	6,286 + 6,286	6,286 + 8,228	8,228 + 8,228
Refrigerant Piping	Vertical Pipe Length Above	ft.	164 (295 w/outdoor setting)	164 (295 w/outdoor setting)	164 (295 w/outdoor setting)	164 (295 w/outdoor setting)	164 (295 w/outdoor setting)
	Vertical Pipe Length Below	ft.	130 (295 w/outdoor setting)	130 (295 w/outdoor setting)	130 (295 w/outdoor setting)	130 (295 w/outdoor setting)	130 (295 w/outdoor setting)
	Vertical Pipe Length Between IDU	ft.	100	100	100	100	100
	Actual Pipe Length	ft.	540	540	540	540	540
	Equivalent Pipe Length	ft.	620	620	620	620	620
	Total Pipe Length	ft.	3,280	3,280	3,280	3,280	3,280
Unit	Weight (RXYQ_TAT / RXYQ_TAY)	lbs.	435 + 528 / 451 + 556	525 + 528 / 553 + 556	528 + 528 / 556 + 556	528 + 695 / 556 + 709	695 + 695 / 709 + 709
	Dimensions (H x W x D)	in.	(66-11/16 x 48-7/8 x 30-3/16) + (66-11/16 x 36-11/16 x 30-3/16)	(66-11/16 x 48-7/8 x 30-3/16) x 2			

			26 Ton	28 Ton	30 Ton	32 Ton	34 Ton
Model	208-230V/3Ph/60Hz		RXYQ312TATJU	RXYQ336TATJU	RXYQ360TATJU	RXYQ384TATJU	RXYQ408TATJU
	460V/3Ph/60Hz		RXYQ312TAYDU	RXYQ336TAYDU	RXYQ360TAYDU	RXYQ384TAYDU	RXYQ408TAYDU
	Combination		1 x RXYQ168T 1 x RXYQ144T	2 x RXYQ168T	3 x RXYQ120T	1 x RXYQ168T 1 x RXYQ120T 1 x RXYQ96T	1 x RXYQ168T 1 x RXYQ144T 1 x RXYQ96T
Performance	Rated Cooling Capacity	Btu/h	296,000	312,000	334,000	352,000	372,000
	Rated Heating Capacity	Btu/h	334,000	344,000	372,000	400,000	435,000
	Operation Range - Cooling	°F DB	23-122	23-122	23-122	23-122	23-122
	Operation Range - Heating	°F WB	-4 - 60	-4 - 60	-4 - 60	-4 - 60	-4 - 60
	Sound Pressure	dB(A)	68	68	66	68	68
	IEER (Ducted/Non-Ducted)		18.8 / 19.9	18.5 / 20.6	18.5 / 19.4	18.5 / 21.1	19.0 / 21.1
	Airflow	cfm	8,228 + 8,228	8,228 + 8,228	6,286 + 6,286 + 6,286	5,827 + 6,286 + 8,228	6,286 + 6,286 + 8,228
Refrigerant Piping	Vertical Pipe Length Above	ft.	164 (295 w/outdoor setting)	164 (295 w/outdoor setting)	164 (295 w/outdoor setting)	164 (295 w/outdoor setting)	164 (295 w/outdoor setting)
	Vertical Pipe Length Below	ft.	130 (295 w/outdoor setting)	130 (295 w/outdoor setting)	130 (295 w/outdoor setting)	130 (295/w/outdoor setting)	130 (295 w/outdoor setting)
	Vertical Pipe Length Between IDU	ft.	100	100	100	100	100
	Actual Pipe Length	ft.	540	540	540	540	540
	Equivalent Pipe Length	ft.	620	620	620	620	620
	Total Pipe Length	ft.	3,280	3,280	3,280	3,280	3,280
Unit	Weight (RXYQ_TAT / RXYQ_TAY)	lbs.	695 + 695 / 709 +709	695 + 695 / 709 +709	528 + 528 + 528 / 525 +528 + 695	525 + 528 + 695 / 553 + 556 + 709	525 + 695 + 695 / 553 + 709 + 709
	Dimensions (H x W x D)	in.	(66-11/16 x 48-7/8 x 30-3/16) x 2		(66-11/16 x 48-7/8 x 30-3/16) x 3		

For all equipment installation and application limitations please refer to the specific Engineering Data Books. * Application rules apply.

Our continuing commitment to quality products may mean a change in specifications without notice.
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Appendix C

FAA APPROVAL LETTER

CHANDLER MUNICIPAL AIRPORT CHD

CHANDLER arizona

U.S. Department
of Transportation
**Federal Aviation
Administration**

Federal Aviation Administration
Phoenix Airports District Office

3800 N Central Ave
Suite 1025
Phoenix, AZ 85012

May 5, 2020

Chris Andres
Airport Administrator
Chandler Municipal Airport
2380 S. Stinson Way
Chandler, AZ 85286

Dear Mr. Andres:

Chandler Municipal Airport (CHD)
Aviation Activity Forecast Approval

The Federal Aviation Administration (FAA) has reviewed the aviation forecast for Chandler Municipal Airport (CHD) submitted March 30, 2020. The FAA approves both this forecast and the use of B-II for both the existing and future critical design aircraft for airport planning purposes, including Airport Layout Plan development.

The forecast was developed using current data and appropriate methodologies, therefore the forecast is approved for planning purposes at CHD. It is important to note that the approval of this forecast doesn't guarantee funding for large scale capital improvements as future projects will need to be justified by current activity levels at the time the projects are proposed for implementation.

If you have any questions about this forecast approval, please call me at 602-792-1073.

Sincerely,

Kyler Erhard

Kyler Erhard
Lead Program Manager



Appendix D

AIRPORT LAYOUT PLANS

CHANDLER arizona

CHANDLER arizona

Appendix D
AIRPORT LAYOUT PLAN

As part of this master plan, the Federal Aviation Administration (FAA) requires the development of Airport Layout Plan (ALP) drawings detailing specific parts of the airport and its environs. The ALP drawings are created on a computer-aided drafting (CAD) system and serve as the official depiction of the current and planned condition of the airport. The ALP drawings will be reviewed by the FAA to be sure all applicable federal regulations are met. The FAA will use the ALP as the basis for justification for funding decisions.

It should be noted that FAA require that any changes to the airfield (i.e., runway and taxiway system, navigational aids, etc.) be presented on the ALP. The landside configuration developed during the master planning process is also depicted on the ALP, but the FAA recognizes that landside development is much more fluid and dependent upon developer needs. Thus, an updated ALP set is typically not necessary for future landside development.

The five primary functions of the ALP that define its purpose are provided in Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*, as follows:

1) An ALP creates a blueprint for airport development by depicting proposed facility improvements. The ALP provides a guideline by which the airport sponsor can ensure that development maintains airport design standards and safety requirements and is consistent with airport and community land use plans.

2) The ALP is a public document that serves as a record of aeronautical requirements, both present and future, and as a reference for community deliberations on land use proposals and budget resource planning.

3) The approved ALP enables the airport sponsor and the FAA to plan for facility improvements at the airport. It also allows the FAA to anticipate budgetary and procedural needs. The approved ALP will also allow the FAA to protect the airspace required for facility or approach procedure improvements.

4) The ALP can be a working tool for the airport sponsor, including its development and maintenance staff.

5) An approved ALP is necessary for the airport to receive financial assistance under the terms of the *Airport and Airway Improvement Act of 1982*, as amended, and to be able to impose and use Passenger Facility Charges. An airport must keep its ALP current and follow that plan because those are grant assurance requirements of the Airport Improvement Program (AIP) and previous airport development programs, including the 1970 *Airport Development Aid Program* (ADAP) and *Federal Aid Airports Program* (FAAP) of 1946, as amended.

The FAA requires that any planned changes to the airfield (i.e., runway and taxiway system, etc.) be represented on the drawings. However, the ALP drawing set is not intended to provide design engineering accuracy.

AIRPORT LAYOUT PLAN DRAWING SET

The ALP drawing set for the Airport Master Plan includes several technical drawings which depict various aspects of the current and future layout of the airport. The following is a description of the ALP drawings included with this Airport Master Plan.

AIRPORT LAYOUT PLAN DRAWING

An official ALP drawing has been developed for Chandler Municipal Airport, a draft of which is included in this appendix. The ALP drawing graphically presents the existing and future airport facilities and layout plan. The ALP drawing includes, but is not limited to, such elements as the physical airport features, wind data tabulation, location of airfield facilities (i.e., runways, taxiways, navigational aids), and landside development. Also presented on the ALP are the runway safety areas, airport property boundary, and revenue support areas.

The computerized plan provides detailed information on existing and future facility layouts on multiple layers that permit the user to focus on any section of the airport at a desired scale. The plan can be used as base information for subsequent planning and design efforts, and can be easily updated in the future to reflect new development and more detail concerning existing conditions as made available through design surveys.

TERMINAL AREA PLAN DRAWING

The terminal area plan drawing presents a large-scale depiction of areas with significant terminal facility development. This drawing is an enlargement of a portion of the ALP. The drawing includes the landside facility areas as well as the supporting infrastructure, including access roads and parking facilities. The terminal area drawings include a listing of all airport buildings and identifies the aircraft apron areas.

FAR PART 77 AIRPORT AIRSPACE DRAWING

Federal Aviation Regulation (F.A.R.) Part 77, *Objects Affecting Navigable Airspace*, was established for use by local authorities to control the height of objects near airports. The FAR Part 77 Airport Airspace drawing included in this Airport Master Plan is a graphic depiction of this regulatory criterion. The FAR Part 77 Airport Airspace drawing is a tool to aid local authorities in determining if proposed development could present a hazard to aircraft using the airport. The FAR Part 77 Airport Airspace drawing can be a critical tool for the airport sponsor's use in reviewing proposed development near the airport.

The FAR Part 77 Airport Airspace drawing assigns three-dimensional imaginary surfaces associated with the airport. These imaginary surfaces emanate from the runway centerline(s) and are dimensioned according to the visibility minimums associated with the approach to the runway end and size of aircraft to operate on the runway. The FAR Part 77 imaginary surfaces include the primary surface, approach surface, transitional surface, horizontal surface, and conical surface.

The airport sponsor should do all in their power to ensure development stays below the FAR Part 77 surfaces to protect the role of the airport. The drawing includes a table detailing the penetrations to any of the FAR Part 77 surfaces. A recommended action or disposition is also presented for each penetration. This drawing is based on the planned future condition of the airport.

Penetrations of the FAR Part 77 surfaces indicate an obstruction. Once an obstruction is identified, the FAA determines if the obstruction is a hazard to air navigation. When an obstruction is determined to be a hazard, a variety of actions can be taken to mitigate the hazard. The table included on the drawing presents a recommended action or disposition; however, the FAA is responsible to make the final determination as to what course of action should be taken. Potential mitigating measures include removing the hazard, lowering the hazard, adding an obstruction light, increasing instrument approach visibility minimums, or displacing runway landing thresholds. The following discussion will describe those surfaces that make up the recommended FAR Part 77 surfaces.

Primary Surface: The primary surface is longitudinally centered on the runways and extends 200 feet beyond each runway end. The elevation of any point on the primary surface is the same as the elevation along the nearest associated point on the runway centerline. The primary surface for Runway 4R-22L is 500 feet wide as centered on the runway and 250 feet wide for Runway 4L-22R. If non-precision instrument approaches are established to either end of Runway 4L-22R in the future, the primary surface will increase to 500 feet wide.

Approach Surface: An approach surface is also established for each runway end. The approach surface begins at the end of the primary surface, extends upward and outward, and is centered along an extended runway centerline. The dimensions of the approach surface leading to each runway is based upon the type of instrument approach available (instrument or visual) or planned.

With visibility minimums of not lower than one-mile for Runway 4R, the approach surface extends a horizontal distance of 10,000 feet at a 34:1 slope. The outer width of the approach surface is 3,500 feet. Runways 4L, 22R, and 22L are visual-only runways currently so the approach surfaces have an outer width of 1,500 feet and extend a horizontal distance of 5,000 feet at a 20:1 slope. If instrument approaches of one-mile or greater minimums are established to these runways, the approach surface will match that of Runway 4R.

Transitional Surface: Each runway has a transitional surface that begins at the outside edge of the primary surface at the same elevation as the runway. The transitional surface rises at a slope of 7:1, up to a height 150 feet above the highest runway elevation. At that point, the horizontal surface begins where the transitional surface ends.

Horizontal Surface: The horizontal surface is established at 150 feet above the highest elevation of the runway surface. Having no slope, the horizontal surface connects the transitional and approach surfaces to the conical surface at a distance of 10,000 feet from the end of the primary surfaces of each runway.

Conical Surface: The conical surface begins at the outer edge of the horizontal surface. The conical surface then continues for an additional 4,000 feet horizontally at a slope of 20:1. Therefore, at 4,000 feet from the horizontal surface, the elevation of the conical surface is 350 feet above the highest airport elevation.

INNER APPROACH SURFACE DRAWING

The inner approach surface drawing provides greater detail of penetrations to the approach surface and the obstacle clearance surface (OCS) within a few thousand feet of the runway end. Any penetrations are documented in the obstruction table. The obstruction table includes a description of the object, its top elevation, the depth of penetration, and a recommended disposition to mitigate the penetration.

DEPARTURE SURFACE DRAWING

For primary runways supporting instrument departures, a separate drawing depicting the departure surface is required. The departure surface, when clear, allows pilots to follow standard departure procedures. The departure surface emanates from the departure end of the runway to a distance of 10,200 feet. The inner width is 1,000 feet and the outer width is 6,466 feet. The slope of the departure surface is 40:1.

Obstacles frequently penetrate the departure surface. Where object penetrations exist, the departure procedure can be adjusted by:

a) Non-standard climb rates, and/or
b) Non-standard (higher) departure minimums.

Therefore, it is important for the airport sponsor to identify and remove departure surface obstacles whenever possible in order to enhance takeoff operations at the airport. The airport sponsor should also prevent any new obstacles from developing.

AIRPORT LAND USE DRAWING

The objective of the airport land use drawing is to coordinate uses of the airport property in a manner compatible with the functional design of the airport facility. Airport land use planning is important for orderly development and efficient use of available space. There are two primary considerations for airport land use planning, which are to secure those areas essential to the safe and efficient operation of the airport and to determine compatible land uses for the balance of the property which would be most advantageous to the airport and community.

EXHIBIT A - AIRPORT PROPERTY MAP

The airport property map provides a drawing depicting the airport property boundary, the various tracts of land that were acquired to develop the airport, the method of acquisition, and other information on the property under airport control that is subject to FAA grant assurances. The various recorded deeds that make up the airport property are listed in tabular format. The primary purpose of the drawing is to provide information for analyzing the current and future aeronautical use of land acquired with federal funds.

AIRPORT LAYOUT PLAN

for the

CHANDLER
MUNICIPAL AIRPORT
CHD

Prepared for
the City of Chandler, Arizona



LOCATION MAP

DRAWING INDEX

1. TITLE SHEET
2. AIRPORT DATA SHEET
3. AIRPORT LAYOUT PLAN DRAWING
4. AIRPORT AIRSPACE DRAWING
5. APPROACH PROFILES FOR RUNWAYS 4R-22L AND 4L-22R
6. INNER PORTION OF THE APPROACH SURFACE DRAWING RUNWAY 4R
7. INNER PORTION OF THE APPROACH SURFACE DRAWING RUNWAY 22L
8. INNER PORTION OF THE APPROACH SURFACE DRAWING RUNWAY 4L-22R
9. DEPARTURE SURFACE DRAWING RUNWAY 4R-22L
10. DEPARTURE SURFACE DRAWING RUNWAY 4L-22R
11. TERMINAL AREA DRAWING - NORTH
12. TERMINAL AREA DRAWING - SOUTH
13. LAND USE DRAWING
14. EXHIBIT "A" AIRPORT PROPERTY INVENTORY MAP



NOT TO SCALE

VICINITY MAP



Source: ESRI USA Counties 2013

COUNTY MAP

FOR APPROVAL BY

_____ _____
Mayor ***Date***

NO.	REVISIONS	DATE	BY	APP'D.

"THE PREPARATION OF THESE DOCUMENTS WAS FINANCED IN PART THROUGH A GRANT FROM THE FEDERAL AVIATION ADMINISTRATION AS PROVIDED UNDER SECTION 505 OF THE AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982, AS AMENDED. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THESE DOCUMENTS BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED HEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS."

CHANDLER MUNICIPAL AIRPORT (CHD)

TITLE SHEET

DRAFT

CHANDLER, ARIZONA

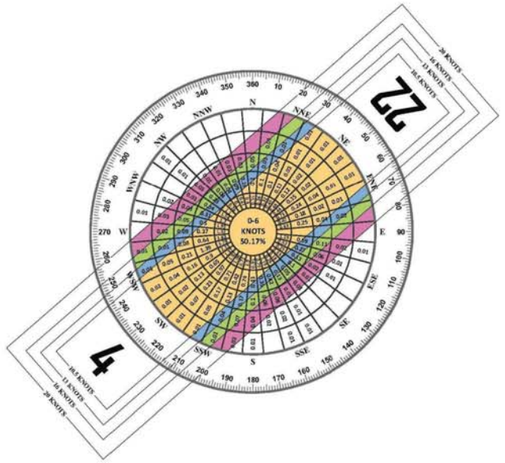
PLANNED BY:	E. Pfeifer
DETAILED BY:	Maggie Beaver
APPROVED BY:	T.Kahmann

January 2021 SHEET 1 OF 14

Coffman Associates
Airport Consultants
www.coffmanassociates.com

Coffman Associates C:\Users\Maggie Beaver\Coffman Associates Inc\Coffman - wp_CA2\Maggie\CAD\CHANDLER\2020\ALP SET\01 CHD COVER 01 2021.dwg Printed Date: 3-05-21 09:16:23 AM Maggie Beaver

ALL WEATHER WIND COVERAGE				
Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
Runway 4-22	94.97%	97.52%	99.21%	99.75%



SOURCE:
NOAA National Climatic Center
Asheville, North Carolina
Chandler Municipal Airport
Chandler, AZ

OBSERVATIONS:
50,436 All Weather Observations
Jan. 1, 2010 - Dec, 31 2019

ELECTRONIC AIRPORT NAVAID OWNERSHIP	
NAVAID	OWNER
RNAV (GPS)	FAA
VOR 1mile 4R	FAA
AWOS	National Weather Service

MODIFICATIONS TO STANDARDS APPROVAL TABLE			
APPROVAL DATE	AIRSPACE CASE NUMBER	STANDARD MODIFIED	DESCRIPTION
None Required			

RUNWAY DATA TABLE

		RUNWAY 4R-22L				RUNWAY 4L-22R			
		EXISTING		ULTIMATE		EXISTING		ULTIMATE	
Runway Identification		4R	22L	4R	22L	4L	22R	4L	22R
Runway Design Code (RDC)		B-II-5000		SAME		B-II-VIS (SMALL)		B-II-5000 (SMALL)	
Approach Reference Code (APRC)		D/IV/5000 and D/V/5000		SAME		B/II/VIS		SAME	
Departure Reference Code (DPRC)		D/IV and D/V		SAME		B/II		SAME	
Runway Surface Material		ASPHALT		SAME		ASPHALT		SAME	
Runway Pavement Strength By Wheel Loading (in thousands of lbs.)		30 (S)		SAME		30 (S)		SAME	
Runway Pavement Strength by PCN		N/A		SAME		N/A		SAME	
Runway Surface Treatment		NONE		SAME		NONE		SAME	
Runway Effective Gradient		0.15%		SAME		0.12%		SAME	
Runway Percent Wind Coverage	10.5 knots	94.97%		SAME		94.97%		SAME	
	13 knots	97.52%		SAME		97.52%		SAME	
	16 knots	99.21%		SAME		99.21%		SAME	
	20 knots	99.75%		SAME		99.75%		SAME	
Runway Dimensions (L x W)		4,870' X 75'		5,550' X 75'		4,401' X 75'		SAME	
Runway End Coordinates	Latitude	33°15'56.6084"N	33°16'27.8124"N	SAME	33°16'32.19"N	33°15'50.8078"N	33°16'19.0137"N	SAME	SAME
	Longitude	111°48'50.9868"W	111°48'07.2947"W	SAME	111°48'01.18"W	111°49'11.8273"W	111°48'32.3495"W	SAME	SAME
Runway Displaced Threshold		N/A	N/A	SAME	SAME	N/A	N/A	SAME	SAME
Runway Displaced Threshold Elevation		N/A	N/A	SAME	SAME	N/A	N/A	SAME	SAME
Runway Displaced Threshold Coordinates	Latitude	N/A	N/A	SAME	SAME	N/A	N/A	SAME	SAME
	Longitude	N/A	N/A	SAME	SAME	N/A	N/A	SAME	SAME
Runway Safety Area Dimensions (width x length beyond end) - Design Std.		150' X 300'	150' X 300'	SAME	SAME	150' X 300'	150' X 300'	SAME	SAME
Runway Safety Area Dimensions (width x length beyond end) - Actual		150' X 300'	150' X 300'	SAME	SAME	150' X 300'	150' X 300'	SAME	SAME
Runway Lighting Type		MIRL		SAME		MIRL		SAME	
Runway Protection Zone Dimensions		500'X700'X1,000'	500'X700'X1,000'	SAME	SAME	250'X450'X1,000'	250'X450'X1,000'	SAME	SAME
Runway Marking Type		NON- PRECISION		SAME		BASIC		NON-PRECISION	
14 CFR Part 77 Approach Slope		34:1	20:1	SAME	34:1	20:1	20:1	SAME	SAME
14 CFR Part 77 Approach Type		NON-PRECISION	VISUAL	SAME	NON-PRECISION	VISUAL	VISUAL	NON-PRECISION	NON-PRECISION
Approach Visibility Minimums		≥ 1 MILE	VISUAL	SAME	≥ 1 MILE	VISUAL	VISUAL	≥ 1 MILE	≥ 1 MILE
Type of Aeronautical Survey Required for Approach		NVGS	NVGS	SAME	SAME	NVGS	NVGS	SAME	SAME
Departure Surface (Yes or N/A)		YES	YES	SAME	SAME	N/A	N/A	YES	YES
Runway Object Free Area Dimensions (width x length beyond end)		500' X 300'	500' X 300'	SAME	SAME	500' X 300'	500' X 300'	SAME	SAME
Runway Obstacle Free Zone Dimension (width x length beyond end)		400' X 200'	400' X 200'	SAME	SAME	250' X 200'	250' X 200'	SAME	SAME
Obstacle Clearance Surface (Table 3-2 post Engineering Brief #99)		4	4	SAME	SAME	2	2	4	4
Runway Visual and Instrument Navaids		RNAV (GPS) 1-MILE (4R)		RNAV (GPS) 1-MILE (22L)		PAPI-4s		SAME	
		VOR 1-MILE (4R)						RNAV (GPS) 1-MILE 4L-22R	
		PAPI-4s		SAME				REILs	
		REILs		SAME					
Touchdown Zone Elevation (TDZE)		1239.6'	1243.1'	SAME	1242.0'	1234.4'	1236.4'	SAME	SAME
Vertical Datum		NAD 83		SAME		NAD 83		SAME	
Horizontal Datum		NAVD		SAME		NAVD		SAME	

RUNWAY DECLARED DISTANCE	EXISTING		ULTIMATE		EXISTING		ULTIMATE	
	4R	22L	4R	22L	4L	22R	4L	22R
Takeoff Run Available (TORA)	4,870'	4,870'	5,550'	5,550'	4,401'	4,401'	SAME	SAME
Takeoff Distance Available (TODA)	4,870'	4,870'	5,550'	5,550'	4,401'	4,401'	SAME	SAME
Accelerate-Stop Distance Available (ASDA)	4,870'	4,870'	5,550'	5,550'	4,401'	4,401'	SAME	SAME
Landing Distance Available (LDA)	4,870'	4,870'	5,550'	5,550'	4,401'	4,401'	SAME	SAME

AIRPORT DATA

City: Chandler, Arizona		County: Maricopa	Owner: City of Chandler
Airport Name & ID: Chandler Municipal Airport (CHD)		EXISTING	ULTIMATE
Airport Reference Code (ARC)		B-II	B-II
Mean Maximum Temperature of Hottest Month		106.1° F	SAME
Airport Elevation (NAVD 88)		1243.1'	SAME
Airport Navigational Aids		RNAV (GPS) 1 MILE (4R)	RNAV (GPS) 1 MILE 22L, 4L ,22R
		VOR 1 MILE (4R)	SAME
		PAPIs-4	SAME
		REILs (4R-22L)	REILs (4L-22R)
Airport Reference Point (ARP) Coordinates	Latitude	33° 16 ' 8.80"N	33° 16 ' 09.65"N
	Longitude	111° 48'40.00"W	111° 48'39.09"W
Miscellaneous Facilities		AWOS	SAME
		SEGMENTED CIRCLE	SAME
		LIGHTED WINDCONE	SAME
Design Critical Aircraft		KING AIR 200/300/350	CJ4/X
Wingspan of Design Aircraft (Feet)		57.92'	63.58
Approach Speed of Design Aircraft (Knots)		107	111/112
Undercarriage Width of Design Aircraft (Feet)		16.25'	28.67
Magnetic Declination (Degrees)		09°58'E	
Declination Date		Oct-20	
Declination Source		NOAA	
NPIAS Code		RELIEVER	SAME
State System Plan Role		RELIEVER	SAME

TAXIWAY DATA

| | STANDARD TDG PER CRITICAL AIRCRAFT | | PARALLEL TAXIWAYS | | | | | | ENTRANCE/EXIT TAXIWAYS | | | | | |

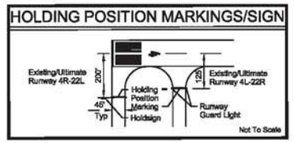
EXISTING AIRPORT FACILITES

#	Facility Name	Top Elevation ft. msl
1	Terminal	1252.39'
2	Chandler Air	1252.92'
3	Chandler Air Fuel Storage	1244.43'
4	Chandler Air/The Hangar Café/Chandler Avionics	1260.88'
5	Chandler Air Service/Southwest	1265.07'
6	Conventional Hangar	12.53.78'
7	T-Hangar	1256.69'
8	T-Hangar	1256.36'
9	T-Hangar	1248.41'
10	T-Shade	1237.8'
11	ATCT	1317..21'
12	Self Service Fuel	1237.23'
13	Maintenance Building	1245.11'
14	Airport Operations	1256.72'
15	Conventional Hangars	1257.44'
16	T-Hangars	1253.24'
17	T-Hangars	1243.90'
18	T-Hangars	1247.65
19	T-Hangars	1247.67'
20	T-Hangars	1248.30'
21	T-Hangars	1248.51'
22	T-Hangars	1248.08'
23	T-Hangars	1254.43'
24	T-Hangars	1250.56'
25	T-Hangars	1249.05'
26	T-Hangars	1249.05'
27	T-Hangars	1248.62'
28	Conventional Hangar	1256.36'
29	Conventional Hangar	1256.36'
30	Conventional Hangar	1256.58'
31	Conventional Hangar	1256.58'
32	Conventional Hangar	1255.61'
33	Conventional Hangar	1255.50'
34	Conventional Hangar	1255.93'
35	Conventional Hangar	1255.50'
36	Conventional Hangar	1253.89'
37	T-Hangars	1253.03'
38	T-Hangars	1248.73'
39	T-Hangars	1248.19'
40	T-Hangars	1250.45'
41	T-Hangars	1248.84'
42	T-Hangars	1249.48'
43	T-Hangars	1249.81'
44	T-Hangars	1250.13'
45	Quantum Helicopters	1276.04'
46	Quantum Helicopters	1252.60'
47	Quantum Helicopters	1252.60'

ULTIMATE AIRPORT FACILITIES

#	Facility Name	Top Elevation ft. msl*
60	Terminal	1260.00'
61	Airport Operations/Maintenance	1250.00'
62	Relocated Self Service Fuel	1237.00'
63	Self Service Fuel Station	1247.00'

HOLDING POSITION MARKINGS/SIGN



LEGEND

EXISTING	ULTIMATE	DESCRIPTION
		AIRPORT PROPERTY LINE
N/A		AVIATION RESERVE
		SECTION CORNERS
		AIRPORT REFERENCE POINT (ARP)
		AIRPORT ROTATING BEACON
		AVIGATION EASEMENT
		BUILDING RESTRICTION LINE (35')
		STRUCTURES ON AIRPORT
		STRUCTURE OFF AIRPORT
N/A		ABANDON/REMOVE
		RUNWAY TAXIWAY APRON PAVEMENT
		SHOULDER PAVEMENT
		FENCE LINE
		HOLD MARKING
		ROADS AND PARKING PAVEMENT
		SURVEY MONUMENT WITH IDENTIFIER
		RUNWAY OBJECT FREE AREA
		RUNWAY SAFETY AREA
		RUNWAY OBSTACLE FREE ZONE
		RUNWAY PROTECTION ZONE
		RUNWAY VISIBILITY ZONE
		TAXIWAY OBJECT FREE AREA
		TAXIWAY SAFETY AREA
		TIE-DOWNS
	SAME	PAPI-4
		WINDCONE
		RUNWAY END IDENTIFIER LIGHTS
		TOPOGRAPHIC CONTOURS

FAA APPROVAL STAMP

GENERAL NOTES:

1. EXISTING AIRFIELD LOCATIONS, RUNWAY INTERSECTION ELEVATIONS, ULTIMATE RUNWAY ELEVATIONS, COORDINATE, AND BEARING CALCULATIONS DERIVED FROM GROUND SURVEY PREPARED BY WOOLPERT AUGUST 12, 2020.
2. HORIZONTAL DATUM: NORTH AMERICAN DATUM 1983 - NAD83; VERTICAL DATUM: NORTH AMERICAN DATUM 1988 - NAVD88.
3. UNLESS NOTED OTHERWISE, EXISTING BUILDING ELEVATIONS IN THIS ALP FROM SURVEY DATA PREPARED BY WOOLPERT AUGUST 12, 2020.
4. MAGNETIC DECLINATION FROM NOAA NATIONAL GEOPHYSICAL DATA CENTER.
5. SEE INNER PORTION OF THE APPROACH SURFACE DRAWINGS FOR THRESHOLD SITING SURFACE PENETRATIONS.
6. ROAD ELEVATIONS ARE GROUND ELEVATIONS FROM WOOLPERT SURVEY DATED AUGUST 12, 2020.
7. THE SOLLID CABINETRY FACILITY DEPICTED ON THIS DRAWING IS BASED ON A JUNE 2018 PRELIMINARY SITE PLAN. THE OBSTRUCTION EVALUATION WILL BE UPDATED TO REFLECT THE BUILDING'S SURVEYED TOP ELEVATION ONCE CONSTRUCTION IS COMPLETED, AND THAT INFORMATION IS MADE AVAILABLE.

NO.	REVISIONS	DATE	BY	APP'D.

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CHANDLER MUNICIPAL AIRPORT (CHD)

AIRPORT LAYOUT PLAN DRAWING

DRAFT

CHANDLER, ARIZONA

PLANNED BY:	E. Pfeifer
DETAILED BY:	Maggie Beaver
APPROVED BY:	T.Kahmann
January 2021	SHEET 3 OF 14

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www.coffmanassociates.com

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Ult RW 22R
End EL 1236.4

Ult RW 22L
End EL 1242.0

Ult RW 4L
End EL 1230.9

Ult RW 4R
End EL 1235.7

Airport EL = 1243.1

Horizontal Surface EL = 1393.1

20:1 CONICAL SURFACE

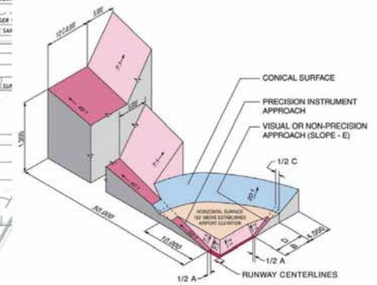
7:1 TRANSITIONAL

10,000' R

LIMITS OF RECOMMENDED PART 77 HEIGHT ZONING

DIM	ITEM	DIMENSIONAL STANDARDS (FEET)					
		VISUAL RUNWAY		NON-PRECISION INSTRUMENT RUNWAY			PRECISION INSTRUMENT RUNWAY
		A	B	A	B C	B D	
A	WIDTH OF PRIMARY SURFACE AND APPROACH SURFACE WIDTH AT INNER END	250	500	500	500	1,000	1,000
B	RADIUS OF HORIZONTAL SURFACE	5,000	5,000	5,000	10,000	10,000	10,000
		VISUAL APPROACH		NON-PRECISION INSTRUMENT APPROACH			PRECISION INSTRUMENT APPROACH
		A	B	A	B C	B D	
C	APPROACH SURFACE WIDTH AT END	1,250	1,500	2,000	3,500	4,000	16,000
D	APPROACH SURFACE LENGTH	5,000	5,000	5,000	10,000	10,000	*
E	APPROACH SLOPE	20:1	20:1	20:1	34:1	34:1	*

A - UTILITY RUNWAYS
B - RUNWAYS LARGER THAN UTILITY
C - VISIBILITY MINIMUMS GREATER THAN 3/4 MILE
D - VISIBILITY MINIMUMS AS LOW AS 3/4 MILE
* - PRECISION INSTRUMENT APPROACH SLOPE IS 50:1 FOR INNER 10,000 FEET AND 40:1 FOR AN ADDITIONAL 40,000 FEET



ISOMETRIC VIEW OF SECTION A-A

SOURCE: FAA Order JO 7400.2J, Figure 6-3-3

GENERAL NOTES:

1. THE PART 77 SURFACES REPRESENT THE EXISTING HEIGHT HAZARD LIMITATIONS FOR CAVERN CITY AIRPORT. SEE THE CITY OF CARLSBAD CODE OF ORDINANCES CHAPTER 56, SECTION VIII - REGULATION OF AIRPORTS
2. OBSTRUCTION SURVEY DATED AUGUST 12, 2020 BY WOOLPERT.
3. HORIZONTAL DATUM: NORTH AMERICAN DATUM 1983 - NAD83; VERTICAL DATUM: NORTH AMERICAN DATUM 1988 - NAVD88
4. OSTRUCTIONS IDENTIFIED BY COFFMAN ASSOCIATES FROM WOOLPERT OF GROUND SURVEY.
5. SUPPLEMENTAL DATA EXAMINED INCLUDE FAA DIGITAL OBSTACLE FILE (DOF), RELEASE DATE AUGUST 12, 2020.
6. THE FOLLOWING USGS 7.5 QUAD MAPS OF THE STATE OF NEW MEXICO WERE APPLIED AS BACKGROUND: GUADALUPE, CHANDLER, HIGLEY, GILA BUTTE NW, GILA BUTTE, CHANDLER HEIGHTS
7. SEE INNER PORTION OF THE APPROACH SURFACE DRAWINGS FOR CLOSE-IN APPROACH DETAILS.
8. ALL ELEVATIONS IN MSL FEET.

ID	Feature	Ground Elevation (ft. msl.)	Top Elevation (ft. msl.)	Surface Penetrated	Penetration Value (ft.)	DOF Object #	Disposition
1	Tower	Unknown	1,319.03	Transitional	0.64	04-000583	Add Obstruction Light
2	Tank	1,235.00	1,267.00	Transitional	6.03	04-000319	Add Obstruction Light
3	Light Pole	Unknown	1,280.96	Transitional	16.38	04-021790	Add Obstruction Light
4	Control Tower	1,234.00	1,337.00	Transitional	21.70	04-020613	Add Obstruction Light
5	Transmission Line	Unknown	1,394.65	Horizontal	1.55	04-000576	Add Obstruction Light
6	Transmission Line	Unknown	1,395.83	Horizontal	2.73	04-000577	Add Obstruction Light

LEGEND

OBSTRUCTION AREA - SAMPLED POINTS REPRESENT THE HIGHEST POINTS WITHIN THE VICINTIY OF OBJECTS.

o1 OBSTRUCTION IDENTIFIER

MAGNETIC DECLINATION 09° 58' E (OCT 2020)
RATE OF CHANGE 00° 06' W (OCT 2020)

0 2000 4000
SCALE IN FEET

NO.	REVISIONS	DATE	BY	APP'D.

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CHANDLER MUNICIPAL AIRPORT (CHD)

DRAFT

AIRPORT AIRSPACE

CHANDLER, ARIZONA

PLANNED BY: E. Pfeifer
DETAILED BY: Maggie Beaver
APPROVED BY: T. Kahmann

January 2021 SHEET 4 OF 14

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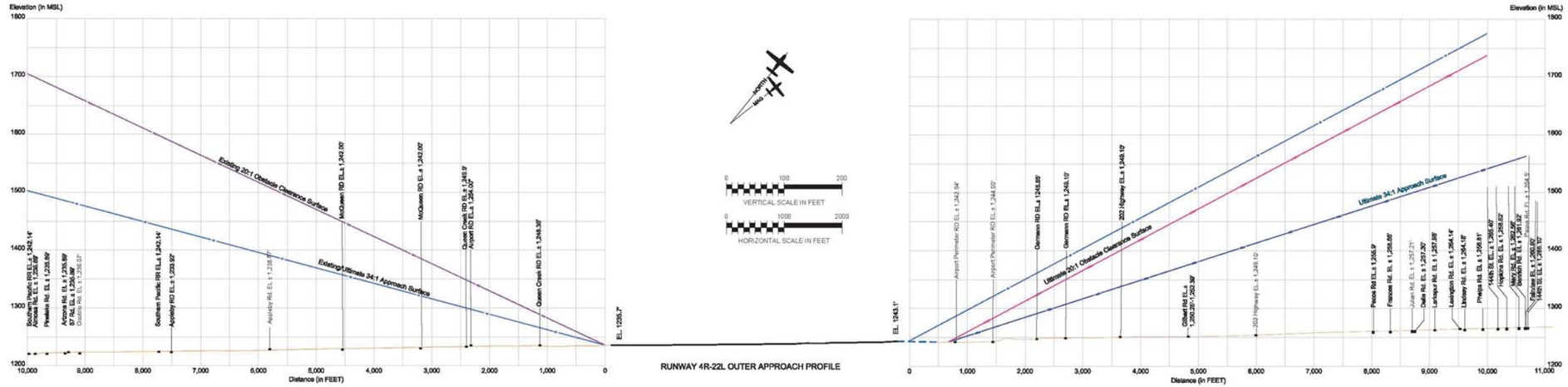
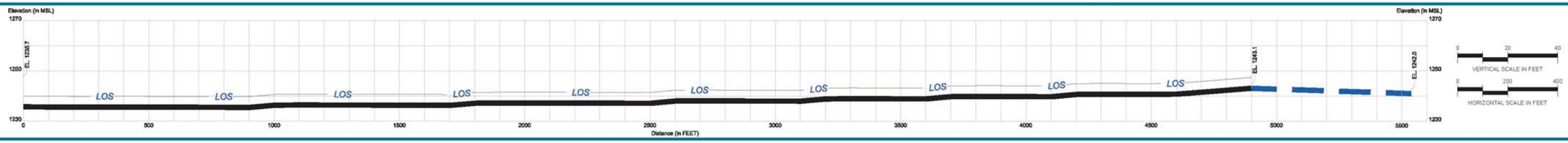
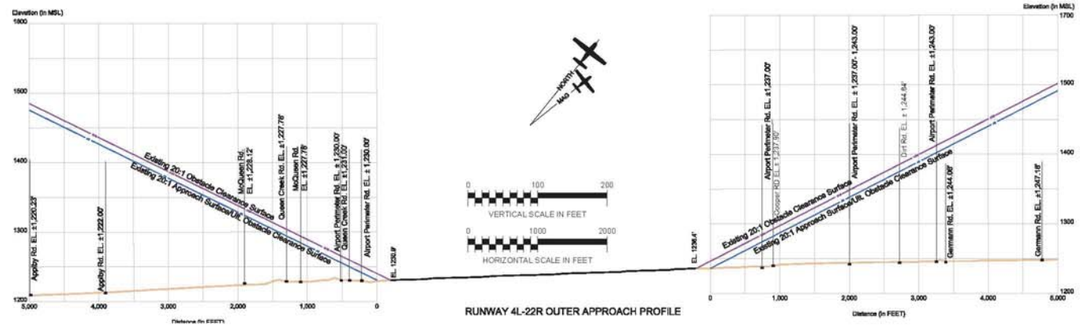




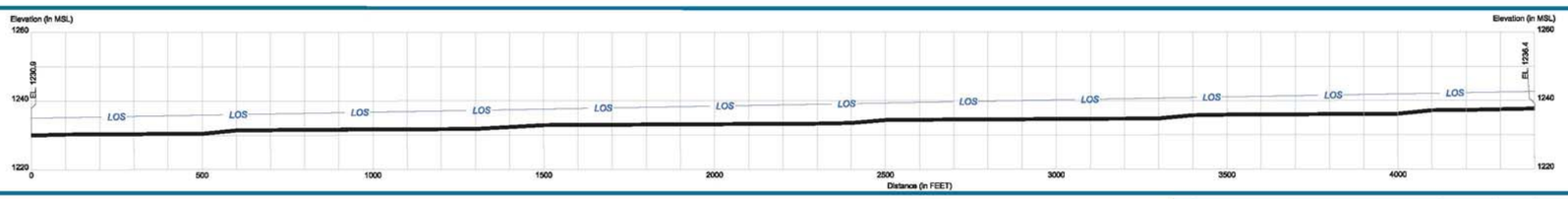
Runway 4R Obstructions						
ID	Feature	Height Above Ground (ft.)	Top Elevation (ft. msl.)	Penetration Values		Disposition
				4R Approach	4R OCS	
No Obstructions						

Runway 22L Obstructions									
ID	Feature	Height Above Ground (ft.)	Top Elevation (ft. msl.)	Penetration Values				DOF Object #	Disposition
				Existing 22L Approach	Ultimate 22L Approach	Existing 22L OCS	Ultimate 22L OCS		
1	Airport Perimeter Road	10.00	1,252.97	N/A	2.97	N/A	N/A	N/A	To Remain - Airport Controlled Road



Runway 4L Obstructions									
ID	Feature	Height Above Ground (ft.)	Top Elevation (ft. msl.)	Penetration Values				DOF Object #	Disposition
				Existing 4L Approach	Ultimate 4L Approach	Existing 4L OCS	Ultimate 4L OCS		
1	Pole	26.00	1,255.00	N/A	6.36	N/A	N/A	04-020176	Lower/Relocate
2	Pole	33.00	1,263.00	N/A	5.59	N/A	5.59	04-020606	Lower/Relocate
3	Pole	33.00	1,263.00	1.71	1.71	N/A	1.71	04-020607	Lower/Relocate

Runway 22R Obstructions									
ID	Feature	Height Above Ground (ft.)	Top Elevation (ft. msl.)	Penetration Values				DOF Object #	Disposition
				Existing 4L Approach	Ultimate 4L Approach	Existing 4L OCS	Ultimate 4L OCS		
No Obstructions									



GENERAL NOTES:

1. Obstructions, clearances, and locations are calculated from ultimate runway end elevations and ultimate approach surfaces, unless otherwise noted. Road obstructions reflect a safety clearance of 10' for dirt roads, 15' for non-interstate roads, 17' for interstate roads, and 23' for railroads.
2. Depiction of features and objects within the inner portion of the approach surfaces, are illustrated on the Inner Portion of the Approach Surface for Runway 4R-22L sheet 6 and Runway 4L-22R Sheet 7 of these plans.
3. Existing and future height and hazard ordinances are to be amended and/or referenced upon approval of updated PART 77 Airspace Plan.
4. Survey used for obstruction data from Woolpert 10B survey dated August 12, 2020.
5. Obstruction Data for groups represent the tallest (Natural or Man Made) object within the group.

NO.	REVISIONS	DATE	BY	APP'D.

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CHANDLER MUNICIPAL AIRPORT (CHD)

APPROACH PROFILES FOR RUNWAYS 4R-22L AND 4L-22R

CHANDLER, ARIZONA

DRAFT

PLANNED BY:	E. Pfeifer
DETAILED BY:	Maggie Beaver
APPROVED BY:	T.Kahmann
January 2021	SHEET 5 OF 14

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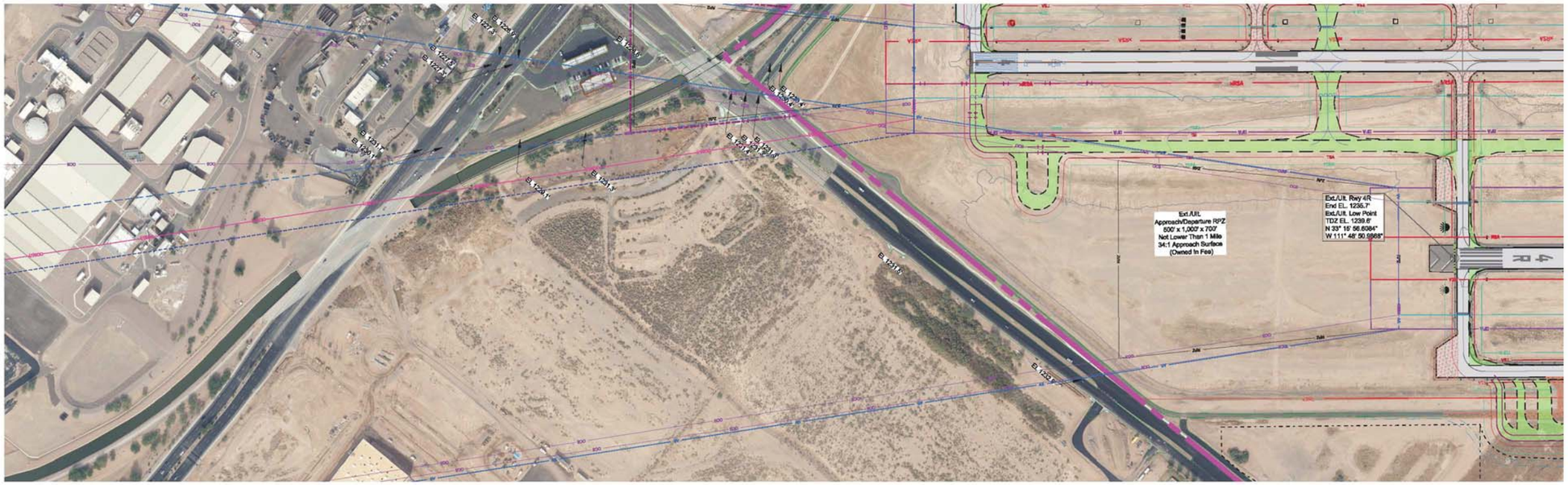

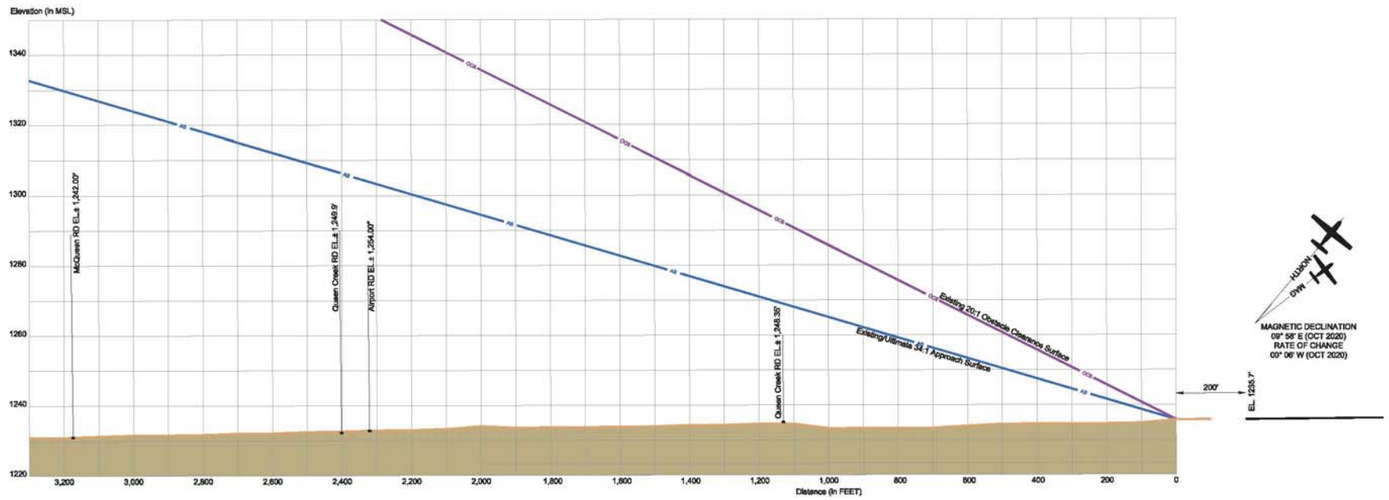

Runway 4R Obstructions						
ID	Feature	Height Above Ground (ft.)	Top Elevation (ft. msl.)	Penetration Values 4R Approach	4R OCS	Disposition
No Obstructions						

0 200 400
HORIZONTAL SCALE IN FEET

0 20 40
VERTICAL SCALE IN FEET

GENERAL NOTES:

1. GROUND SURVEY DATED AUGUST 12, 2020 BY WOOLPERT.
2. HORIZONTAL DATUM: NORTH AMERICAN DATUM 1983 - NAD83; VERTICAL DATUM: NORTH AMERICAN DATUM 1988 - NAVD88
3. OSTRUCTIONS IDENTIFIED BY COFFMAN ASSOCIATES FROM WOOLPERT, DATED AUGUST 12, 2020
4. SUPPLEMENTAL DATA EXAMINED INCLUDE FAA DIGITAL OBSTACLE FILE (DOF).
5. ALL ELEVATIONS IN MSL FEET.

PROFILE VIEW SIGNIFICANT OBJECT PROFILE VIEW

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SIGNIFICANT OBJECT/OBSTRUCTION CALLOUT

O'

NO.	REVISIONS	DATE	BY	APP'D.

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CHANDLER MUNICIPAL AIRPORT (CHD)
INNER PORTION OF THE APPROACH SURFACE DRAWING
RUNWAY 4R
CHANDLER, ARIZONA

DRAFT

PLANNED BY: E. Pfeifer
DETAILED BY: Maggie Beaver
APPROVED BY: T.Kahmann

January 2021 SHEET 6 OF 14

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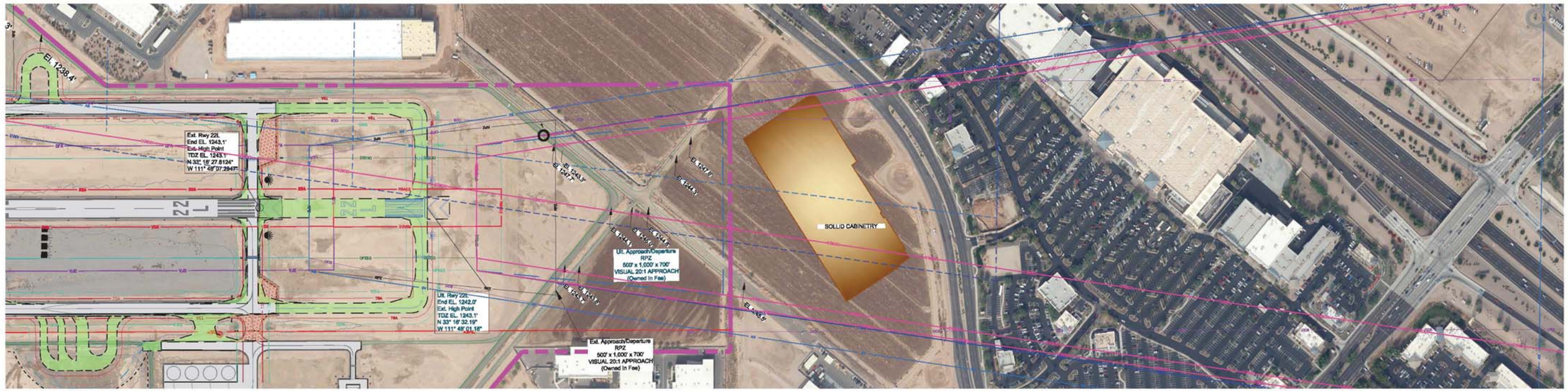

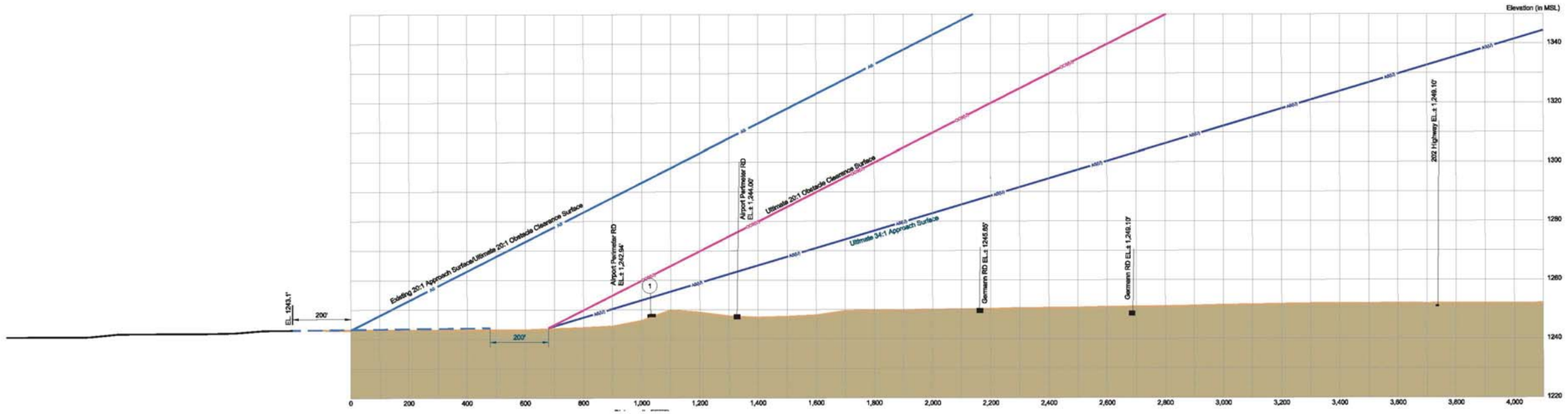



MAGNETIC DECLINATION
09° 59' E (OCT 2020)
RATE OF CHANGE
00° 06' W (OCT 2020)

Runway 22L Obstructions									
ID	Feature	Height Above Ground (ft.)	Top Elevation (ft. msl.)	Penetration Values				DOF Object #	Disposition
				Existing 22L Approach	Ultimate 22L Approach	Existing 22L OCS	Ultimate 22L OCS		
1	Airport Perimeter Road	10.00	1,252.97	N/A	2.97	N/A	N/A	N/A	To Remain - Airport Controlled Road

0 200 400
HORIZONTAL SCALE IN FEET

0 20 40
VERTICAL SCALE IN FEET

GENERAL NOTES:

1. GROUND SURVEY DATED AUGUST 12, 2020 BY WOOLPERT.
2. HORIZONTAL DATUM: NORTH AMERICAN DATUM 1983 - NAD83;
   VERTICAL DATUM: NORTH AMERICAN DATUM 1988 - NAVD88
3. OSTRUCTIONS IDENTIFIED BY: COFFMAN ASSOCIATES FROM WOOLPERT, DATED AUGUST 12, 2020
   SUPPLEMENTAL DATA EXAMINED INCLUDE FAA DIGITAL OBSTACLE FILE (DOF).
4. ALL ELEVATIONS IN MSL FEET.
5. THE SOLLID CABINETRY FACILITY DEPICTED ON THIS DRAWING IS BASED ON A JUNE 2018 PRELIMINARY SITE PLAN. THE OBSTRUCTION EVALUATION WILL BE UPDATED TO REFLECT THE BUILDING'S SURVEYED TOP ELEVATION ONCE CONSTRUTION IS COMPLETED, AND THAT INFORMATION IS MADE AVAILABLE.

PROFILE VIEW SIGNIFICANT OBJECT PROFILE VIEW



SIGNIFICANT OBJECT/OBSTRUCTION CALLOUT

NO.	REVISIONS	DATE	BY	APP'D.

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CHANDLER MUNICIPAL AIRPORT (CHD)
INNER PORTION OF THE APPROACH SURFACE DRAWING
RUNWAY 22L
CHANDLER, ARIZONA

DRAFT

PLANNED BY:	E. Pfeifer
DETAILED BY:	Maggie Beaver
APPROVED BY:	T.Kahmann
January 2021	SHEET 7 OF 14

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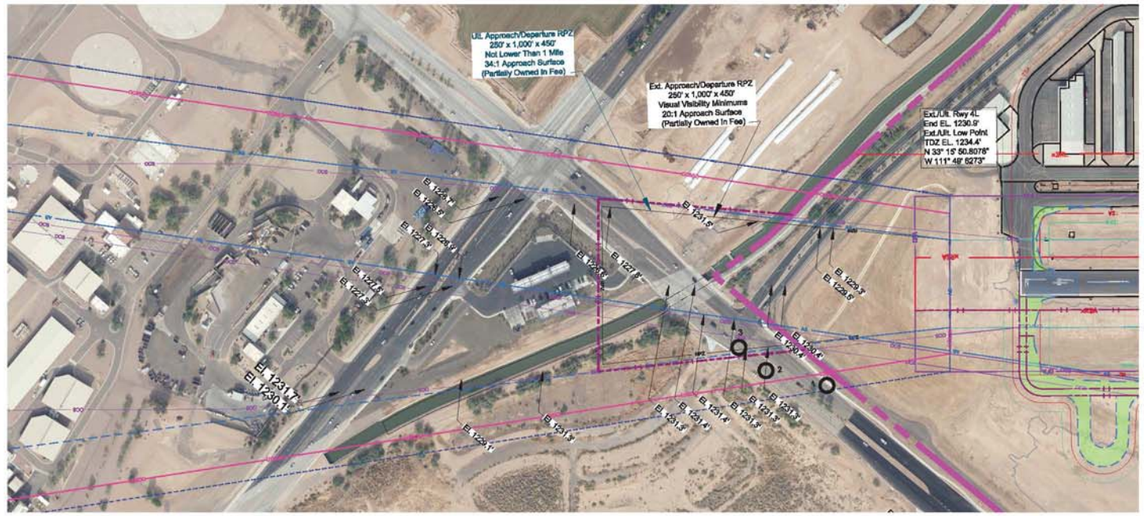

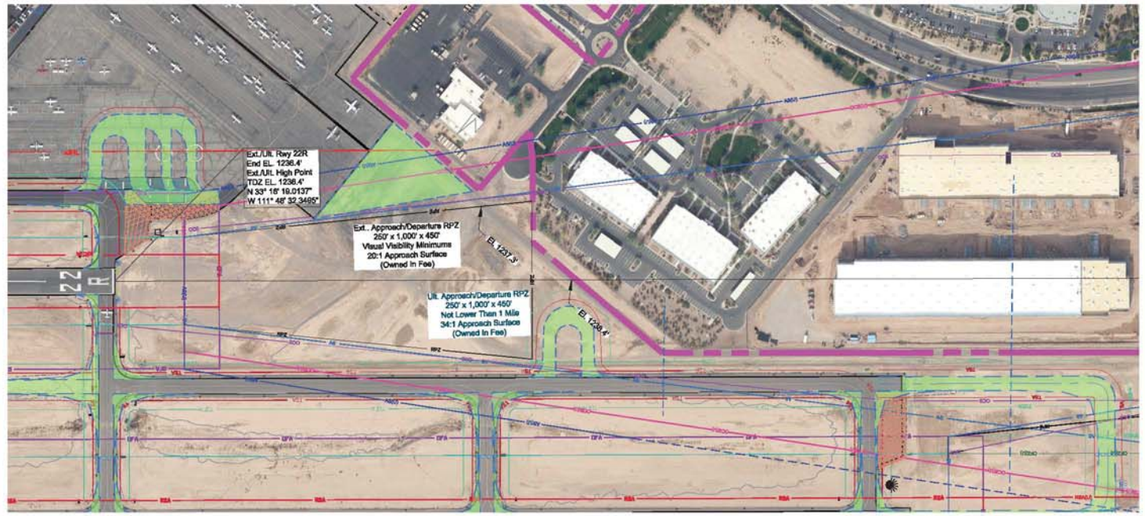

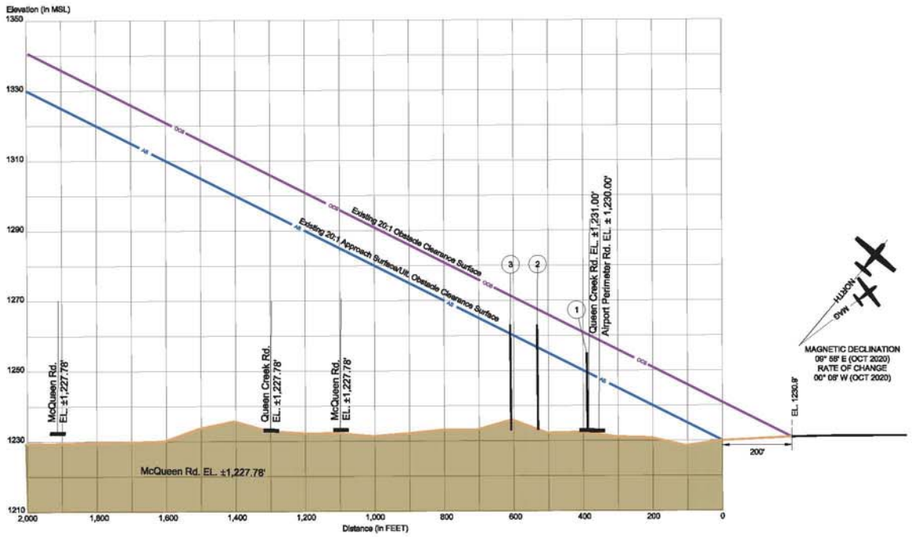

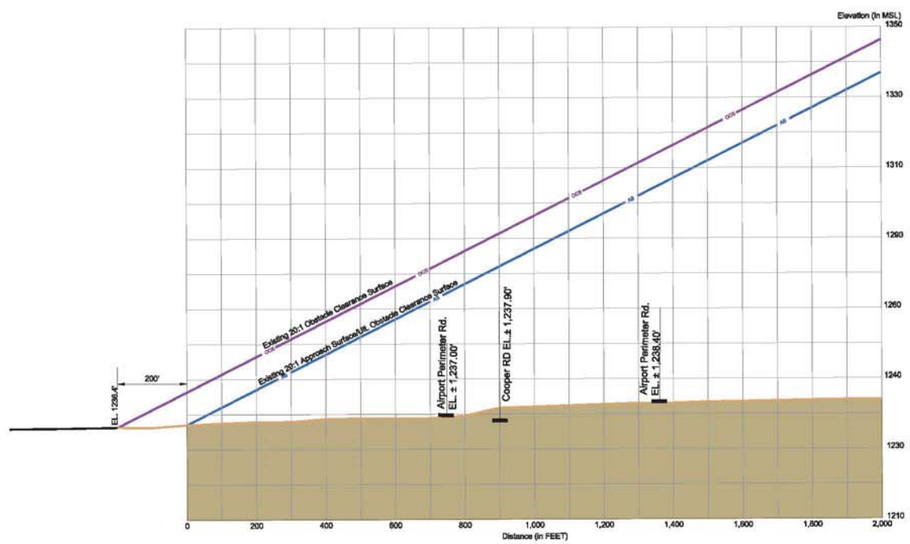

Runway 4L Obstructions									
ID	Feature	Height Above Ground (ft.)	Top Elevation (ft. msl.)	Penetration Values				DOF Object #	Disposition
				Existing 4L Approach	Ultimate 4L Approach	Existing 4L OCS	Ultimate 4L OCS		
1	Pole	26.00	1,255.00	N/A	6.36	N/A	N/A	04-020176	Lower/Relocate
2	Pole	33.00	1,263.00	N/A	5.59	N/A	5.59	04-020606	Lower/Relocate
3	Pole	33.00	1,263.00	1.71	1.71	N/A	1.71	04-020607	Lower/Relocate

Runway 22R Obstructions									
ID	Feature	Height Above Ground (ft.)	Top Elevation (ft. msl.)	Penetration Values				DOF Object #	Disposition
				Existing 4L Approach	Ultimate 4L Approach	Existing 4L OCS	Ultimate 4L OCS		
No Obstructions									

0 200 400
HORIZONTAL SCALE IN FEET

0 20 40
VERTICAL SCALE IN FEET

GENERAL NOTES:

1. GROUND SURVEY DATED AUGUST 12, 2020 BY WOOLPERT.
2. HORIZONTAL DATUM: NORTH AMERICAN DATUM 1983 - NAD83;
   VERTICAL DATUM: NORTH AMERICAN DATUM 1988 - NAVD88
3. OSTRUCTIONS IDENTIFIED BY COFFMAN ASSOCIATES FROM WOOLPERT, DATED AUGUST 12, 2020
4. SUPPLEMENTAL DATA EXAMINED INCLUDE FAA DIGITAL OBSTACLE FILE (DOF).
5. ALL ELEVATIONS IN MSL FEET.

PROFILE VIEW SIGNIFICANT OBJECT PROFILE VIEW: (000)

SIGNIFICANT OBJECT/OBSTRUCTION CALLOUT: o'

NO.	REVISIONS	DATE	BY	APP'D.

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CHANDLER MUNICIPAL AIRPORT (CHD)
INNER PORTION OF THE APPROACH SURFACE DRAWING
RUNWAY 4L-22R
CHANDLER, ARIZONA
DRAFT

PLANNED BY: E. Pfeifer
DETAILED BY: Maggie Beaver
APPROVED BY: T.Kahmann

January 2021 | SHEET 8 OF 14

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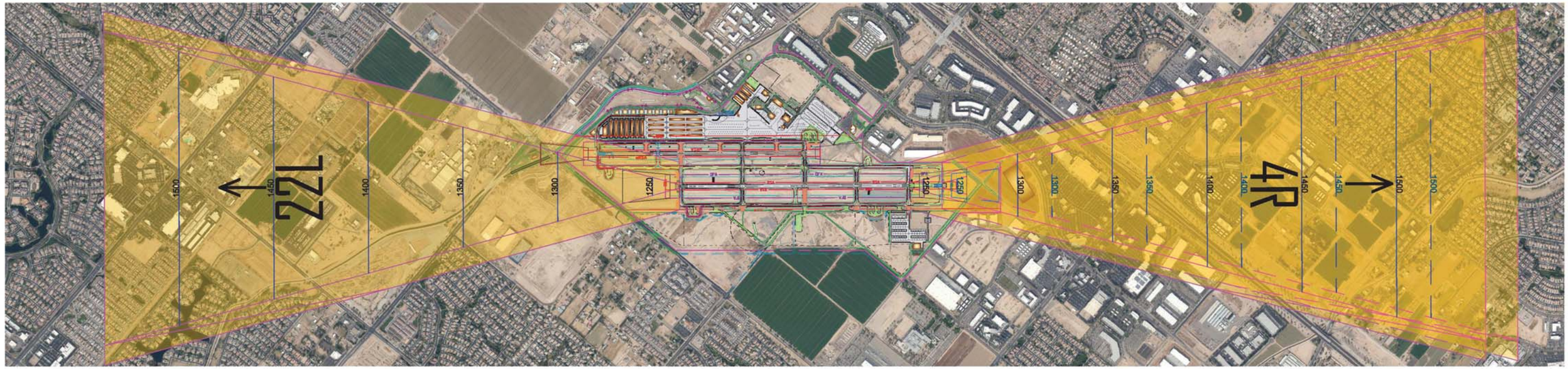
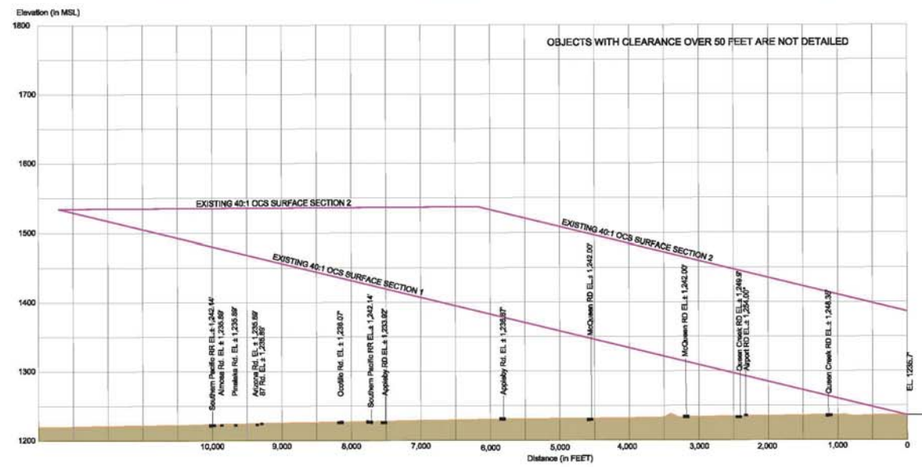
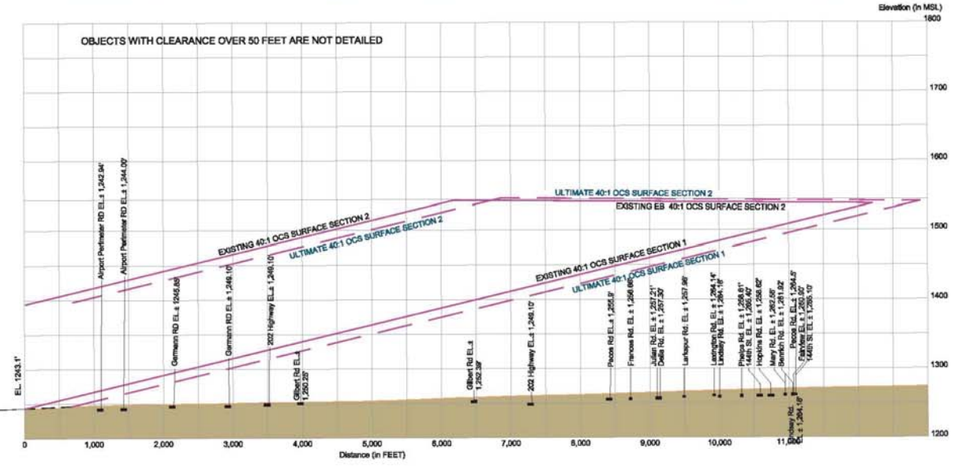




0 1000 2000
HORIZONTAL SCALE IN FEET

0 100 200
VERTICAL SCALE IN FEET



Runway 4R End Departure Obstructions							
ID	Feature	Height Above Ground (ft.)	Top Elevation (ft. msl.)	Penetration Value (ft)		DOF Object #	Disposition
				Existing 22L End Departure	Ultimate 22L End Departure		
No Obstructions							

APPLY STANDARDS SET FORTH IN FAA ORDER 8260.46E DEPARTURE PROCEDURE (DP) PROGRAM.

Runway 22L End Departure Obstructions							
ID	Feature	Height Above Ground (ft.)	Top Elevation (ft. msl.)	Penetration Value (ft)		DOF Object #	Disposition
				Existing 22L End Departure	Ultimate 22L End Departure		
No Obstructions							

APPLY STANDARDS SET FORTH IN FAA ORDER 8260.46E DEPARTURE PROCEDURE (DP) PROGRAM.

Legend

1

Significant Object/Obstruction Callout

Ground Profile

Ultimate Departure

Existing Departure

Profile Ground Composite

GENERAL NOTES:

1. ADDITIONAL DATA SOURCE INCLUDES GROUND SURVEY PREPARED BY WOOLPERT AUGUST 12, 2020.
2. HORIZONTAL DATUM: NORTH AMERICAN DATUM 1983 - NAD83;
   VERTICAL DATUM: NORTH AMERICAN DATUM 1988 - NAVD88.
3. MAGNETIC DECLINATION FROM NOAA NATIONAL GEOPHYSICAL DATA CENTER.
4. OBSTRUCTIONS WITHIN THIS GROUPING REPRESENT TALLEST MANMADE AND/OR NATURAL FEATURE.
5. THE SOLID CABINETRY FACILITY DEPICTED ON THIS DRAWING IS BASED ON A JUNE 2019 PRELIMINARY SITE PLAN. THE OBSTRUCTION EVALUATION WILL BE UPDATED TO REFLECT THE BUILDING'S SURVEYED TOP ELEVATION ONCE CONSTRUCTION IS COMPLETED, AND THAT INFORMATION IS MADE AVAILABLE.

NO.	REVISIONS	DATE	BY	APP'D.

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CHANDLER MUNICIPAL AIRPORT (CHD)

RUNWAY 4R-22L
DEPARTURE SURFACE DRAWING

DRAFT

CHANDLER, ARIZONA

PLANNED BY: E. Pfeifer
DETAILED BY: Maggie Beaver
APPROVED BY: T.Kahmann

January 2021 SHEET 9 OF 14

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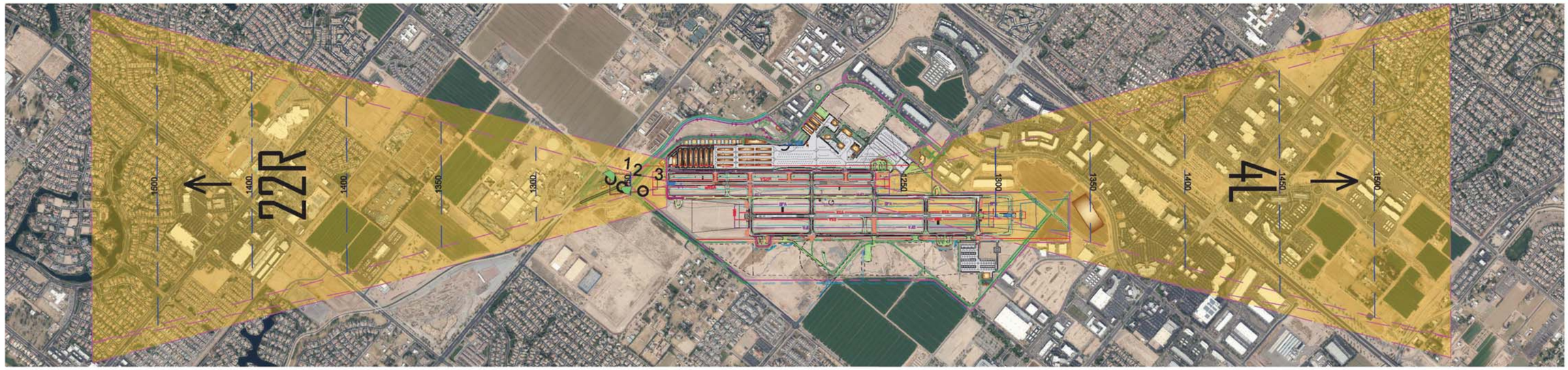

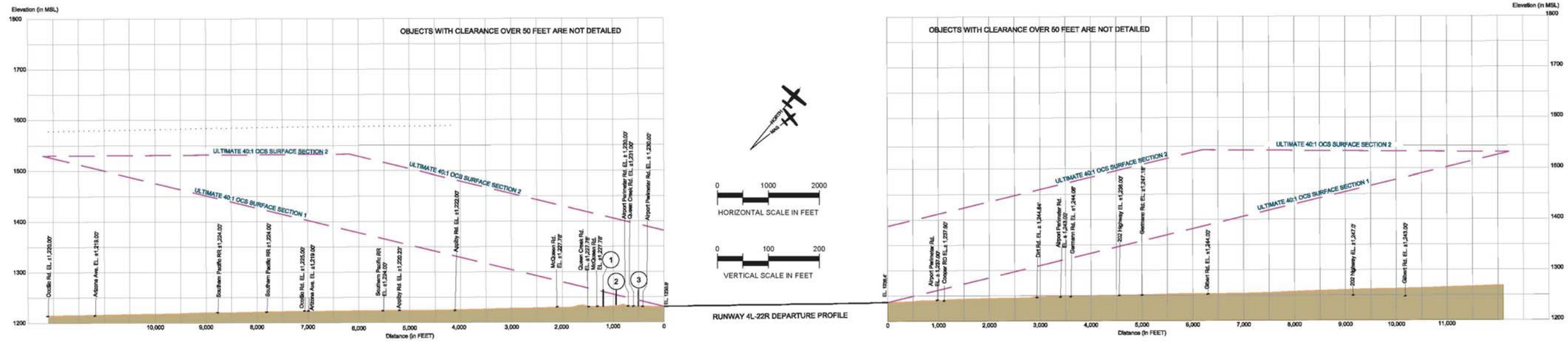

Ultimate Runway 4L End Departure Obstructions

ID	Feature	Height Above Ground (ft.)	Top Elevation (ft. msl.)	Penetration Value (ft)	DOF Object #	Disposition
1	Pole	16.00	1,245.00	1.76	04-020175	Lower/Relocate
2	Pole	35.00	1,264.00	9.56	04-020608	Lower/Relocate
3	Pole	37.00	1,266.00	5.57	04-020609	Lower/Relocate

APPLY STANDARDS SET FORTH IN FAA ORDER 8260.46E DEPARTURE PROCEDURE (DP) PROGRAM

Ultimate Runway 22R End Departure Obstructions

ID	Feature	Height Above Ground (ft.)	Top Elevation (ft. msl.)	Penetration Value (ft)	DOF Object #	Disposition
No Obstructions						

APPLY STANDARDS SET FORTH IN FAA ORDER 8260.46E DEPARTURE PROCEDURE (DP) PROGRAM

Legend

1

1

Significant Object/Obstruction Callout

Obstruction Group

Ground Profile

Ultimate Departure

Profile Ground Composite

GENERAL NOTES:

1. ADDITIONAL DATA SOURCE INCLUDES GROUND SURVEY PREPARED BY WOOLPERT AUGUST 12, 2020.
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4. OBSTRUCTIONS WITHIN THIS GROUPING REPRESENT TALLEST MANMADE AND/OR NATURAL FEATURE.
5. THE SOLLID CABINETRY FACILITY DEPICTED ON THIS DRAWING IS BASED ON A JUNE 2018 PRELIMINARY SITE PLAN. THE OBSTRUCTION EVALUATION WILL BE UPDATED TO REFLECT THE BUILDING'S SURVEYED TOP ELEVATION ONCE CONSTRUCTION IS COMPLETED, AND THAT INFORMATION IS MADE AVAILABLE.

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CHANDLER MUNICIPAL AIRPORT (CHD)

RUNWAY 4L-22R
DEPARTURE SURFACE DRAWING

DRAFT

CHANDLER, ARIZONA

PLANNED BY:	E. Pfeifer
DETAILED BY:	Maggie Beaver
APPROVED BY:	T.Kahmann
January 2021	SHEET 10 OF 14

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LEGEND

EXISTING	ULTIMATE	DESCRIPTION
		AIRPORT PROPERTY LINE
N/A		AVIATION RESERVE
		SECTION CORNERS
		AIRPORT REFERENCE POINT (ARP)
		AIRPORT ROTATING BEACON
		AVIGATION EASEMENT
		SUILDING RESTRICTION LINE (35')
		STRUCTURES ON AIRPORT
		STRUCTURE OFF AIRPORT
N/A		ABANDONREMOVE
		RUNWAY TAXIWAY APRON PAVEMENT
		SHOULDER PAVEMENT
		FENCE LINE
		HOLD MARKING
		ROADS AND PARKING PAVEMENT
		SURVEY MONUMENT WITH IDENTIFIER
		RUNWAY OBJECT FREE AREA
		RUNWAY SAFETY AREA
		RUNWAY OBSTACLE FREE ZONE
		RUNWAY PROTECTION ZONE
		RUNWAY VISIBILITY ZONE
		TAXIWAY OBJECT FREE AREA
		TAXIWAY SAFETY AREA
		TIE-DOWNS
	SAME	PAPI-4
		WINDCONE
		RUNWAY END IDENTIFIER LIGHTS
		TOPOGRAPHIC CONTOURS

ULTIMATE AIRPORT FACILITIES

#	Facility Name	Top Elevation ft. msl*
60	Terminal	1260.00'
61	Airport Operations/Maintenance	1250.00'
62	Relocated Self Service Fuel	1237.00'
63	Self Service Fuel Station	1247.00'

EXISTING AIRPORT FACILITES

#	Facility Name	Top Elevation ft. msl
1	Terminal	1252.39'
2	Chandler Air	1252.92'
3	Chandler Air Fuel Storage	1244.43'
4	Chandler Air/The Hangar Café/Chandler Avionics	1260.88'
5	Chandler Air Service/Southwest	1265.07'
6	Conventioal Hangar	12.53.78'
7	T-Hangar	1256.69'
8	T-Hangar	1256.36'
9	T-Hangar	1248.41'
10	T-Shade	1237.8'
11	ATCT	1317..21'
12	Self Service Fuel	1237.23'
13	Maintenance Building	1245.11'
14	Airport Operations	1256.72'
16	T-Hangars	1253.24'
17	T-Hangars	1243.90'
18	T-Hangars	1247.65
19	T-Hangars	1247.67'
20	T-Hangars	1248.30'
45	Quantum Helicopters	1276.04'
46	Quantum Helicopters	1252.60'
47	Quantum Helicopters	1252.60'

SOLLID CABINETRY

Germann Rd.

Aviation Dr.

S. Cooper Rd.

S. Gilbert Way

E. Ryan Rd.

S. Stinson Way

S. Hellcat Way

Insight Way

Small Aircraft Facilities Development Reserve (±6.2 Acres)

Ext./Ult. Rwy 22R
End EL. 1238.4'
Ext./Ult. High Point
TDZ EL. 1236.4'
N 33° 16' 19.0137"
W 111° 48' 32.3495"

Ult. Approach/Departure RPZ
250' x 1,000' x 450'
Not Lower Than 1 Mile
34:1 Approach Surface
(Owned In Fee)

Ext. Approach/Departure RPZ
250' x 1,000' x 450'
Visual Visibility Minimums
20:1 Approach Surface
(Owned In Fee)

Large Scale SASO/MRO Development Reserve (±15.5 Acres)

Executive Hangar Development Reserve (±4.3 Acres)

Declaration of Environmental Use Restriction Area

Environmental Site to be Redeveloped as Apron/Wash Rack

FBO/SASO Development Reserve (±3.1 Acres)

2,618,612.88 SQ FT

170'

Existing Segmented Circle / Lighted Windcone

Ext. ARP
N 33° 16' 09.85"
W 111° 48' 39.05"

Est. ARP
N 33° 16' 08.77"
W 111° 48' 40.03"

Existing/Ultimate 4,401'x75' Runway 4L-22R N49°34' 44.5"E (True Bearing)

Ultimate 5,500'x75' Runway 4R-22L N49°34' 11.69"E (True Bearing)

Existing 4,870'x75' Runway 4R-22L N49°34' 11.69"E (True Bearing)

Small Aircraft Facilities Development Reserve (±10 Acres)

Mixed Use Reserve (Aviation/Non-Aviation) (±7.6 Acres)

FBO/SASO Development Reserve (±19.5 Acres)

Small Aircraft Facilities Development Reserve (±4.9 Acres)

Environmental Site

Ult. Rwy 22L
End EL. 1242.0'
Ext. High Point
TDZ EL. 1243.1'
N 33° 16' 32.19"
W 111° 48' 01.16"

Ext. Rwy 22L
End EL. 1243.1'
Ext. High Point
TDZ EL. 1243.1'
N 33° 16' 27.8124"
W 111° 48' 07.2947"

Ult. Approach/Departure RPZ
500' x 1,000' x 700'
VISUAL 20:1 APPROACH
(Owned In Fee)

Ext. Approach/Departure RPZ
500' x 1,000' x 700'
VISUAL 20:1 APPROACH
(Owned In Fee)

EL. 1247.8'
EL. 1244.3'
EL. 1245.6'
EL. 1244.8'
EL. 1245.0'
EL. 1244.1'
EL. 1243.3'
EL. 1247.7'
EL. 1243.8'
EL. 1243.7'
EL. 1237.3'
EL. 1238.4'

MAG NORTH

MAGNETIC DECLINATION
06° 58' E (OCT 2020)
RATE OF CHANGE
00° 06' W (OCT 2020)

0 200 400 800
SCALE IN FEET

CHANDLER MUNICIPAL AIRPORT (CHD)

TERMINAL AREA DRAWING - NORTH

DRAFT

CHANDLER, ARIZONA

NO.	REVISIONS	DATE	BY	APP'D.

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PLANNED BY:	E. Pfeifer
DETAILED BY:	Maggie Beaver
APPROVED BY:	T.Kahmann
January 2021	SHEET 11 OF 14

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Airport Consultants
www.coffmanassociates.com

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EXISTING AIRPORT FACILITES

#	Facility Name	Top Elevation ft. msl
1	Terminal	1252.39'
2	Chandler Air	1252.92'
3	Chandler Air Fuel Storage	1244.43'
8	T-Hangar	1256.36'
9	T-Hangar	1248.41'
10	T-Shade	1237.8'
11	ATCT	1317..21'
12	Self Service Fuel	1237.23'
13	Maintenance Building	1245.11'
14	Airport Operations	1256.72'
15	Conventional Hangars	1257.44'
16	T-Hangars	1253.24'
17	T-Hangars	1243.90'
18	T-Hangars	1247.65
19	T-Hangars	1247.67'
20	T-Hangars	1248.30'
21	T-Hangars	1248.51'
22	T-Hangars	1248.08'
23	T-Hangars	1254.43'
24	T-Hangars	1250.56'
25	T-Hangars	1249.05'
26	T-Hangars	1249.05'
27	T-Hangars	1248.62'
28	Conventional Hangar	1256.36'
29	Conventional Hangar	1256.36'
30	Conventional Hangar	1256.58'
31	Conventional Hangar	1256.58'
32	Conventional Hangar	1255.61'
33	Conventional Hangar	1255.50'
34	Conventional Hangar	1255.93'
35	Conventional Hangar	1255.50'
36	Conventional Hangar	1253.89'
37	T-Hangars	1253.03'
38	T-Hangars	1248.73'
39	T-Hangars	1248.19'
40	T-Hangars	1250.45'
41	T-Hangars	1248.84'
42	T-Hangars	1249.48'
43	T-Hangars	1249.81'
44	T-Hangars	1250.13'

ULTIMATE AIRPORT FACILITIES

#	Facility Name	Top Elevation ft. msl*
60	Terminal	1260.00'
61	Airport Operations/Maintenance	1250.00'
62	Relocated Self Service Fuel	1237.00'
63	Self Service Fuel Station	1247.00'

LEGEND

EXISTING	ULTIMATE	DESCRIPTION
		AIRPORT PROPERTY LINE
N/A		AVIATION RESERVE
		SECTION CORNERS
		AIRPORT REFERENCE POINT (ARP)
		AIRPORT ROTATING BEACON
		AVIGATION EASEMENT
		BUILDING RESTRICTION LINE (35')
		STRUCTURES ON AIRPORT
		STRUCTURE OFF AIRPORT
N/A		ABANDON/REMOVE
		RUNWAY,TAXIWAY,APRON PAVEMENT
		SHOULDER PAVEMENT
		FENCE LINE
		HOLD MARKING
		ROADS AND PARKING PAVEMENT
		SURVEY MONUMENT WITH IDENTIFIER
		RUNWAY OBJECT FREE AREA
		RUNWAY SAFETY AREA
		RUNWAY OBSTACLE FREE ZONE
		RUNWAY PROTECTION ZONE
		RUNWAY VISIBILITY ZONE
		TAXIWAY OBJECT FREE AREA
		TAXIWAY SAFETY AREA
		TIE-DOWNS
	SAME	PAPI-4
		WINDCONE
		RUNWAY END IDENTIFIER LIGHTS
		TOPOGRAPHIC CONTOURS

Non-Aviation Development Reserve (±4.5 Acres)

5,616,612.36 SQ FT

Drainage Canal

Non-Aviation Development Reserve - Floodplain Restrictions (±11.4 Acres)

Airport Blvd.

Existing/Ultimate 4,401'x75' Runway 4L-22R Hdg*33° 44.57'E (True Bearing)

Existing 4,670'x75' Runway 4R-22L Hdg*34° 11.89'E (True Bearing)

Existing Segmented Circle /Lighted Windcone

Small Aircraft Facilities Development Reserve (±4.9 Acres)

Environmental Site (±10 Acres)

AWOS and NDB

500'

Executive Hangar Development Reserve (±18.5 Acres)

S. Cooper Rd.

Mixed Use Reserve (Aviation/Non-Aviation) (±8.8 Acres)

Ext/Ult. Rwy 4L
End EL. 1230.9'
Ext./Ult. Low Point
TDZ EL. 1234.4'
N 33° 15' 50.8078"
W 111° 48' 11.8273"

Ext/Ult. Rwy 4R
End EL. 1235.7'
Ext./Ult. Low Point
TDZ EL. 1239.8'
N 33° 15' 56.8084"
W 111° 48' 50.9868"

Ext. Approach/Departure RPZ
250' x 1,000' x 450'
Visual Visibility Mhimums
20:1 Approach Surface
(Partially Owned In Fee)

Ult. Approach/Departure RPZ
250' x 1,000' x 450'
Not Lower Than 1 Mile
34:1 Approach Surface
(Partially Owned In Fee)

Ext/Ult. Approach/Departure RPZ
500' x 1,000' x 700'
Not Lower Than 1 Mile
34:1 Approach Surface
(Owned In Fee)

Queen Creek Rd.

McQueen Rd.

El. 1229.3'
El. 1229.5'
El. 1231.5'
El. 1230.4'
El. 1230.4'
El. 1227.8'
El. 1226.6'
El. 1231.3'
El. 1231.3'
El. 1231.3'
El. 1231.4'
El. 1231.4'
El. 1231.3'
El. 1226.7'
El. 1226.5'
El. 1226.9'
El. 1227.3'
El. 1227.5'
El. 1227.3'
El. 1231.3'
El. 1229.1'
El. 1231.7'
El. 1231.5'
El. 1230.2'
El. 1232.9'
El. 1232.9'

NO.	REVISIONS	DATE	BY	APP'D.

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CHANDLER MUNICIPAL AIRPORT (CHD)

TERMINAL AREA DRAWING -SOUTH

DRAFT

CHANDLER, ARIZONA

PLANNED BY: E. Pfeifer
DETAILED BY: Maggie Beaver
APPROVED BY: T.Kahmann

January 2021 | SHEET 12 OF 14

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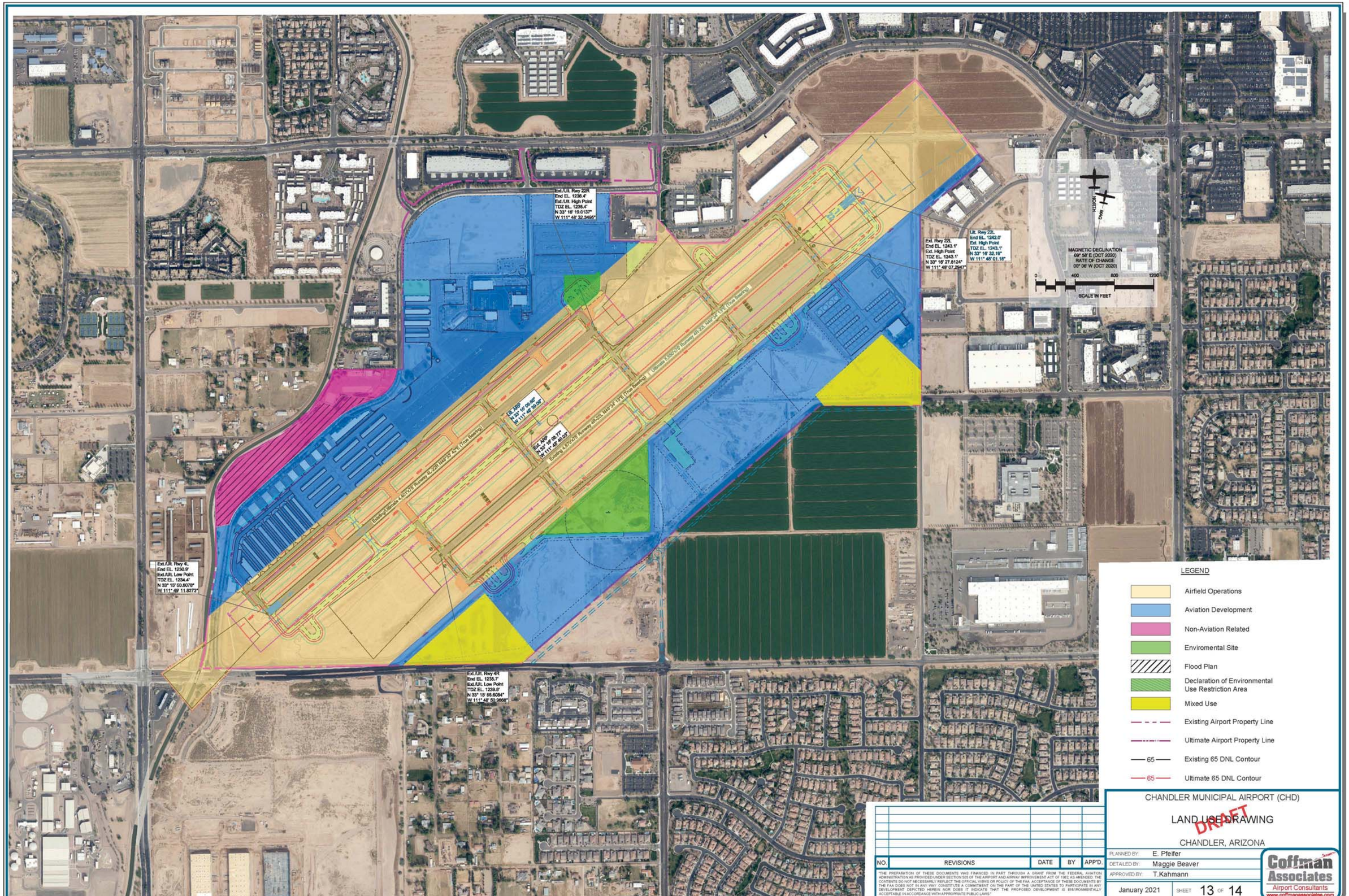

CHANDLER MUNICIPAL AIRPORT (CHD)

LAND USE DRAWING

DRAFT

CHANDLER, ARIZONA

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PLANNED BY:	E. Pfeifer
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January 2021	SHEET 13 OF 14

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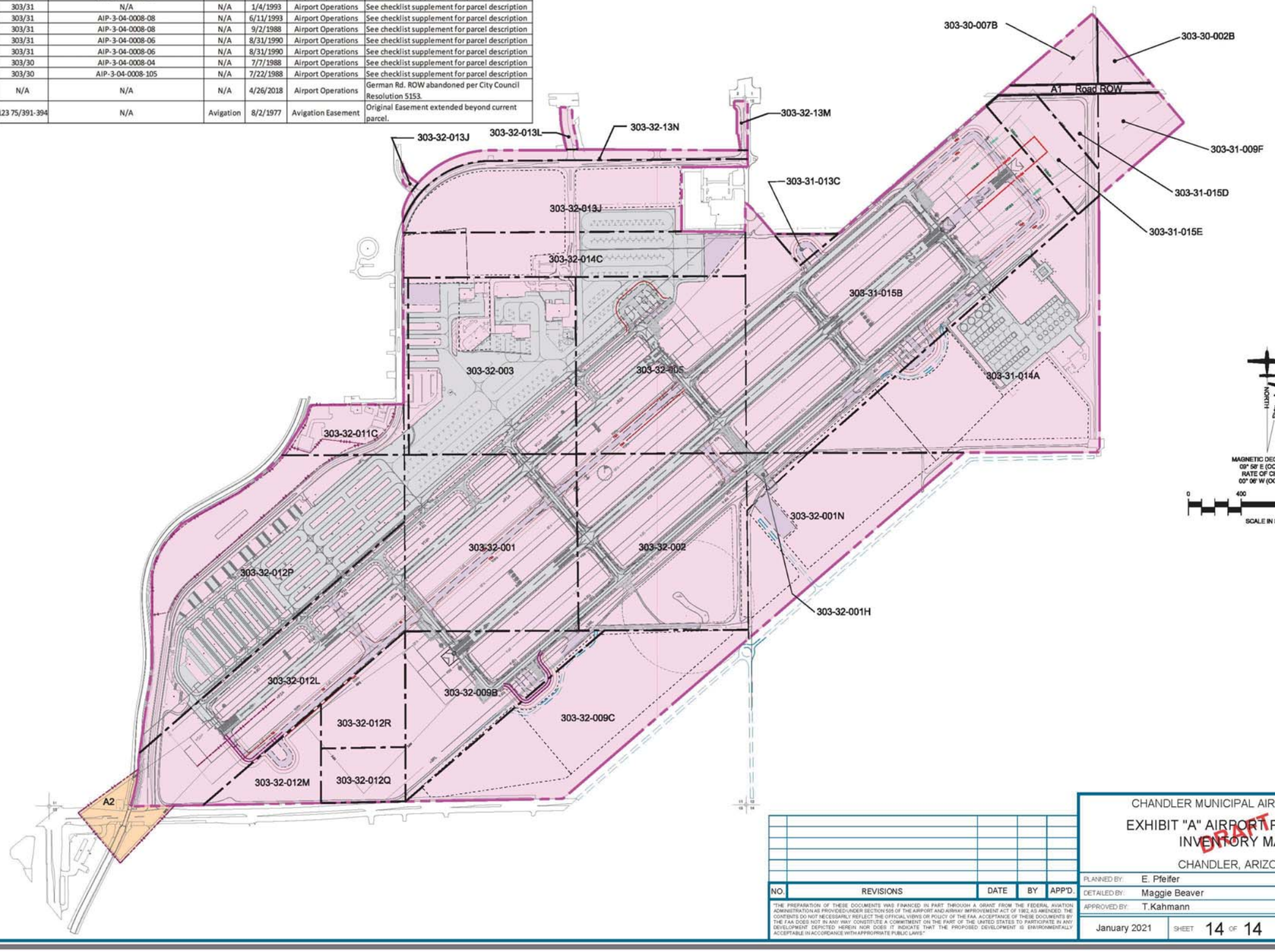
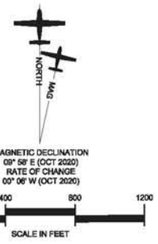
Tract ID	Parcel ID	Grantor	Interest Type	Acreage	Instrument	Book/Page	FAA Grant #	Easement	Date	PurposeofAcquisition	Notes
1	303-32-001	State of Arizona	Fee Simple	40	Warranty Deed	303/32	FAAP 9-02-008-6604	N/A	5/28/1948	Airport Operations	See checklist supplement for parcel description
2	303-32-002A	State of Arizona	Fee Simple	39	Warranty Deed	303/32	FAAP 9-02-008-6604	N/A	5/28/1948	Airport Operations	See checklist supplement for parcel description
3	303-32-003E	State of Arizona	Fee Simple	38.96	Warranty Deed	303/32	FAAP 9-02-008-6604	N/A	5/28/1948	Airport Operations	See checklist supplement for parcel description
4	303-32-005A	State of Arizona	Fee Simple	39	Warranty Deed	303/32	FAAP 9-02-008-6604	N/A	5/28/1948	Airport Operations	See checklist supplement for parcel description
5	303-32-009B	John Demetria LTD.	Fee Simple	21.043	Warranty Deed	303/32	AIP-3-04-0008-04	N/A	3/31/1988	Airport Operations	See checklist supplement for parcel description
6	303-32-009C	Airpark Associates LTD.	Fee Simple	35.702	Warranty Deed	303/32	AIP-3-04-0008-09	N/A	1/26/1994	Airport Operations	See checklist supplement for parcel description
7	303-32-011H	Roosevelt Water Conservation District	Fee Simple	6.625	Warranty Deed	303/32	N/A	N/A	10/24/1985	Airport Operations	See checklist supplement for parcel description
8	303-32-012L	Roosevelt Water Conservation District	Fee Simple	31.8	Warranty Deed	303/32	AIP-3-04-0008-01	N/A	1/27/1975	Airport Operations	See checklist supplement for parcel description
9	303-32-012M	Queen Creek Trust	Fee Simple	7.83	Warranty Deed	303/32	AIP-3-04-0008-03	N/A	9/6/1987	Airport Operations	See checklist supplement for parcel description
10	303-32-012Q	D.J. Patterson	Fee Simple	6	Warranty Deed	303/32	AIP-3-04-0008-07	N/A	12/31/1986	Airport Operations	See checklist supplement for parcel description
11	303-32-012R	D.J. Patterson	Fee Simple	8.914	Warranty Deed	303/32	ADAP-5-04-0008-02	N/A	12/31/1986	Airport Operations	See checklist supplement for parcel description
12	303-32-012X	Roosevelt Water Conservation District	Fee Simple	44.834	Warranty Deed	303/32	AIP-3-04-0008-06	N/A	3/3/1986	Airport Operations	See checklist supplement for parcel description
13	303-32-013J	AJ Chandler Air Park LLC	Fee Simple	24.65	Warranty Deed	303/32	AIP-3-04-0008-11 ADOT E1135, ADOT E1102	N/A	5/29/2002	Airport Operations	See checklist supplement for parcel description
14	303-32-013K	AJ Chandler Air Park LLC	Fee Simple	0.21	Warranty Deed	303/32	AIP-3-04-0008-11 ADOT E1135, ADOT E1102	N/A	5/29/2002	Airport Operations	See checklist supplement for parcel description
15	303-32-013L	AJ Chandler Air Park LLC	Fee Simple	0.71	Warranty Deed	303/32	AIP-3-04-0008-11 ADOT E1135, ADOT E1102	N/A	5/29/2002	Airport Operations	See checklist supplement for parcel description
16	303-32-013M	AJ Chandler Air Park LLC	Fee Simple	0.43	Warranty Deed	303/32	AIP-3-04-0008-11 ADOT E1135, ADOT E1102	N/A	5/29/2002	Airport Operations	See checklist supplement for parcel description
17	303-32-013J	AJ Chandler Air Park LLC	Fee Simple	2.11	Warranty Deed	303/32	AIP-3-04-0008-11 ADOT E1135, ADOT E1102	N/A	5/29/2002	Airport Operations	See checklist supplement for parcel description
18	303-32-014C	D.W. Patterson	Fee Simple	19.536	Warranty Deed	303/32	AIP-3-04-0008-06	N/A	1/4/1993	Airport Operations	See checklist supplement for parcel description
19	303-31-001R	Spitler	Fee Simple	1.464	Warranty Deed	303/31	AIP-3-04-0008-03	N/A	11/2/1987	Airport Operations	See checklist supplement for parcel description
20	303-31-001S	R&E Farms	Fee Simple	22.076	Special Warranty Deed	303/31	AIP-3-04-0008-08	N/A	9/12/1994	Airport Operations	See checklist supplement for parcel description
21	303-31-009F	Chandler Airpark Limited Parnership	Fee Simple	6.971	Warranty Deed	303/31	AIP-3-04-0008-04	N/A	6/10/1988	Airport Operations	See checklist supplement for parcel description
22	303-31-013C	C. Max Killian	Fee Simple	1.72	Special Warranty Deed	303/31	N/A	N/A	1/4/1993	Airport Operations	See checklist supplement for parcel description
23	303-31-014A	D.W. Patterson	Fee Simple	46.589	Special Warranty Deed	303/31	AIP-3-04-0008-08	N/A	6/11/1993	Airport Operations	See checklist supplement for parcel description
24	303-31-015F	D.W. Patterson	Fee Simple	70	Warranty Deed	303/31	AIP-3-04-0008-08	N/A	9/2/1988	Airport Operations	See checklist supplement for parcel description
25	303-31-015D	D.W. Patterson	Fee Simple	3	Warranty Deed	303/31	AIP-3-04-0008-06	N/A	8/31/1990	Airport Operations	See checklist supplement for parcel description
26	303-31-015E	D.W. Patterson	Fee Simple	6.728	Warranty Deed	303/31	AIP-3-04-0008-06	N/A	8/31/1990	Airport Operations	See checklist supplement for parcel description
27	303-30-002B	Exeter Real Estate Investors	Fee Simple	2.416	Warranty Deed	303/30	AIP-3-04-0008-04	N/A	7/7/1988	Airport Operations	See checklist supplement for parcel description
28	303-30-007B	D.W. Patterson	Fee Simple	4.16	Warranty Deed	303/30	AIP-3-04-0008-105	N/A	7/22/1988	Airport Operations	See checklist supplement for parcel description
A1	A1	City Of Chandler	Fee Simple	1.74	City Council Resolution	N/A	N/A	N/A	4/26/2018	Airport Operations	German Rd. ROW abandoned per City Council Resolution 5153.
A2	A2	Roosevelt Water Conservation District	Easement	4.18	Avigation Easement	123 75/391-394	N/A	Avigation	8/2/1977	Avigation Easement	Original Easement extended beyond current parcel.

GENERAL NOTES:

1. APN's used as tract ID's on previous ALP Exhibit "A". New ID's of A1 and A2 were created for this version.
2. Parcel descriptions are on an attachment to the SOP 3.0 Checklist.





Legend

- Existing Property
- Existing Avigation Easement
- Parcel Lines

NO.	REVISIONS	DATE	BY	APP'D.

"THE PREPARATION OF THESE DOCUMENTS WAS FINANCED IN PART THROUGH A GRANT FROM THE FEDERAL AVIATION ADMINISTRATION AS PROVIDED UNDER SECTION 505 OF THE AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982, AS AMENDED. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THESE DOCUMENTS BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED HEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS."

CHANDLER MUNICIPAL AIRPORT (CHD)

EXHIBIT "A" AIRPORT PROPERTY INVENTORY MAP

DRAFT

CHANDLER, ARIZONA

PLANNED BY:	E. Pfeifer
DETAILED BY:	Maggie Beaver
APPROVED BY:	T.Kahmann
January 2021	SHEET 14 OF 14

Coffman Associates
Airport Consultants
www.coffmanassociates.com

Coffman Associates C:\Users\Maggie Beaver\Coffman Associates Inc\Coffman - ep_CAD\Maggie\CAD\CHANDLER\60200\ALP SET\14 CHD PROP 01 2021.dwg Printed Date: 3-30-21 04:05:13 PM Maggie Beaver

ITEM 4

CHANDLER arizona
Community of Innovation

City Council Memorandum **City Clerk's Office** **Memo No.** 21-008

Date:	April 19, 2021
To:	Mayor and Council
From:	Dana DeLong, City Clerk
Subject:	March and April 2021 City Council Minutes

Proposed Motion:

Move to approve the Council meeting minutes of the Special Meeting - Retreat of March 4 and 5, 2021, Study Session of April 5, 2021, and the Work Session, and Regular Meeting of April 8, 2021.

Background/Discussion

Attached for approval are the City Council minutes for the meetings held on March 4 and 5, 2021, and April 5 and 8, 2021.

Attachments

March 4, 2021 Special Meeting - Retreat Minutes
March 5, 2021 Special Meeting - Retreat Minutes
April 5, 2021 Study Session Minutes
April 8, 2021 Work Session Minutes
April 8, 2021 Regular Meeting Minutes

unofficial

CHANDLER CITY COUNCIL
SPECIAL MEETING - RETREAT
Thursday, March 4, 2021

MINUTES OF THE SPECIAL MEETING - RETREAT OF THE HONORABLE MAYOR AND CITY COUNCIL OF THE CITY OF CHANDLER, ARIZONA, held on Thursday, March 4, 2021, in the Chandler Public Safety Training Center, 3550 S. Dobson Rd, Chandler, Arizona.

THE MEETING WAS CALLED TO ORDER BY MAYOR KEVIN HARTKE AT 2:07 P.M.

The following members of the Council were present:

Kevin Hartke	Mayor
Mark Stewart	Vice-Mayor
René Lopez	Councilmember
OD Harris	Councilmember
Terry Roe	Councilmember
Christine Ellis	Councilmember
Matt Orlando	Councilmember

City staff present: Joshua Wright, Acting City Manager; Kelly Schwab, City Attorney; Dana DeLong, City Clerk; Debra Stapleton, Assistant City Manager; Matthew Burdick, Communications and Public Affairs Director

1. Welcome and Introductions – Mayor Kevin Hartke

MAYOR HARTKE thanked Council for attending and said the Strategic Framework has been beneficial for Council and for staff the past few years in order to clarify the goals of Council. Mayor Hartke introduced Patrick Ibarra, with The Mejorando Group and said Mr. Ibarra would be the facilitator for the Retreat.

PATRICK IBARRA provided an outline of the retreat. Mr. Ibarra said he has worked with many cities to assist navigating the future and build a strong community. Mr. Ibarra said strategic planning is a roadmap for the future and be a way to be proactive about major initiatives. Some of the top topics in all cities of all sizes that are discussed have been homelessness and affordable housing. Mr. Ibarra said time is the most important thing the City has and the plan helps give staff direction on what to accomplish with their time.

2. Discussion regarding the accomplishments and outcomes realized from Good Government and the role of the City.

MR. IBARRA presented the following document to lead discussion regarding these topics.

Attributes of Exceptional Councils

- Leading public organizations and governing with colleagues on a council is a challenging art of community service. The Institute recognizes that many aspects of leadership and governance are not intuitive. This piece is intended to provide councilmembers and city managers insight into the attributes of exceptional councils as well as provide practical tips to help them become exceptional.
- 1. Exceptional councils develop a sense of team – a partnership with the city manager to govern and manage the city
    - The mayor, councilmembers and city manager see themselves and work as a team as they undertake a series of tasks to further their common purpose. The individual team members work in a coordinated and collaborative manner with a high degree of respect, trust and openness. The team values diversity in style and perspective. The team thinks and acts strategically as it examines issues/situations and decides on a course of action serving their city's mission and goals.
    - Key Characteristics
        - Successfully transition from candidate to a member of the council.
        - Become a champion of the city. Make decisions based on the needs and interests of the community at-large / the greater good.
        - Develop, communicate and support policy goals and council decisions.
        - Demonstrate a willingness to work collaboratively (as a team) and have a citywide perspective.
    - Best Practice Tips
        - Build capacity to create a more effective team. The governance team (mayor, councilmembers and city manager) should get to know each other; how each person approaches issues, decision making style and so on. This can be accomplished at annual meetings or workshops through-out the year. In the event that councilmembers disagree, clear ground rules (norms of behavior and practice) can help quell acrimony before it becomes a problem. It's important to remember that trust is built around understanding and respect, not necessarily agreement.
- 2. Exceptional councils have clear roles and responsibilities that are understood and adhered.
    - Exceptional councils understand their role is to serve as policy maker - to represent the values, beliefs and priorities of their community while serving in the community's best interest. They carry out a variety of responsibilities including: developing and adopting a vision for the city; focusing and aligning plans, policies, agreements and budgets in furtherance of this vision; and holding themselves and the city manager accountable for results.
    - Exceptional councils understand that the city manager is responsible for the day-to-day operations of the city. The city manager is responsible for undertaking and accomplishing the policy objectives of the council. Exceptional councils recognize the subject matter expertise of staff and utilize their knowledge and experience to guide and inform decision making.
    - Key Characteristics
        - Understand the role of local government and their responsibilities.

        - Know their role- to set vision and policy, avoid micromanagement.
        - Councilmembers should strive to be informed about the issues facing the city and be prepared to ask questions of staff and each other.
    - Best Practice Tips
        - Create a shared understanding of the city manager's role and the council's expectations to optimize the working relationships. This shared understanding is informed by local charter and ordinance provisions that provide the overall framework for the relationship. The council should make time to have conversations during retreats and or study sessions to define and/or reveal and refine their role and responsibilities. Since role clarity between the city council and city management is critical to mutual success, having clear protocols helps avoid misunderstandings.
- 3. Exceptional councils honor the relationship with staff and each other
    - Exceptional councils understand that a good working relationship with staff is vital for the city to be run successfully. Exceptional councils treat each other and staff with dignity and respect. They act with civility and a high level of professional decorum. Councilmembers build trust by not playing the "gotcha game" and strive to have a no secrets, no surprises approach as an operating norm. Finally, they respect the diversity of styles and perspectives among their colleagues and staff and are open to new ideas.
    - Key Characteristics
        - Councilmembers have the ability to respectfully disagree (to disagree without being disagreeable). They are able to leave it at the dais; debates are about policy, not personality.
        - Exceptional councilmembers reflect positive decorum/model of leadership by providing respectful tone with colleagues.
        - Establish a set of behaviors ahead of time, potentially documented in a code of conduct, to help promote civility and respect.
    - Best Practice Tips
        - Set council priorities and strategic goals at an annual meeting; these goals and priorities are a tool to guide the city manager and staff on where to focus their efforts. This annual meeting provides time for the council to reflect on community priorities as well as offer an opportunity to discuss their decorum and their relationship among each other and the relationship between the city manager/staff and the council.
- 4. Exceptional councils routinely conduct effective meetings
    - Open and public meetings are central to democratic decision-making. Exceptional councils master the art of effective meetings. They develop and adhere to meeting protocols and processes. They spend time planning and organizing the agenda with the aim of having a more focused meeting. They allocate the council's time and energy appropriately (focused on the council's role and responsibilities) and meeting short- and long-term priorities. They honor the public's participation and engagement and they generally start on time and are held during reasonable hours.
    - Exceptional councils use public meetings not only for their intended purpose, information sharing and decision-making, but they also use the meeting to demonstrate respect and civility for each other, staff and the public. Exceptional councilmembers prepare in advance

of the meeting, remain focused on the city goals and objectives and mindful of their role and responsibilities.

- Key Characteristics
  - Councilmembers are respectful of each other, the public and everyone's time.
  - Councilmembers use engaging body language as a way to demonstrate respect.
  - Issues are not personalized, thoughtful dialogue is the objective.
  - Agenda packets are read, councilmembers come prepared and have an open mind
  - Respect is demonstrated for varied opinions.
  - Everyone strives to be civil and act with decorum.
- Best Practice Tips
  - Develop and adopt (with regular reviews and updates), guidelines for conducting meetings and making decisions. These governance protocols typically address meeting procedures (agenda preparation, how to put issues on the agenda, debate and voting procedures (parliamentary rules) and standards of decorum (civility)). As part of a regular self-assessment, councils should evaluate their meetings and their effectiveness and adjust behavior and practices for better results.

- 5. Exceptional councils hold themselves and the city accountable
  - Exceptional councils operate openly, ethically and work to engage the community in a myriad of decisions impacting the prosperity and well-being of their community. Toward that end, exceptional councils consistently provide short- and long-term strategic direction and goals, as well as provide budget, program and policy oversight.
  - Exceptional councils hold themselves accountable for the conduct, behavior and effectiveness of the council. They establish clear priorities and goals and hold the city manager accountable for results. And finally, they embrace accountability as a process and tool to calibrate ongoing efforts to address and meet policy and program objectives.
  - Key Characteristics
    - Councilmembers operate ethically and with integrity.
    - Councils conduct team building / goal setting exercise to track progress towards mutually agreed upon goals
    - Councils taking responsibility for the results (good and bad).
    - Councils celebrate success.
    - Councilmembers hold themselves responsible for adhering to operating protocols and codes of conduct.
  - Best Practice Tips
    - Annually evaluate council and city manager performance toward achieving the city's priorities and goals (consider having this be part of an annual goal setting meeting). Council should consider assessing its own behavior and effectiveness as part of its annual self-assessment.
- 6. Exceptional councils have members who practice continuous personal learning and development
  - Governance is not intuitive. In addition, the policy and economic environment impacting cities are ever changing. Exceptional councils continually provide the opportunity to build their knowledge and skills, to enhance their understanding of key issues, increase their awareness of best practices and sharpen their leadership and governance skills.
  - KEY CHARACTERISTICS

- Stay informed on key issues
- Gain key insights and knowledge on all aspects of governing, from budgets to plans and everything in between.
- Learning to listen is sometimes more important than learning to give a speech.

- BEST PRACTICE TIPS
  - Seek out national, state and local professional growth and educational opportunities. These opportunities can focus on the nuts and bolts of governing to helping you gain valuable information and/or insights on key policy issues facing your city. In addition, city run orientations for newly elected officials provide a good way to acclimate new members to the council's norms and protocols as well as the budget and key policy issues.

COUNCIL had a discussion regarding good government, the benefits of good government, and what that meant to them.

3. Discussion regarding the roles of Mayor, Council, City Manager, City staff and community.

MR. IRBARRA asked the Council for ideas regarding these roles and what each position should bring.

COUNCIL had discussion regarding the role of the Mayor, Council, City Manager, City staff, and the community.

THE MEETING RECESSED AT 3:13 P.M.
THE MEETING RECONVENED AT 3:26 P.M. ALL PRESENT.

4. Discussion and identification of Strategies for Creating a More Credible, Effective Governing Body.

MR. IBARRA continued discussion regarding strategies for effective government and shared best practices.

5. Update by Acting City Manager on 2020 Accomplishments

JOSHUA WRIGHT, Acting City Manager, presented the following Power Point presentation.

- 2020 Annual Report
- Our Vision
  - We are a world-class city that provides an exceptional quality of life
- Our Brand
  - A safe community that connects people, chooses innovation and inspires excellence.
- Our Goals
  - City Council Strategic Policy Goals
  - Being the most connected City
  - Being a leader in trust and transparency
  - Maintaining fiscal sustainability

  - Attracting a range of private sector businesses
  - Fostering a contemporary culture that embraces unity
  - Being safe and beautiful
- Strategic Framework Focus Areas
  - Infill and Redevelopment
  - Innovation and Technology
  - Mobility
  - Neighborhoods
  - Quality of Life
- Infill and Redevelopment
  - Office, Industrial and Medical Center Development
  - Allred Park Place expansion will add 300,000 square feet of office with room for 1,800 jobs.
  - Banner Ocotillo Medical Center expects to handle 21,000 emergency visits annually.
  - Modernization of buildings known as the Alexander and Johnathan creates 220,000 square feet of creative office space in downtown.
  - $437 million in capital investments over the next three years
  - 2,550 jobs over the next three years
  - 891,394 square feet of office, industrial and flex space
  - 750,000 square feet of space under construction
- Infill and Redevelopment
  - Expanded Development
  - 4,228 Building Permits
  - Exceeding $1.1 Billion in Value
  - 72% Increase Over the Prior Year
- Innovation and Technology
  - Adapting Services and Public Meetings
  - Mobile Workforce
    - Chandler's enhanced technology infrastructure enabled a mobile workforce to deliver services online and by appointment.
  - eAgenda
    - A technology project modernized the City Council agenda and process to place items on the agenda.
  - Virtual Public Meetings
    - Virtual Public Meetings enabled residents to provide input that shaped master planning projects.
  - 100 City Council Meetings Conducted in 2020
  - 591 Public Comments Submitted Online
  - 121 Board and Commission Meetings Offered via Webex
- Innovation and Technology
  - Communications and Utility Services
  - Improved Communications Services
    - Cox accelerated Gigablast installations to support remote work and virtual learning.
  - Chandler's Fiber-optic Network
    - Made improvements to the City's fiber-optic network and identify future investments citywide.

  - Partnership with Verizon
    - 6 miles of conduit for fiber-optic use
    - City Smart Parking project in downtown
    - 133 Small Wireless Facilities built
  - Relief Funds for Mobile Hotspots
    - City Council allocated $250,000 in coronavirus relief funds to CUSD to purchase 1,000 mobile hotspots.
  - Voters approved the 25-year franchise agreement with Southwest Gas negotiated by the City
- Mobility
  - Traffic Signal Systems
  - Received $6.67 million in Transportation Grants
  - 160 Capital Improvement Projects Contracts Valued at $60,822,575
  - 54 bus stops
  - 3 bus routes
  - 1 partnership going the extra mile
  - First-Mile, Last-Mile
    - Partnership with Lyft expanded transit service in south Chandler, avoiding costs of adding new bus routes.
  - Street Improvements
    - Completion of three street widening projects improved the arterial street network in southeast Chandler.
  - Traffic Signal Systems
    - New video detection cameras installed at 40 intersections, emerging technologies project on Chandler Blvd used artificial intelligence to adjust traffic signal timing in real-time based on demand.
- Mobility
  - Chandler Airport
  - Airport Master Plan Update
    - Stakeholders worked to recommended a vision and facility plan for the airport.
  - Airport Upgrades
    - Pavement rehab at heliport and Runway 4R-22L
    - Upgrade airport gates and access control system
    - Airport maintenance requests can now be made through City's website and mobile app
- Neighborhoods
  - Preserving Chandler Neighborhoods
  - 38,416 Square Feet of Graffitti Removed
  - 16,042 Code Inspections Conducted
  - 29 Neighborhood Grants Awarded
  - 324 Registered Neighborhoods
  - First-time residents completed the Census online, by phone and mail
  - Innovative community outreach by Complete Count Committee.
  - Updates to City code and ordinances to maintain and preserve Chandler neighborhoods
  - New software and mobile technology for code inspections

  - Developed framework for investments in aging neighborhoods
  - Amazon donation to address neighborhood preservation needs of seniors
- Neighborhoods
  - Opened Housing Choice Voucher program and added 4,000 applications to waitlist
  - Updated Section 8 voucher program and implemented online public housing portal
  - Incentive program attracted new landlords for the Housing Choice Voucher program
  - Distributed 3,000 books supporting Public Housing Authority Book Rich Environment
- Quality of Life
  - Arts, Culture and Events
  - Community Services
  - Public Safety
- Quality of Life: Arts, Culture and Events
  - Chandler Center for the Arts Season Concluded with:
    - $1.7 million in ticket sales
    - 61,709 paid admissions
    - $329,000 from grants and sponsorships
- Quality of Life: Arts, Culture and Events
  - Chandler Museum, Galleries and Public Art
  - Formation of Chandler Museum Foundation
  - Opened Museum Store
  - Virtual Arts and Culture
  - 3,000 in-person attendance
  - Vision Kids classes attended by 800 students
  - Hosted 11 gallery exhibits
  - Hosted 9 receptions
- Quality of Life: Community Services
  - Chandler Public Library
  - Hold limit increased to 25
  - Acquired digital materials
  - Access to global magazine/newspaper database
  - 781,303 physical items
    - 43% decrease over the same period in 2019 Library closed for 2 months in 2020 with no physical item checkout
  - 349,035 cloud Library
    - 32% increase over the same period in 2019
  - 28,851 digital magazines
    - Flipster and PressReader
  - 24,087 streaming movies
    - 92% increase over the same period in 2019
  - 3,260 eCards issued
    - 39% increase over the same period in 2019
  - 4 Library Services & Technology Act Grants totaling more than $42,000
  - 2 Arizona State Library Grants $8,500 for 250 books and audio titles
- Quality of Life: Community Services
  - Parks, Recreation and Aquatics

  - Rec At Home
  - Aquatics Water Safety
  - Park Improvements
  - 15 Tennis Center Courts resurfaced
  - 9,000 children and adults taught to swim
  - 2,853 park maintenance work orders completed
- Quality of Life: Public Safety
  - Chandler Police Department
  - 303,875 non-emergency calls
  - 189,172 emergency 911 calls
  - 35,439 alarms
  - 4,694 non-emergency texts
  - 82 texts to 911
  - Expanded Body-worn Cameras
  - Public Safety Training Center
  - Roll-out of Mobile Devices
  - How Calls Were Cleared
    - 191,987 General Offense
    - 97,761 Verbal Warnings
    - 35,949 Civil Citations
    - 29,688 False Alarms
    - 21,139 Motorist Assist
    - 13,041 Written Warning
- Quality of Life: Public Safety
  - Fire and Emergency Medical Services
  - $170,000 in Fire Grants
  - Three New Aerial Ladder Trucks
  - American Heart Association Lifeline Award
  - First Regional Fire Training Academy and Paramedic Training Site
  - COVID-19
    - 36,000 vaccines
    - 19,300 surgical masks
    - 177,520 gloves
    - 9,800 gowns

MAYOR HARTKE said these goals have provided staff with flexibility over the last two years and asked Council if these five areas were ones Council wanted to continue to move forward with.

VICE MAYOR STEWART asked if Public Safety should be its own since it gets hidden in Quality of Life.

MR. WRIGHT said this was discussed previously and it was felt public safety was a core competency of Quality of Life and there were not many initiatives at the time to have its own.

MAYOR HARTKE said it was placed there because of its initiatives not necessarily its value.

MR. WRIGHT said yes.

COUNCILMEMBER LOPEZ suggested public safety be highlighted in the forefront of the Quality of Life category.

VICE MAYOR STEWART said there was an internal and external brand of the plan.

MAYOR HARTKE said he was supportive of the idea.

COUNCILMEMBER ORLANDO said he was supportive of keeping it with Quality of Life or making it its own category.

COUNCILMEMBER ELLIS said public safety has taken the brunt of the work done with COVID-19 and no one has really understood how much they have been doing to keep the community safe. Councilmember Ellis said the quality of life that people have had during COVID-19 has been because public safety was able to deliver services in a timely manner even when detrimental to their own health.

MAYOR HARTKE asked both ideas be an option for the March 5 discussion.

COUNCILMEMBER HARRIS said diversity and inclusion has been a discussion topic and suggested that be highlighted as well. Councilmember Harris said Chandler embraces everyone and that is what also brings companies to the City.

MAYOR HARTKE said that idea should be placed on the March 5 discussion.

COUNCILMEMBER ORLANDO said he would like more clarification on how the City is meeting these objectives in order for the Council and for the citizens to easily see the information. Councilmember Orlando said the new dashboard shows some information, but does not provide the detail needed for what the information means.

COUNCILMEMBER HARRIS suggested that a link be put on the website so citizens can quickly access the information to see the great things the City is doing.

COUNCILMEMBER LOPEZ said the dashboard is too high level to really see what was done.

VICE MAYOR STEWART asked if it was a best practice to receive strategic vision input from staff to get more information about what staff is hearing from the community.

MR. WRIGHT said staff would break down the focus areas into staff initiatives to realize the vision.

MR. IBARRA said the challenge would be balancing the initiatives and considering the resources and staff time it would take to achieve those goals. Mr. Ibarra said prioritizing the initiatives is important.

VICE MAYOR STEWART said they are trying to achieve the vision they believe the community wants and asked if it was a best practice to incorporate ideas of the staff on what initiatives would be impactful.

COUNCILMEMBER ELLIS said staff has ideas that Council can help move forward as well.

MAYOR HARTKE thought that was the role of the City Manager to help drive the goals and then staff moves forward with initiatives to reach those goals.

COUNCILMEMBER LOPEZ said staff has leeway to work with the citizens to make sure the projects are going to be a good use of resources and achieve what the citizens are asking for.

MAYOR HARTKE said the items that are brought to Council show that staff works with the citizens and they have great ideas.

COUNCILMEMBER ROE said talking about specific projects is great.

6. Discussion: Strategies to Reaffirm the Vision Forward

MR. IBARRA read Chandler's vision and discussed visions and how a vision is helpful to the organization. Mr. Ibarra said they could use the vision to generate ideas surrounding economic development of the City.

A. Strategic Framework

These are the Focus Areas.

B. Economic Development

- Strategies

COUNCILMEMBER LOPEZ talked about diversifying the City's economic development.

VICE MAYOR STEWART said it was important to look at how the City is advertised.

MAYOR HARTKE talked about the vitality of the community.

COUNCILMEMBER ORLANDO discussed healthcare and the major medical campuses in Chandler.

- Higher Education

COUNCILMEMBER HARRIS asked how much input the Council has in higher education.

MAYOR HARTKE said Council does not have much influence with the grade schools, but the City does have relationships with the community colleges and the universities.

COUNCILMEMBER ORLANDO talked about the past partnerships with the schools and suggested they look to see if there is opportunity for a partner regarding some of the City owned buildings.

COUNCILMEMBER ELLIS said the City needs a partnership to work with the schools to ensure that people have the education needed to work in the industries that are coming to Chandler. Councilmember Ellis said there is a segment of the population that cannot move out of poverty and they need to find a way to work with the City to find a way to provide them the opportunity to go to school. Councilmember Ellis said staff could look further into bringing a partnership that would be beneficial to the City.

COUNCILMEMBER LOPEZ said they need to look to the industry to guide the partnership and discuss ways to educate high schools to get them ready for the workforce in industries that are in demand as technology changes.

COUNCILMEMBER ORLANDO said ASU goes into communities and talks with the industries to put together curriculums so that students can receive education to go into the industries in their community.

VICE MAYOR STEWART said he was open to the idea of having partnerships to help drive the economy they have in Chandler.

MAYOR HARTKE said staff could explore the idea and further the educational opportunities to help raise the community.

COUNCIL agreed it would be a topic that should be explored.

MAYOR HARTKE asked Councilmember Orlando to look into the educational partnership opportunities with staff and update Council.

THE MEETING RECESSED AT 4:54 P.M.
THE MEETING RECONVENED AT 5:02 P.M. ALL PRESENT.

- Airpark

COUNCILMEMBER HARRIS said the Airpark and Council should invest the appropriate amount of funds to make it what it needs to be.

COUNCILMEMBER ELLIS asked what the vision was for the investment.

COUNCILMEMBER HARRIS said to build another terminal, ask staff to find the dollars such as grants, and explore ways to increase the economic development and expand on it.

MAYOR HARTKE said the Bond Committee looked at the issue and recommended expanding Cooper and open along Queen Creek so there is growth near the freeway and open anything outside the fence.

COUNCILMEMBER HARRIS said the growth would be done in phases, but the Airport needs to have a better understanding and direction on what they are doing.

MAYOR HARTKE said in the next few months there would be an Airport Development Plan and was in support of developing the airport to embrace the economic development opportunities.

COUNCILMEMBER ORLANDO said he looked at the area as a business park with an air strip. Councilmember Orlando said opening up the area to develop the corridor is important to the business park.

MAYOR HARTKE said the air strip allowed the business park to develop.

COUNCILMEMBER LOPEZ agreed and thought the airport was a positive impact. Councilmember Lopez suggested waiting for the Airport Area Plan and Airport Master Plan. The airports are seeing a shift and the pilot pools are shrinking and the demographic in the next 10 years will not be the same. Councilmember Lopez said he liked the idea of it being a business park with an airport and this is part of economic diversity.

MR. WRIGHT said there is an opportunity to do something important with the airport in the next few months. The Airport Master Plan is planned to go to Council in April. The plan has an emphasis on economic development and support for the Master Plan would be important.

COUNCILMEMBER ROE said Council has allowed encroachment along the way to make it less likely to be the airport it should be. Councilmember Roe said the airport should appeal to the businesses around it for the executives to come to the area. Councilmember Roe said not having the extended runway length is a missed opportunity.

COUNCILMEMBER HARRIS agreed and Council needed to make some difficult decisions and market the decision and make the best decision for the City.

COUNCILMEMBER ORLANDO said the business community has never backed the airport initiative. Councilmember Orlando said now there is a business community down there to support it.

COUNCILMEMBER ROE said there was some potential of having the bond issue fail, but the runway length is important.

MAYOR HARTKE said Council was in agreement of expanding the Airpark Area.

MR. IBARRA talked about leadership capital, political capital, and social capital and how the Council can leverage the different types of capital. Mr. Ibarra talked about how Council should engage with issues.

COUNCIL had discussion regarding engaging in issues. Council discussed the importance of the boards and commissions and the role of local government.

C. Neighborhood Redevelopment
- Housing Inventory

COUNCILMEMBER ORLANDO said there was a Council Subcommittee and there was discussion of more housing diversity. The City is bringing many businesses, but there is a void of workforce housing available for the workers. Councilmember Orlando said there are also concerns of transportation as well to support the workforce.

VICE MAYOR STEWART asked if the issue is the responsibility of the municipality and if the issue is larger than just the City.

COUNCILMEMBER ORLANDO said the City has to have the amenities needed to support the businesses that are coming here.

COUNCILMEMBER HARRIS said they received millions of dollars in federal funds and the City is involved in affordable housing.

VICE MAYOR STEWART said there are developers who are creating high density projects that may not stay as affordable housing, but it is not the job of Council to dictate the free market.

COUNCILMEMBER LOPEZ said there is a gap of people that make too much to qualify for housing assistance, but not enough to live in Chandler.

MAYOR HARTKE said it is not uncommon for people to live outside of a City and then commute to work and then eventually move closer.

COUNCILMEMBER ELLIS said there is a group in Chandler that needs help to stay in Chandler. Councilmember Ellis said they can have a relationship with the builders to fill the need of the City and that would set a precedent for other builders. This is not something the City would have to pay dollars for because developers are willing to do projects that are going to be successful.

COUNCILMEMBER HARRIS said they may not be able to dictate the housing types, but they can ensure the transportation is sufficient so people who live outside of Chandler can get to work in Chandler.

COUNCILMEMBER LOPEZ said Chandler is affordable compared to the neighboring cities.

COUNCILMEMBER ROE said it is an important issue and Council should continue to listen to best practices. Councilmember Roe said it is hard to get a picture of what the housing situation looks like and everyone's situation is different.

COUNCILMEMBER ORLANDO said it is important to the companies that come to Chandler for housing to be available for their employees.

COUNCILMEMBER LOPEZ said some of the companies pay their employees more to accommodate the cost of living in the area so workforce housing is relative to the time.

COUNCILMEMBER HARRIS said there are also a lot of houses that are being rented in the City.

VICE MAYOR STEWART said as the City and technology innovates there may be more door to door service with automated vehicles instead of buses.

MAYOR HARTKE said Council is open to exploring different ideas, but are not open to subsidizing.

MR. WRIGHT said for Council to consider the standards for housing that they want there are many diverse housing options. Mr. Wright said staff spends a lot of time vetting projects before it comes to Council, so having that guidance would be helpful.

COUNCILMEMBER ORLANDO said they need to look at this in a holistic approach and encourage redevelopment where it makes sense.

VICE MAYOR STEWART said they can look at the four corners that need to change from retail that is closed or an area that cannot support commercial spaces that could be changed to multifamily.

MR. IBARRA said it is important to have parameters to help drive the process.

D. Discussion of Other Topics
- Mental Health services

MR. IBARRA said many cities have started discussing this issue or revisiting it to mitigate the crisis.

COUNCILMEMBER HARRIS said there was a rapid response team.

MAYOR HARTKE said yes, with COVID-19.

COUNCILMEMBER LOPEZ asked what the need demographics are in Chandler.

COUNCILMEMBER ELLIS said 2% of the population at large has a need to address mental health not just for the homeless, and COVID-19 has made the situation worse. Councilmember Ellis asked if it was the role of Council to address the issue and find a solution. It is important that people get the help they need instead of ignoring it and the situation getting worse. Councilmember Ellis said in a conversation with the Chief they talked about creating a task force to look at the issue and what the community needs. Councilmember Ellis said having someone on call to respond to calls where there is a mental health crisis would be helpful. Councilmember Ellis said they could expand as well to have some staff that are trained to respond to calls and conduct assessments and have a wraparound service to get the help they need.

COUNCILMEMBER LOPEZ said if public safety gets calls to respond they should be able to engage immediately instead of waiting for another person to arrive.

COUNCILMEMBER ELLIS said right now there are limited services, but adding more resources would help keep people outside of the system and get the help they need to make long term improvement.

COUNCILMEMBER LOPEZ asked what the ask was for these programs.

COUNCILMEMBER ELLIS said to increase and expend what is allotted for these programs and bring additional resources. Councilmember Ellis said she would like to see the community partners work together to create a comprehensive program.

MAYOR HARTKE said this would require more staff and resources potentially.

COUNCILMEMBER ELLIS said it would be important to see results and quantify how the programs do. Councilmember Ellis said they could start with a pilot program and see how it works.

COUNCILMEMBER ROE said the County provides some services and the police department uses those in serious cases. Councilmember Roe said this needs some study and discussion because of what is happening now.

COUNCILMEMBER ORLANDO asked if this was something to diffuse the situation and then support getting help.

COUNCILMEMBER ELLIS said the police are not trained fully on mental health to determine what is happening and provide the help needed.

COUNCILMEMBER ORLANDO said if the police respond to a call and realize the person has some mental health problems what would be next.

COUNILMEMBER ELLIS said they would step back and bring in a mental health professional to respond. Councilmember Ellis said from that point the individual could enter a program and get the services they need.

COUNCILMEMBER HARRIS said he agreed with Councilmember Ellis. Councilmember Harris said they should not criminalize those with mental health and need to find a balance. Councilmember Harris said this would create more jobs and they would need to determine what type of professionals would be on staff and how that would be paid for. Councilmember Harris said the issue is worth looking into further and to study the community need.

MAYOR HARTKE said there is discussion with creating a mental health court.

KELLY SCHWAB, City Attorney, said that already there is a mental health court for those severely mentally ill, but this would be a more middle of the road court.

COUNCILMEMBER LOPEZ said if someone is breaking the law the person should be arrested and then could be sent to mental health court. Councilmember Lopez said there is an issue, but there are many

non-profit programs that could be engaged to respond to these situations. If they City were to take on the issue that would present more cost for tax payers and there needs to be more information about how many calls there are. Councilmember Lopez said they also need to look at the legal liability of providing these services.

MR. IBARRA said there is the distinction between mental health issues and behavioral health issues. Mr. Ibarra said there is an increase in teen suicide and more discussion around mental health. Mr. Ibarra said the police officers arrive on the scene and someone is in crisis and they need a way to direct the situation to professionals.

MAYOR HARTKE said he was interested in having staff spend some time on this. Mayor Hartke said there would be further discussion on the priorities and find Council consensus.

MR. IBARRA recapped the discussion and the agenda for the next meeting.

ADJOURNMENT: The Retreat was adjourned at approximately 6:53 p.m.

ATTEST: _____ _____
City Clerk Mayor

Approval Date of Minutes: April 8, 2021

CERTIFICATION

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the Special Meeting - Retreat of the City Council of Chandler, Arizona, held on the 4th day of March, 2021. I further certify that the meeting was duly called and held and that a quorum was present.

DATED this _____ day of April, 2021.

_____
City Clerk

unofficial

CHANDLER CITY COUNCIL
SPECIAL MEETING - RETREAT
Thursday, March 5, 2021

MINUTES OF THE SPECIAL MEETING - RETREAT OF THE HONORABLE MAYOR AND CITY COUNCIL OF THE CITY OF CHANDLER, ARIZONA, held on Friday, March 5, 2021, in the Public Safety Training Room, 3550 S. Dobson Rd., Chandler, Arizona.

THE MEETING WAS CALLED TO ORDER BY MAYOR KEVIN HARTKE AT 8:24 A.M.

The following members of the Council were present:

Kevin Hartke	Mayor
Mark Stewart	Vice-Mayor
René Lopez	Councilmember
OD Harris	Councilmember
Terry Roe	Councilmember
Christine Ellis	Councilmember
Matt Orlando	Councilmember

City staff present: Joshua Wright, Acting City Manager; Kelly Schwab, City Attorney; Dana DeLong, City Clerk; Debra Stapleton, Assistant City Manager; Matthew Burdick, Communications and Public Affairs Director

PATRICK IBARRA, The Mejorando Group, thanked staff for putting together these meetings and introduced the discussion item. Mr. Ibarra recapped the March 4th meeting and the discussion that was held.

VICE MAYOR STEWART asked if these were similar discussions to other cities and asked if there was anything they were missing.

MR. IBARRA said each community is different. Many communities discuss amenities and beautification and economic development. Mr. Ibarra said those items Chandler has always addressed. Mr. Ibarra said many communities have also discussed homelessness and it is an issue communities everywhere, including the Valley, are trying to address.

MAYOR HARTKE said there have been past initiatives that came from multiple master plans and some of these items may already be in process. These items were important in the past and would continue to be. Mayor Hartke said they need to have a good understanding of what is in each category now that is in progress already and what should be added.

MR. IBARRA said another area of focus is regionalism and advocacy with the State Legislature whether it is formally though the League or informally. Mr. Ibarra said cities are joining together regarding policy issues and keep the State from dipping into the cities' sales tax portion. Mr. Ibarra said cities are trying to find ways to work together even if they do not agree on everything to advocate on behalf of the region.

1. Discussion of potential modifications to the five key focus areas of the existing Strategic Framework.

MR. IBARRA talked about the discussion of each topic listed in the strategic framework and to go beyond just a concept.

- Strategic Framework 2019-2024
    - Community of Innovation
- Our Vision
    - We are a world-class City that provides an exceptional quality of life
- Our Goals
    - City Council Strategic Policy Goals
    - Being the most connected City
    - Being a leader in trust and transparency
    - Maintaining fiscal sustainability
    - Attracting a range of private sector businesses
    - Fostering a contemporary culture that embraces unity
    - Being safe and beautiful
- Infill and Redevelopment
    - Strategic economic development with:
        - Destination mixed use projects that support continued vitality of surrounding neighborhoods
        - Targeted efforts to repurpose vacant retail space
        - Unique amenities, events and experiences that attract people to Chandler
        - A deliberate, calculated approach to infill projects and annexation
        - An emphasis on workforce development and high-quality education
- Innovation and Technology
    - Embracing global technology that offers enhanced opportunities for citizens and businesses through:
        - Smart, sustainable solutions that empower, engage and improve the quality of life for residents, visitors, and businesses
        - Piloting innovative ideas to promote efficiency, productivity and connectivity
        - Leveraging partnerships and alternative funding sources
        - Marketing Chandler as the premier location for cutting-edge technologies
        - Investing in infrastructure to drive future technological advancements
- Mobility
    - Forward-thinking transportation networks with:
        - Multiple, integrated options to access Chandler's employment corridors

        - Convenient connections to the greater East Valley region
        - High-tech, multi-modal transit options for residents and visitors
        - Safe, attractive and well – managed roadways and traffic systems
        - A modern airport that serves as an engine for economic development
        - Open spaces and multi-use paths connecting developments and neighborhoods
        - Regional resources that maximize Chandler's ability to finance transportation projects
- Neighborhoods
    - Unique and vibrant neighborhoods with:
        - Services and amenities that build a community aligned with the needs of the people in the surrounding area
        - A holistic approach to neighborhood improvement through coordination with City departments, non-profits, business partners, faith agencies and community members
        - Innovative programs that provide housing options for residents'' diverse needs
        - Well-maintained and enhanced infrastructure that promotes aesthetics, safety and community vitality
- Quality of Life
    - Providing a safe community and an exceptional quality of life through:
        - People, resources and relationships that foster a stable and secure environment
        - High aesthetic standards incorporating innovative architecture, art and landscaping elements
        - Destination parks and open spaces with amenities catering to the demographics of the surrounding area
        - Re-imagined public spaces that are usable year-round and minimize blight
        - Activities, entertainment and business retention that capitalize on Chandler's hip culture, unique history and burgeoning arts scene
        - Use of creative partnerships to provide recreational opportunities for all
- Our Brand
    - A safe community that connects people, chooses innovation and inspires excellence

MAYOR HARTKE talked about the process for the discussion and how he would get a feel for how many Councilmembers are in support of an item to determine their next steps as a City. Mayor Hartke said there may be some items that are not addressed now or some that may require more information before giving direction to staff.

COUNCILMEMBER ROE said this is a good dialogue and everyone has a few projects.

MR. IBARRA said there is overlap in some of these areas.

COUNCILMEMBER ROE said he would like the City Manager to hear these things to best determine staff direction.

MR. IBARRA said to focus on strategy and not tactics and would help navigate the conversation. There are projects, programs, policies, and practices that are underpinnings of Council's purpose.

MR. IBARRA introduced the Neighborhood focus area.

MAYOR HARTKE asked, without using Chandler tax dollars, what options are available or best practices for housing options to meet diverse housing needs. Mayor Hartke said there was a Subcommittee meeting that had great conversation and would like more definitions about workforce housing. Mayor Hartke said they have heard options and wanted to see what options are available. Mayor Hartke said he was not interested in some of the development agreements or lowering the quality standards, but wanted to see what programs are available to further the conversation.

COUNCILMEMBER ORLANDO said in the Subcommittee they talked about ordinances, but he wanted to begin dialoguing the questions to see what is out there. Councilmember Orlando said one thing staff proposed is, instead of parking for three cars there are two. Councilmember Orlando said they need to look at diversity and other communities. There is still not a good understanding of what the inventory is and there may be enough diverse housing and the issue then is just sustainability. Councilmember Orlando said the business and the residents are saying things and they need to determine what options they have and models that are used in other communities. Councilmember Orlando said they need to see what is there and create a reasonable plan.

COUNCILMEMBER LOPEZ said he believes they are more aligned than what he previously thought. Councilmember Lopez said he agreed and they need to know what the inventory is like now and have staff look to see what housing availability looks like. Councilmember Lopez said it is important to see what is going to be coming online soon, what is left to build, and then how much of that is multifamily. Councilmember Lopez said it is important that Council is on the same page when it comes to the overall plan.

MAYOR HARTKE said they would like to have staff get more information and hold a work session with some of the information that was presented at the Subcommittee. Mayor Hartke said if they are giving mixed messages to the community they are going to get mixed messages back. Mayor Hartke talked about a previous development project and how Council sent mixed messages and they need to be clear on their message.

COUNCILMEMBER ORLANDO said it helps staff as well.

COUNCILMEMBER ELLIS asked how they get on the same page.

COUNCILMEMBER LOEPZ said that would happen at the Study Session.

COUNCILMEMBER HARRIS said the study session is too formal and they need another retreat to lay out a foundation and have more clarity on what they are trying to define.

COUNCILMEMBER ROE said housing is a big discussion and the City is giving a lot of things the zoning attorneys are asking for. Councilmember Roe said the land is valuable because that is all the housing for the future. Councilmember Roe said they need to determine what is next and housing

should be a gold standard. Councilmember Roe said apartments and multi-housing comes with all sorts of issues and they need to be careful and it is a huge challenge.

COUNCILMEMBER ELLIS said it can be done.

COUNCILMEMBER LOPEZ said it would be important to go back to those troubled areas, look at redevelopment, and elevate the area. Councilmember Lopez talked about a redevelopment project at 101 Pecos and Arizona. That used to be a bad area and now it has been remodeled and it is a nice area.

VICE MAYOR STEWART said that is investing in the community so people want to continue to reinvest in projects like that. Vice Mayor Stewart talked about the last zoning case and how they divided and conquered Council. Vice Mayor Stewart said he talked to staff about this and how Council was worked. Council needs to be aligned on what a good project is and what Chandler deserves. Chandler is the best emerging City in terms of development and business and they need to start acting like it as a Council.

COUNCILMEMBER ORLANDO asked if that was a separate item to talk about building standards.

MAYOR HARTKE said there are two conversations.

COUNCILMEMBER LOPEZ said when they come forward with these projects they all need to be on the same page.

COUNCILMEMBER HARRIS said they always talk about innovation and asked if people see that when people drive down the street. Councilmember Harris said he has a lot of good ideas and mashed with someone else's idea it would become a greater idea. Councilmember Harris said it is important to look at what Chandler looks like tomorrow and what the architecture would be. Councilmember Harris said they need to spend time defining what architecture would look like.

COUNCILMEMBER ROE asked for a scorecard that would come out of Development Services and Planning and Zoning Commission and maybe even provide some type of award that it is a gold standard project. Councilmember Roe said Council would value something like that.

MAYOR HARTKE said that information is in the narrative, but perhaps something more like a dashboard. Mayor Hartke said this is an extended work session and they are covering a lot of topics. Mayor Hartke suggested they start their work sessions earlier so they do not get cut off to go to the next meeting.

COUNCILMEMBER ORLANDO asked to add the word quality housing projects and if that made a difference.

COUNCILMEMBER ELLIS said yes.

VICE MAYOR STEWART said he thought it did for staff. Vice Mayor Stewart said this gives staff backing to demand quality projects.

MAYOR HARTKE said there are two conversations and he wanted those award winning types of projects, but to remember that a development cannot have all of these amenities and still be priced at work force housing.

VICE MAYOR STEWART said when it is an elevated product it would generate better opportunities for everyone. Vice Mayor Stewart said it would generate more income, more cash flow, and provide more support for programs. Vice Mayor Stewart said they could have a fiscally responsible City and do everything.

MAYOR HARTKE said they could have anything they want they just cannot have everything they want. Mayor Hartke said maybe they need to relook at issues and see what opportunities there are. Mayor Harke they would not be able to have everything in one development.

COUNCILMEMBER HARRIS said they need to find a way to determine what the gold standard is for Chandler and what it would look like in the future. Councilmember Harris said Chandler looks boring and does not look like a smart city. Councilmember Harris asked if staff could send samples of what other communities have done that are deemed smart cities to have a visual idea of what Council should look for in a project. Councilmember Harris said then they can better tell the developers what they want. Councilmember Harris said they need to do the same for the business community as well and invest the time in researching this.

VICE MAYOR STEWART agreed.

COUNCILMEMBER LOPEZ said he agreed he would like more information.

VICE MAYOR STEWART said they need the items with enough time, not the day before the meeting.

COUNCIL agreed to move forward with studying this.

MAYOR HARTKE asked if Council was in agreement to hold additional Work Sessions.

COUNCIL agreed.

COUNCILMEMBER LOPEZ said these conversations are more direction for staff about where Council wants to go. Councilmember Lopez said some things may require multiple sessions.

MR. IBARRA said for staff to bring back to Council the subcommittee report, standards for development, and what it looks like in the future. Mr. Ibarra said housing is a big subject and there is a lot to discuss.

COUNCILMEMBER LOPEZ said they need multiple work sessions because it is so involved. They need to know where the City is now in regards to inventory and then requirements to give to staff of what a

good project looks like from Council's perspective and then review the stipulations on the project. Councilmember Lopez said this would tie back into beautification and what the City would look like in the future. Councilmember Lopez said they need to determine what look they want.

MR. IBARRA said they need to reconcile their current ordinances and there are a lot of moving parts to create consistency.

COUNCILMEMBER ORLANDO asked if art projects were still added in developments today like they were in the past as he had not seen much of it lately.

MAYOR HARTKE said most major development have and the buildings by the airport are themed. Mayor Hartke said if there are more changes on developments it could be sent to Planning and Zoning and Council direction needs to be clear to them as well. Planning and Zoning Commission is trying to follow Council and send projects that Council wants.

COUNCILMEMBER ORLANDO said they should have added an art piece to the last one.

COUNCILMEMBER ELLIS confirmed they were going to add the word quality.

MR. IBARRA said he added it.

COUNCILMEMBER HARRIS said they need to define what quality means. Councilmember Harris talked about the power charging stations and maybe that was defined as innovation neighborhoods or innovated development so it speaks to the progression of the City.

VICE MAYOR STEWART said they should look at Smart Cities and what that means to the business community not just in terms of charging stations, but inside the building as well. Vice Mayor Stewart said Chandler has always been a free market and he has changed his mind over the years. Vice Mayor Stewart said the developers come in and develop and then leave, but perhaps they add more standards for sustainability.

MAYOR HARTKE said everyone calls themselves a smart city and every City defines what they mean by that. Mayor Hartke said there was a presentation a while ago about where Chandler is and regional initiatives. Mayor Harke asked for a presentation on what a Smart City is and where Chandler stands in regards to that.

COUNCILMEMBER LOPEZ said the last discussion that was held was very generic. Councilmember Lopez said they talked about this before and did not want to be pigeon holed into that. Councilmember Lopez said when they talk to the general public about being a smart city they also have different views of what that means such as free Wi Fi. Councilmember Lopez said they need to be careful of creating pot holes they cannot fill.

MAYOR HARTKE said it would be worth understanding and what that would mean to the City.

MR. IBARRA said it is important to think about innovation as not just technology. Mr. Ibarra said it is good to talk about what innovation means and it is a mindset.

COUNCILMEMBER HARRIS spoke about Cox bringing in fiber optic and they need to provide access for residents and it could be a partnership. Councilmember Harris said public buildings also have Wi Fi so people have access if needed. Councilmember Harris said they need to think about how the citizens can have access to the internet and be connected using community partners.

MAYOR HARTKE said they have done a lot of work on the fiber network.

COUNCILMEMBER LOPEZ said Cox has already run fiber throughout the City.

COUNCILMEMBER LOPEZ thought they should remember that there are unintended consequences of innovation and change within the community as some are resistant to that.

MR. IBARRA said technology is one component and it is not the whole piece.

COUNCILMEMBER ORLANDO said Chandler historically has set the standard and set the definition and was not afraid of defining what Smart City is. Councilmember Orlando said that sets Chandler apart from other communities. Councilmember Orlando said the City can define what that is.

COUNCILMEMBER LOPEZ said he liked the idea of Chandler defining what a smart city is.

COUNCILMEMBER HARRIS said the definition could be small, but it needs to be defined. Chandler is the community of innovation, but they need to define what that means and they need to be clear and concise.

MR. IBARRA introduced the Mobility focus area.

MAYOR HARTKE said he serves on different transportation committees and talked about Prop 400. The West Valley is very organized and there are a lot of projects and conservations happening about other freeways. Chandler does not have any more freeways to build, but there is more work on circulars. Mayor Hartke said there is also work on a technology fund as transportation will look different in the next 20 years.

COUNCILMEMBER ROE said this was well defined. Councilmember Roe said he wanted to see a fleet of self-driving electric vehicles that take people where they need to go and a control center to coordinate this and not just first mile last mile but the whole trip. Councilmember Roe said Metro could not completely dictate what the City does. Councilmember Roe said instead of having empty bus routes they could have self-driving vehicles that move up and down the transit corridors and there would a lot of monitoring of the vehicles.

COUNCILMEMBER ORLANDO agreed with the idea as we do not need trains or buses any longer Councilmember Orlando clarified that it would be complex to coordinate all of that.

COUNCILMEMBER ROE said Express in Downtown has proven itself and the money is worth it. Councilmember Roe said mobility for those who do not have the means that this would be a solution to help them and other to get to and from work.

COUNCILMEMBER ORLANDO asked if there was a public private partnership.

MAYOR HARTKE said Waymo is moving towards that and there is a partnership with Lyft for the first mile last mile in South Chandler. Waymo has a partnership with Valley Metro and there was a pilot in the City in 2019 with the City employees. Mayor Hartke thought there would be one with Uber, but they went to another city. Mayor Hartke said they are not that far off from being able to have a light rail experience, but without the traditional light rail. There may be a pilot project, but it would not be with Valley Metro because they own buses.

COUNCILMEMBER LOPEZ said they need to evaluate how much money is being invested and determine how the bus routes are performing. Councilmember Lopez said mass transit has always been subsidized to get low income areas to their jobs. Councilmember Lopez said if that money was reallocated and they did a different program that could be more impactful. If they were to do a circulator it may be more effective and reevaluate with more information what they are spending and where they could innovate. Valley Metro may not like the idea, but once there is a circulator in the employment corridors and park and rides especially riding in a regular car and not a bus. Other cities may want to get in on it and then the program could expand.

MAYOR HARTKE said it is not easy to drop a bus because of the regional system.

COUNCILMEMBER LOPEZ said he often sees empty busses, but it may be at the end of the line and on its way to pick up other people. Councilmember Lopez said they may drop a couple miles from the bus route because the circulators come more often.

COUNCILMEMBER ORLANDO said the circulator would drop them off at that bus station where it picks up.

COUNCILMEMBER LOPEZ said the circulator could come more often to the bus stop and if goes well it could be expanded. Councilmember Lopez suggested having a work session about the bus system and how much the City pays.

COUNCILMEMBER HARRIS said Council should look at Tempe's system because their system is effective and has some destination stops.

COUNCILMEMBER LOPEZ said ASU subsidizes that system.

MAYOR HARTKE said the cities that offer that also have a transportation tax and Chandler does not. Mayor Hartke said that is a way to do the circulators and offer the service; there is no City that offers that service without a self-imposed tax.

COUNCILMEMBER LOPEZ said he would like to see what is already being spent so they do not have to raise the tax.

COUNCILMEMBER ORLANDO said he liked the idea because the circulators are more convenient for people and they need to look at a way to reimage the way to move people. Councilmember Orlando said there was discussion in the past about a tax for the light rail and it did not move forward. If there is a pilot program that shows autonomous vehicles or a circulator it is more palatable and convenient. Councilmember Orlando said he was in support of pilot programs and see what works.

VICE MAYOR STEWART said decentralization is the next step in everything we do. Mass transit is centralization. It is master planned, routes, an old technology, and is an outdated way to move people. Phoenix built an infrastructure to move people around by cars. Chandler built six lane roads through neighborhoods to move people around by cars. People are being moved by cars and buses. Vice Mayor Stewart said the need to look at micro targeting which is happening in every industry. Vice Mayor Stewart said this mass approach is a broken approach and is an old style. Vice Mayor Stewart said Valley Metro would be fighting to keep the buses and shared his experience with working with them. Vice Mayor Stewart said they should look at how many rides could be direct to the destination or bus stop for the same amount of money. Vice Mayor Stewart said if they find a way to change the approach and find a public private partnership to be more efficient and effective.

MAYOR HARTKE said one of the reasons we did not get Uber was partly because of the regional transportation not in Chandler.

COUNCILMEMBER ORLANDO said they have to think regional.

VICE MAYOR STEWART said the 101 and 202 could have express buses, but he is more focused on the surface streets and getting people where they need to be.

COUNCILMEMBER LOPEZ said they are aligned with the items, but they need to review the public transportation budget and the ridership levels. Councilmember Lopez said when COVID-19 came they are still being billed for the buses, but if there was an alternate option that was as needed the cost would drop as it is not being used.

COUNCILMEMBER ORLANDO said service would go up.

COUNCILMEMBER LOPEZ said that would be a massive savings.

MR. WRIGHT said they did receive federal funding. Mr. Wright confirmed there was Council interest in micro transit, public private partnerships, and door to door service. Mr. Wright said it is a complicated issue due to regional factors.

MAYOR HARTKE said this issue has come up before and Chandler is not the same as it was 10 years ago.

COUNCILMEMBER LOPEZ said micro transit is not regional.

COUNCILMEMBER ELLIS said the airport is valuable as an economic engine and there was a lot of discussion on what it would be. Councilmember Ellis said they all have some different ideas and wanted to define what a modern airport means to them. Councilmember Ellis said the airport needs to find its place in mobility.

MAYOR HARTKE said a modern airport could have modern airplanes come in. Mayor Hartke said if they could displace the touch-and-goes which is where most of the complaints come from and focus on an appetite to modernize it.

COUNCILMEMBER LOPEZ said there are some remodel projects in the CIP plan and could be a hub for businesses. Councilmember Lopez said modern aircraft could come in and out of the airport. Councilmember Lopez said they need to leave the door open as the private sector catches up.

COUNCILMEMBER ORLANDO suggested it be a modern airport that serves as a business park engine for economic development.

COUNCIL agreed they liked the wording.

MAYOR HARTKE said they have heard from the Parks Master Plan that people want more places to walk and they receive funds from other agencies on these projects. Mayor Hartke said the City pays 5%.

VICE MAYOR STEWART said he had requested additional safety barriers or something to be added to keep the bicyclists safe.

MR. WRIGHT said they are working on some solutions for future bike lanes.

MAYOR HARTKE asked if there were any reports regarding cell phone laws in terms of making biking safer.

MR. WRIGHT said it just started January 1, so he has not received a report yet.

MAYOR HARTKE said he would like in six months to see the impact.

THE MEETING RECESSED AT 9:44 A.M.
THE MEETING RECONVEINED AT 9:59 A.M. ALL PRESENT

MR. IBARRA introduced the Innovation and Technology focus area.

MAYOR HARTKE talked about a scorecard to see where the City is at overall and how the City's definition of a Smart City is developing. Mayor Hartke said after they define what a Smart City is then other projects and direction may come from that. Mayor Hartke said that direction would come after a presentation on the subject.

COUNCILMEMBER ELLIS agreed.

COUNCILMEMBER ROE suggested there be a speaker that is forward thinking come to the City to talk to staff about the next big ideas and see how Chandler can innovate and if we are missing something. Councilmember Roe said there are dynamic people that have big ideas that we can consider.

MAYOR HARTKE said there are some events and suggested Council attend events in other cities and ASU to see regional innovation. Mayor Hartke said they can be vocal about further understanding of smart cities.

COUNCILMEMBER ROE said Council needs to discuss some of the ideas.

VICE MAYOR STEWART said this is a great thing to talk about and this fits within the City's brand. Vice Mayor Stewart said he would like more information on where Chandler is being marketed and micro-targeting to CEOs outside of the State and market Chandler's accolades. Vice Mayor Stewart asked for a report on dark fiber and they have to be able to move data.

COUNCILMEMBER ELLIS said it needs to be throughout the whole City because there is still an area that is struggling to get data.

COUNCILMEMBER LOPEZ said infrastructure and fiber is not the way of the future anymore and they need to weigh the options. Councilmember Lopez said they need to make sure they are not spending money or pre-engineering a solution that is a thing of the past.

COUNCILMEMBER ELLIS said they need to have a presentation to see where they want to go.

VICE MAYOR STEWART said it was a good point.

COUNCILMEMBER ORLANDO said they need to look at redundancy and a Smart City would have redundancy in the event of an emergency. Councilmember Orlando said if one system goes down they need to have redundancy and they have learned that lesson with COVID-19 and they did not have the infrastructure to work remotely.

MAYOR HARTKE said as part of GPEC the City advertises with them instead of sending our own ads so we do not compete with our neighbors.

VICE MAYOR STEWART asked if that was a good thing.

MAYOR HARTKE said it has been a good thing and has opened opportunities in the past and that is how they got GPEC.

COUNCILMEMBER ELLIS asked if we could advertise ourselves.

MAYOR HARTKE said we could but people do not do that as much anymore. Mayor Hartke said people approach the State and the region. Marketing the City to businesses is different than marketing for tourism.

COUNCILMEMBER LOPEZ said businesses know their employees may not all live in that City so they look at the region and it is better to share the advertising costs.

VICE MAYOR STEWART said micro-targeting is the future and handing over marketing to another organization is great, but having our own and put effort into marketing is not a bad thing.

MAYOR HARTKE said they get some through cultural development too.

COUNCILMEMBER ORLANDO said Chandler is a first tier global community and was interested in marketing globally. Councilmember Orlando said there is a large Asian community in Chandler as well as Pakistanis and Indians.

COUNCILMEMBER LOPEZ said Brazilians as well.

COUNCILMEMBER ORLANDO said they need to look at places such as the mall to attract residents. The City is diverse and we should market to those diverse communities to bring other global companies here.

VICE MAYOR STEWART said Chandler's success would raise the bar for the other neighboring cities and would help the State. Vice Mayor Stewart said if they do some of their own marketing it would be beneficial and is inexpensive.

COUNCILMEMBER ORLANDO agreed.

MAYOR HARTKE asked staff to explore marketing expansion globally.

COUNCILMEMBER LOPEZ said they should ask the business community about what future expansion looks like. Councilmember Lopez talked about a CIO round table and show they want to be the forefront in technology.

MAYOR HARTKE said the Citizen Bond Committee had great stakeholders from the community.

COUNCILMEMBER ELLIS said they could continue to work with them.

COUNCILMEMBER ORLANDO said it was a very diverse high powered group.

MAYOR HARTKE said the City's IT Director is great.

COUNCILMEMBER LOPEZ said he does really well.

MR. IBARRA introduced the Infill and Redevelopment focus area.

MAYOR HARTKE said they have talked about some of these areas such as development standards.

COUNCILMEMBER HARRIS asked if this needed to be part of the strategic plan. Councilmember Harris said by focusing on the other pillars they are already doing this and should this just be part of the expectation. Councilmember Harris asked if this needed to be singled out as its own.

COUNCILMEMBER ROE said yes, for the public and the developers to see redevelopment is a focus. There are hot spots around the City that are precious and there could be great projects to help these areas. Councilmember Roe said they need to look at the next big thing and have quality developments.

COUNCILMEMBER HARRIS said when he reads this he thinks of properties being built, but not economic development. Councilmember Harris asked what redevelopment meant to Council because they should automatically be doing this and maybe should be part of the other buckets. Councilmember Harris suggested adding economic development to make it clearer instead of having to read into it.

MAYOR HARTKE said two years ago, Chandler was at 12% buildout and now they are at 9.1%. Looking at the developments it takes on a greater sense of importance because there is less land. Mayor Hartke said every time there is development this becomes more important.

COUNCILMEMBER ORLANDO talked about other cities and said this is important because this is where we are in the maturation of the City. Councilmember Orlando said as retail begins to go away they need to think about what to do with the land. Councilmember Orlando said to him this is a top priority because if they do not focus staff time, developer time, and Council time on this then we lose out a lot and they would go somewhere else if there is not a concrete plan.

COUNCILMEMBER LOPEZ said this also is applicable to small businesses and that we want them here. Councilmember Lopez said in the past it was important to have this pulled out on its own because of where the City is at and ensure that small businesses understand the City needs to be adapted.

COUNCILMEMBER ORLANDO said it is like the public safety discussion from the day before, if this is put as an overlapping element or standalone.

COUNCILMEMBER HARRIS said as they look at the strategic plan they talk about economic development and infill and redevelopment. Councilmember Harris suggested economic development could be its own pillar and discuss entrepreneurship, small businesses, large corporations, and all of these different things. Councilmember Harris said residents are not going to read as deeply into it as the Council is philosophically. Councilmember Harris said entrepreneurs and small businesses are not going to think infill and redevelopment.

COUNCILMEMBER ELLIS asked if another category should be added. If they are really going to push the City forward and discuss what they are going to do with small businesses then it may need to be separate.

COUNCILMEMBER HARRIS said he understood what everyone was saying but it did not stand out in this category. It is important to keep the focus areas simple so that people can clearly understand what Council's goals are. Councilmember Harris said people would not associate economic development with infill and redevelopment.

COUNCILMEMBER ELLIS said they could have both and really have points in each area to have clear focus on what the City is doing. Councilmember Ellis said they are doing these things already and it would be clearer for the residents.

MR. IBARRA said these focus areas are points of emphasis and this document gives staff direction, but the audience are the residents and businesses.

COUNCILMEMBER LOPEZ asked if there were going to be two buckets or rename infill and redevelopment to include economic development.

COUNCILMEMBER HARRIS said it could be both and they could focus on economic development initiatives as well. Councilmember Harris if they add another pillar then it could in the airport, Price Corridor, and areas that are struggling such as North Chandler. Councilmember Harris said this sends a clear message that economic development is important to the City especially as they market the City. Councilmember Harris said they need something that says they want companies here when they do global marketing and they have defined this as a focus area.

VICE MAYOR STEWART agreed and said infill and redevelopment is a function of economic development and the title should be economic development. Vice Mayor Stewart said this is a valuable marketing tool.

COUNCILMEMBER LOPEZ said having something in more common terminology would be a good idea and they could move the airport into this category.

COUNCILMEMBER ELLIS said they are changing the narrative.

COUNCILMEMBER ORLANDO said each category has an economic element and those could be pulled into one category.

COUNCILMEMBER LOPEZ agreed for the title to be something that is encompassing that is easy for people to understand. Councilmember Lopez agreed the airport could be moved and this category would show a higher level of priority. Councilmember Lopez said not pulling every piece of economic development from the other categories but have a balance.

MR. IBARRA said some cities use the term economic viability which is more of a broad term than economic development.

COUNCILMEMBER LOPEZ said he liked that.

MAYOR HARTKE read the vision statement and information about the focus areas. Mayor Hartke said infill and redevelopment is important, but it is important to serve the existing businesses and broaden the diverse business climate. Mayor Hartke said it brings a sense of empowerment and asked staff to look at the wording.

COUNCILMEMBER ELLIS said she liked economic viability and add information about existing businesses. Councilmember Ellis said it is important to show there is City support.

MR. WRIGHT clarified both the built environment and the people.

MAYOR HARTKE said people rave about the City being a business friendly city and others who do not work often with cities think Chandler is difficult to work with. Mayor Hartke asked to add a point about being business friendly to existing and developing industries.

COUNCILMEMBER HARRIS talked about Economic Development staff going the extra mile for the business community and empowering that team to do more. Councilmember Harris said Council has tasked them to do a lot of work.

MAYOR HARTKE said Development Services staff also does a lot for the business community and there has been a lot of progress done to make the process simple. These departments are all part of doing business in Chandler.

COUNCILMEMBER ORLANDO said, easy to do business with but not a push over.

COUNCILMEMBER ELLIS said that was right.

COUNCILMEMBER HARRIS asked if it would be a pillar or something added to the name.

VICE MAYOR STEWART said infill could go underneath.

MAYOR HARTKE said they would change the title.

COUNCILMEMBER HARRIS said infill and redevelopment would be a subcategory.

COUNCIL determined infill would be a under economic viability as a subcategory.

COUNCILMEMBER ORLANDO asked if there is anything else they should be doing regarding redevelopment.

MR. WRIGHT talked about the infill incentive program the City currently has. Mr. Wright said they need to have a discussion about standards. Mr. Wright recommended Council add protecting employment corridors as it is an ongoing discussion as they fill in the blank spaces.

COUNCIL agreed.

VICE MAYOR STEWART asked what kind of economic development Council wants to do. The City has evolved into a different type of economic development and the City is bringing in high paying jobs. Vice Mayor Stewart said they have moved away from call and data centers and are bringing in white collar jobs that are six figures. Vice Mayor Stewart asked if they are committed to that. Vice Mayor Stewart said they need to think about what types of jobs they want and be selective.

MAYOR HARTKE said they were protecting Price Corridor for certain type of jobs and the Airpark for light industrial. Mayor Hartke said it would be good to have this conversation with the Economic Development staff otherwise they could just be getting warehouse type of developments and decide what they want.

COUNCILMEMBER HARRIS said he liked the idea of protecting employment corridors and for the airport to be a focus area and being entrepreneurship friendly. Councilmember Harris suggested adding innovation to the category as well.

COUNCILMEMBER ORLANDO said they are losing land and would potentially annex land and asked what the major impediment was to redevelopment. Councilmember Orlando talked about a developer who wanted to take out some stores to add multi-housing which would help the area. Councilmember Orlando discussed redevelopment in the City and asked what they should do with the older sections.

MR. WRIGHT talked about a redevelopment area and the challenges redeveloping the site. Mr. Wright said each site is unique and there is the cost of redeveloping as well as some difficulty with envisioning what the site could be. Mr. Wright said Council should have a clear vision for developers of what should go there and support the other retail areas. Multifamily and mixed use is a great option for those areas.

COUNCILMEMBER ORLANDO asked about Mariposa and the transition.

MR. WRIGHT said there are multiple types of housing options in the area.

COUNCILMEMBER ROE talked about another redevelopment site in North Chandler.

COUNCILMEMBER ORLANDO said they need to have a vision.

MR. WRIGHT said staff needs to know what Council is comfortable with.

COUNCILMEMBER LOPEZ asked for a work session to get more information.

MAYOR HARTKE said they could have a work session regarding the issue.

MR. IBARRA introduced the Quality of Life focus area.

MAYOR HARTKE said there was discussion regarding public safety to add as a focus area and a fiscally sound budget is just as important.

COUNCILMEMBER LOPEZ said because of the environment, he suggested adding a public safety header and to show the City sees that as a priority. Councilmember Lopez said he did not think public safety should be a separate pillar, but should be a subcategory and moved towards the top of the list. Councilmember Lopez said he also wanted to be respectful of our history as we begin redeveloping and new innovation. Councilmember Lopez said it is important to show the evolution of the City and pay homage to the past.

MAYOR HARTKE suggested staff add something to the beginning to talk about the history.

COUNCILMEMBER LOPEZ said he liked the new mural in the breezeway that is on the agenda and that it shows the evolution of the City.

COUNCILMEMBER ORLANDO talked about sustainability and that they have a sustainability coordinator and there have been briefings. Councilmember Orlando asked if that fit into quality of life.

MAYOR HARTKE asked what sustainability meant to Councilmember Orlando.

COUNCILMEMBER ORLANDO said some cities have a sustainability plan and asked if Chandler had created one.

MR. WRIGHT said the City does not have a sustainability or climate action plan. There are some standards as far as City buildings, but there is not a specific plan.

COUNCILMEMBER ORLANDO asked if the City should have one as there is more emphasis on that in terms of federal dollars.

MR. WRIGHT asked if Council had specific goals or if it was more general.

COUNCILMEMBER ELLIS said there are recycling programs and said it is important to educate the residents about sustainability, encourage them, and show the benefits to the City. Councilmember Ellis said it is important to see where they can have more emphasis and work with the residents.

MAYOR HARTKE said solar, planting trees, water, and recycling have always been important topics. Mayor Hartke said they could give out awards for sustainable developments as they come on board which they have done in the past. Mayor Hartke said he was not interested in creating a document to become a carbon neutral city, but wanted to look at ways to highlight sustainability.

COUNCILMEMBER LOPEZ said as a region there are a lot of talks about water.

COUNCILMEMBER ORLANDO said they are already doing sustainable things as a City and asked if this should be added.

MAYOR HARTKE said to increase sustainability efforts.

VICE MAYOR STEWART said there are cost neutral ways to be sustainable. A chosen effort to be sustainable without giving money away to unproven technology. Vice Mayor Stewart said if they are doing a new project they should look at being sustainable.

MAYOR HARTKE said yes, it should increase their revenue.

COUNCILMEMBER ORLANDO talked about past sustainable additions to projects such as shade canopies in the parks.

VICE MAYOR STEWART talked about the heat effect of concrete in the City and how it has increased as the City has grown.

COUNCILMEMBER LOPEZ said to add sustainability as a bullet point.

MAYOR HARTKE said there seems to be collection around sustainability.

COUNCILMEMBER ORLANDO said some of these initiatives are far away.

COUNCIL agreed to add sustainability to Quality of Life.

COUNCILMEMBER ROE said he as in favor of a multigenerational project and about adding more space for the Senior Center such as giving up some space from the library.

COUNCILMEMBER ELLIS asked if it could be somewhere else.

COUNCILMEMBER ROE said the libraries are on a decline and the library could give up some real estate to make the Senior Center more inviting.

MAYOR HARTKE said there was discussion about a multigenerational facility at a few locations and there was some question as far as Council's appetite for something like that. Mayor Hartke asked if Council wanted to pursue options.

COUNCILMEMBER ROE said his understanding was that they did not want to spend that money. Councilmember Roe said most everyone wanted something, but there was concern about the cost.

MAYOR HARTKE said it did not go to the Bond Committee.

MR. WRIGHT said it did not, but it sounds like Council is interested in revisiting the topic. Mr. Wright there are options that are a lower cost and could partner with other facilities or partner exchanges with the private sector. Mr. Wright talked about options and about revisiting the topic.

MAYOR HARTKE said they rejected the standalone option.

MR. WRIGHT said when doing a study they give the whole range of options.

MR. IBARRA talked about the trend of repurposing libraries as community centers being multifunctional. Mr. Ibarra said the librarians know they need to reevaluate their value proposition because of technology so cities are building community centers that have multiple services and amenities that appeal to a wide variety of audiences.

COUNCILMEMBER ELLIS said they can still keep jobs and hire people.

MR. IBARRA said it is a community center with a library and it created as a life style center. Mr. Ibarra said this is what is trending because of people's habits.

COUNCILMEMBER LOPEZ said the naming plays into it as well. Senior center and multigenerational center have negative connotations. Councilmember Lopez said a multifunction center or community center makes it feel like it is for all generations not just one.

MR. IBARRA talked about Community Services and how they serve a diverse population. Mr. Ibarra said they work with the youngest kids and the senior generation. Mr. Ibarra said there is a larger demand for other sports as well such as cricket fields as the populations become more diverse.

COUNCILMEMBER HARRIS asked if Council wanted to add diversity and inclusion as part of quality of life or if it should be its own category. Councilmember Harris said that public safety should be its own category because it is something that is under scrutiny right now. Councilmember Harris said inclusivity is also under scrutiny and many companies in Chandler have initiatives around this. Councilmember Harris said it is a focus in the community and businesses in Chandler have the vision of being very inclusive. Councilmember Harris said he did not know if the community knew the emphasis the City places on diversity and inclusion as much as it practices it. Councilmember Harris said this should be a top priority and show the City cares about diversity and inclusion.

VICE MAYOR STEWART said they should brag about it.

COUNCILMEMBER HARRIS said yes.

MAYOR HARTKE did not see it as a standalone category, but thought it should be in quality of life.

COUNCILMEMER LOPEZ agreed to add a bullet point.

COUNCILMEMBER HARRIS said it should be a sub heading so it shows that the City really cares about it. Councilmember Harris said staff understands when there is an issue with public safety it needs to be elevated and diversity and inclusion should be the same. Councilmember Harris said they are talking to today's and tomorrow's generation and they care about public safety and diversity and inclusion and not marginalize it.

COUNCILMEMBER ELLIS said they need to embrace our diversity and make it a priority. Chandler has done that for a long time and it is not by accident that the City has not been affected the same way as other cities and Chandler has really fostered a sense of community for everyone. Councilmember Ellis

said not everyone hears how diverse the City is and what the City has done to foster this welcoming environment. When we embrace our diversity inclusion automatically follows.

COUNCILMEMBER HARRIS said diversity does not automatically mean inclusion and it has to be spelled out. Councilmember Harris said they can talk about diversity but inclusion is for everyone.

COUNCILMEMBER LOPEZ asked for this to be defined further. If this is in the forefront they need to look at what metrics they are looking at to show they are meeting these goals and what it means for policy.

COUNCILMEMBER ELLIS said diversity and inclusion is a way of life. Councilmember Ellis said they can create an environment where people feel they can thrive and be who they want to be. Councilmember Ellis said they need to let people know, but it's not something they can legislate.

COUNCILMEMBER HARRIS said this is an important conversation. Councilmember Harris said they practice diversity and inclusion in the City and spoke about what the City does to achieve this. Councilmember Harris said to have the world take it seriously that Chandler is doing this they need to add this as a focus area. Inclusion is a policy that impacts diversity and they need to have both together. Councilmember Harris said having diversity and inclusion is already here and other cities and business have already embraced it and Council should not shy away from it. This is the missing element and it needs to be featured.

COUNCILMEMBER ORLANDO said diversity has been in Chandler's DNA for a long time. Chandler was one of the first to put together diversity committees, the first to address the roundup in 1997, Chandler elected the first black mayor in Arizona, and we have world class companies and people. Councilmember Orlando said this is part of our brand and they should add diversity and inclusion to the brand statement.

COUNCILMEMBER LOPEZ agreed with adding to the brand. Councilmember Lopez said it should not be its own pillar. Councilmember Lopez talked about diversity and inclusion scores and how some of these scores are based on quota requirements of who is hired based on race and gender. Councilmember Lopez said he did not want that in Chandler. They should hire the best candidate and not hire to fill a quota.

COUNCILMEMBER ELLIS said then diversity is not from the heart they are just checking a box. Councilmember Ellis said they want to embrace a community where people can be who they want to be and continue to encourage the diverse community to apply for jobs, be educated, and provide mental health services to all. Councilmember Ellis said if this was added to our brand then anything could happen from there.

COUNCILMEMBER HARRIS said it would send the right message and it is already embraced by many.

VICE MAYOR STEWART asked what this meant.

COUNCILMEMBER HARRIS said diversity and inclusion.

VICE MAYOR STEWART said Councilmember Harris is talking about policy and Councilmember Ellis is talking about volunteerism and bragging about the community.

COUNCILMEMBER HARRIS said adding it to the brand.

VICE MAYOR STEWART said there is a difference between policy and what the community is embracing. Vice Mayor Stewart said they should be talking about this, but they should not be creating a policy to criminalize people. Vice Mayor Stewart said he brags about the community and is proud of being a diverse community. By leading with a passion they can continue to tell the story and supported putting it in the document but was leery about criminalizing people.

COUNCILMEMBER HARRIS said they should add diversity and inclusion as something to be proud of as it is part of the City already. Councilmember Harris said it should be highlighted and there should not be hesitation to add it to the document. Councilmember Harris said he would prefer to add it to the mission statement or the brand.

MAYOR HARTKE talked about his children going to Chandler High and how it was a diverse school. Mayor Hartke said he was cautious of the other cities' documents and they all have language that gives fines for not complying. Mayor Hartke said he wanted to celebrate their diversity and did not want to add something that criminalized people. Mayor Hartke said he agreed to add the words to the brand.

COUNCILMEMBER HARRIS talked about the unintended consequences. Councilmember Harris said people will change the way they think in the future and this keeps the direction forward. Councilmember Harris talked about the founding documents of government and they put things in writing to clarify how they do business and what makes them standout. Councilmember Harris said adding diversity and inclusion would be a great start.

COUNCILMEMBER LOPEZ asked about where it would fit in the document.

MAYOR HARTKE said Councilmember Orlando's idea was to add it to the brand.

MR. IBARRA said this topic is front and center for a lot of communities and they all look at it different based on each generation. Mr. Ibarra said a lot of cities are looking at being intentional. Mr. Ibarra said if it was easy to solve it would have already been done. Mr. Ibarra said people want to know that the Council can collaborate on these difficult issues. Mr. Ibarra said they need to translate the concept into practice and how they would achieve these focus areas.

COUNCILMEMBER HARRIS said they should start here and there would be more conversations.

VICE MAYOR STEWART asked where they are trying to get to.

COUNCILMEMBER ELLIS said they started a long time ago and they did not just start here. Councilmember Ellis said they need to rethink as there are things happening all over the world and they need to look at these changes and the City evolves.

COUNCILMEMBER ORLANDO asked as a City if they are practicing these things and would like a further discussion about what the City is doing to live up to this before going out to the community and tell them what to do.

COUNCILMEMBER HARRIS said he wanted to have a starting point and look into the issue further. Councilmember Harris said they should adopt this into their brand and look at what the City is currently doing and asked staff to look into it further and see where they need to go.

2. Summary and Wrap Up

MR. IBARRA made summary remarks and wrapped up the retreat.

COUNCILMEMBER ORLANDO thanked the Mayor and appreciated his leadership. Councilmember Orlando said he felt more connected to the issues.

COUNCILMEMBER HARRIS thanked the Mayor for creating an environment to share their diverse ideas.

COUNCILMEMBER ROE said it was a great opportunity.

COUNCILMEMBER ELLIS said open communication was important and respect others opinions and thanked Council for listening.

VICE MAYOR STEWART said he was grateful for the new Councilmembers' perspective and the discussion Council had on these topics.

MAYOR HARTKE thanked the Council for their comments and ideas over the past two days, and said staff would take the information and bring back details for the Council to review. Mayor Hartke said they have had some difficult conversations and appreciated Council's collaboration and thought there was great discussion.

MR. IBARRA said Council has a passion for the community and thanked them for the opportunity.

ADJOURNMENT: The Retreat was adjourned at approximately 11:57 a.m.

ATTEST: _____ _____
City Clerk Mayor

Approval Date of Minutes: April 22, 2021

CERTIFICATION

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the Special Meeting – Retreat of the City Council of Chandler, Arizona, held on the 5th day of March, 2021. I further certify that the meeting was duly called and held and that a quorum was present.

DATED this _____ day of April, 2021.

_____
City Clerk

unofficial

CITY OF CHANDLER COUNCIL MEETING MINUTES
Study Session
Monday, April 5, 2021

MINUTES OF THE STUDY SESSION OF THE HONORABLE MAYOR AND CITY COUNCIL OF THE CITY OF CHANDLER, ARIZONA, held in the Council Chambers, 88 E. Chicago Street, Chandler, Arizona, on Monday, April 5, 2021

THE MEETING WAS CALLED TO ORDER BY MAYOR KEVIN HARTKE AT 6:39 P.M.

The following members were present:

Kevin Hartke	Mayor
Mark Stewart	Vice Mayor
OD Harris	Councilmember
René Lopez	Councilmember
Terry Roe	Councilmember
Christine Ellis	Councilmember
Matt Orlando	Councilmember

Also in attendance:

Joshua Wright	Acting City Manager
Debra Stapleton	Assistant City Manager
Kelly Schwab	City Attorney
Dana DeLong	City Clerk

SCHEDULED PUBLIC APPEARANCES

MAYOR HARTKE invited Councilmember Lopez to join him for the recognitions.

1. Service Recognitions

Development Services
James Dawson – 15 Years

Public Works and Utilities
Robert Culbertson – 15 Years

2. Proclamation – Volunteer Recognition Week

MAYOR HARTKE read the proclamation and invited volunteers from Cornerstone and Zovio to accept the proclamation.

3. Proclamation – Fair Housing Month

COUNCILMEMBER LOPEZ read the proclamation and invited the Neighborhood Resources Cares Team to accept the proclamation.

4. Proclamation – National Library Week

MAYOR HARTKE read the proclamation and invited Friends of the Chandler Public Library representative to accept the proclamation.

Bob Lowry, President of The Friends of the Library, said it has been a trying year but it has been a stellar year for them regardless. Mr. Lowry said they ran a campaign called Love Your Library and received dozens of heartfelt thanks to the library for the services the libraries provided for Chandler.

5. Asian Association for Youth and Culture, Joseph Yang

JOSEPH YANG, 4909 W Joshua Blvd, Chandler, AZ 85225, Asian Association for Youth and Culture President, said the mission of the organization was to bring more Asian diversity and culture to Chandler and neighboring cities as well as raise awareness of specific needs for Asian American youth in the community. Mr. Yang said Chandler has the highest population of Asian Americans in Arizona based on the US Census in 2010 at 19,401 out of 261,165 residents which is 7.4%. Chandler has the least amount of Asian groups and most of these are in Phoenix, Tempe, and Scottsdale and listed notable Asian organizations. Mr. Yang introduced the board members of the Asian Association for Youth and Culture. Mr. Yang said they are recruiting more members to work with the community and bring more Asian culture and groups to the City.

MAYOR HARTKE thanked Mr. Yang for his work and looked forward to future events in the coming year.

CONSENT AGENDA DISCUSSION

MAYOR HARTKE said there were comments on Consent Agenda Item No. 7.

7. Introduction of Ordinance No. 4967, PLH20-0052/PLT20-0039 Serene Estates

COUNCILMEMBER ORLANDO thanked staff, developers, and citizens for work on this project. This was a model where everyone could work together on a solution and walk away happy.

MAYOR HARTKE said there were comments on Consent Agenda Item No. 10.

10. Resolution No. 5458, Authorizing Support for a Foreign Trade Zone Application for Viavi Solutions, Inc.; Manufacturing Facility to be Located at 3455 South McQueen Road

COUNCILMEMBER ORLANDO thanked staff for bringing the item forward and foreign trade zones are not done often. Councilmember Orlando said this allows for reduced taxes because of the global transactions. Councilmember Orlando said traditionally the school district does not share in some of the rewards and they have asked in the past for the businesses to work with the school district to see how they could help.

MICAH MIRANDA, Economic Development Director, said the education employment feedback loop was discussed prior to the company selecting Chandler. The company has shared they want to engage in the school district and have already taken steps to do so.

COUNCILMEMBER ORLANDO said the school district is a very competitive edge and wanted to ensure they keep that.

COUNCILMEMBER HARRIS said he had questions on Consent Agenda Item No. 14.

14. Agreement No. PD5-961-3521, Amendment No. 1, with American Traffic Solutions Inc., dba Verra Mobility, for Photo Enforcement

COUNCILMEMBER HARRIS asked how many photo cameras are in Chandler right now.

SEAN DUGGAN, Police Chief, said 17 cameras at 12 intersections. Chief Duggan presented the following presentation.

- Photo Enforcement History
  - Goal of photo enforcement program is to reduce the number of collisions and their severity by influencing driver behavior
  - Original Photo Enforcement contract began in 2001 with Redflex Traffic Systems
  - In 2007, the City renewed its contract with Redflex for photo enforcement services and exercised the final extension option through 2016
  - In 2016, the City selected American traffic Solutions, Inc., dba Verra Mobility, to provide photo enforcement services after a competitive bidding process
  - The term agreement was five years with the option of one additional five-year extension
- Photo Enforcement Impact
  - Nationally, red-light running is a leading cause of urban crashes and often causes injury and death
  - Studies conducted in Chandler show that there is a statistically significant reduction in collisions at intersections that are photo enforced
  - The Police Department's experience with photo enforcement as a tool to reduce collisions and increase traffic has been positive
  - Photo enforcement leverage's technology to help keep our roadways safe
  - Photo enforcement supplements traffic enforcement by police officers by providing round-the-clock monitoring of collision prone intersections
  - Part of overall 3E's approach to traffic safety: Enforcement, Education, Engineering
- Photo Enforcement
  - Presently, 12 intersections with photo enforcement camera systems
  - 5 intersections have two camera systems (example: eastbound and southbound approaches)
  - 17 total photo enforcement cameras operating in the City of Chandler
  - All cameras have red light and speed on green enforcement
  - Each approach is clearly marked with a radar speed feedback display and signed 300 ft. in advance providing notice to a person that a photo enforcement system is present and operational (ARS 28-1204)
- Photo Enforcement Locations
  - Alma School Rd/ Ray Rd – Eastbound
  - Alma School Rd/ Warner Rd – Westbound and Southbound

  - Kyrene Rd/Chandler Blvd – Westbound
  - McClintock Dr/ Ray Rd – Eastbound and Southbound
  - Alma School Rd/ Queen Creek Rd – Southbound and Westbound
  - Rural Rd/ Ray Rd – Eastbound
  - Arizona Ave/ Warner Rd – Southbound
  - Arizona Ave/ Ray Rd – Southbound
  - Arizona Ave/ Ocotillo Rd – Southbound
  - Dobson Rd/ Ray Rd – Southbound and Westbound
  - McQueen Rd/ Queen Creek Rd – Northbound and Southbound
  - Dobson Rd/ Chandler Blvd – Westbound
- Photo Enforcement Locations
- Valley Photo Enforcement Programs
  - Phoenix
  - Scottsdale
  - Paradise Valley
  - Mesa
  - Chandler
- Photo Enforcement Financial Snapshot
  - 5 Year History
  - Revenue – 15 year History
  - Expense – 15 Year History
  - All revenues and expense tracked annually and accumulated balance is only invested in traffic safety improvements
- Photo Enforcement Impact
  - If the photo enforcement program generates a positive cash flow, all funds are set aside annually in the General Fund balance as restricted for traffic safety purposes only to be used by Police and Traffic Engineering for traffic enhancements including signage, roadway improvements and other items that increase traffic safety in Chandler.
- Photo Enforcement
  - Request Council approve on additional five-year contract extension with American Traffic Solutions (ATS) beginning April, 2021 through March, 2026

COUNCILMEMBER HARRIS confirmed if the cameras were mostly in the north and west.

CHIEF DUGGAN said they are located in historically high collision intersections.

COUNCILMEMBER HARRIS asked what the projected income levels were for the areas where the cameras were located.

CHIEF DUGGAN said he did not know.

COUNCILMEMBER HARRIS said the cameras are mostly in the north and west and asked if these are still the same high traffic collision areas.

CHIEF DUGGAN said it has been some time since they have run the numbers, but they are in the process of doing that. Chief Duggan said he believed these to still be high collision intersections as they are main arterials with a high volume of traffic.

COUNCILMEMBER HARRIS asked what the revenue was for the City.

CHIEF DUGGAN said it varies from year to year. This year they are anticipating a net loss of $200,000.

COUNCILMEMBER HARRIS asked if the City pays the money to renew the contract again.

CHIEF DUGGAN said it is a five-year contract as it historically evens out over that time. The two years before there was a net increase.

COUNCILMEMBER ORLANDO asked if they need a police officer to verify the incident.

CHIEF DUGGAN said that was correct. There is a sworn officer who reviews the information before a citation is sent out.

COUNCILMEMBER ORLANDO confirmed that if the officer does not review it then a citation is not sent.

CHIEF DUGGAN said that was correct.

COUNCILMEMBER ORLANDO asked why we pay the company $20 dollars for an enforceable photo. He said he had the same question when this was first implemented years ago. Councilmember Orlando said if this keeps the roadways safe then it is another tool to use and would like to see more information on the data of the program. The photos should be provided to the City for free as part of the contract of doing business with the company.

CHIEF DUGGAN said they used to pay for each photo and now they are only billed for actual citation photos as a result of Councilmember Orlando's concerns in previous years.

COUNCILMEMBER ORLANDO requested staff see what could be done regarding this.

MAYOR HARTKE asked if the program makes the City safer.

CHIEF DUGGAN said he believed without a doubt that this makes the City safer.

MAYOR HARTKE asked if this helped in terms of officer management and what the impact would be if this went away.

CHIEF DUGGAN said if this goes away there would be no more traffic enforcement at these intersections than there are presently. If this goes away no one would monitor the locations 24/7.

MAYOR HARTKE said if residents called because the intersection is crazy there needs to be officers there, it would change the model if officers needed to be there to issue citations.

CHIEF DUGGAN said the model would be the same, as they have a limited number of officers. Chief Duggan said they have fewer traffic officers than when it was originally initiated back in 2008. The main benefit of the program is the influence and shaping of behavior and it is hard to measure. Chief Duggan said he is confident

it has an influence on driver's behavior as they approach the intersection. It may not be sustainable, but when they approach the intersection behavior changes.

VICE MAYOR STEWART asked for more data about the program and the intersections that they are placed. Vice Mayor Stewart said he would speak more about this during the Thursday meeting.

COUNCILMEMBER HARRIS asked how many hours it takes for an officer to review the photos.

CHIEF DUGGAN said this is something an officer does every day when they receive photos from ATS. They are able to turn those photos around daily so there is not a large queue, but it is a full time job.

COUNCILMEMBER HARRIS asked how many are processed per day.

CHIEF DUGGAN said it is different to process a citation as there are variables with each photo. Not all photos become citations. Last year, they issued 23,000 citations and about half of those were generated through photo enforcement.

COUNCILMEMBER HARRIS asked for a number of how many bad photos there are.

CHIEF DUGGAN said he would provide that information.

COUNCILMEMBER ROE said he would like to know how many are red light versus speeding.

MAYOR HARTKE asked if it was too early to see the impact of the enforcement of cells phones and distracted driving.

CHIEF DUGGAN said it is difficult to measure it.

MAYOR HARTKE asked if they have seen a decrease in traffic violations.

CHIEF DUGGAN said they would need more time as enforcement did not begin until January 1.

VICE MAYOR STEWART asked what the camera recorded, if it scans each car, and if the data is being kept at ATS.

CHIEF DUGGAN said they do have access to all the data, but would gather information for how long it is stored.

CONSENT AGENDA ITEMS

1. Resolution No. 5452 Authorizing a Grant Agreement with the Federal Aviation Administration (FAA) to Accept a Coronavirus Response and Relief Supplemental Appropriation Act (CRRSA) Grant
   Move City Council pass and adopt Resolution No. 5452 authorizing a grant agreement with the Federal Aviation Administration to accept a Coronavirus Response and Relief Supplemental Appropriation Act (CRRSA) grant not to exceed $57,162 for airport operating purposes; and authorizing the City Manager, or designee, to execute the grant agreement and all other documents necessary to effect the agreement.

2. March 2021 City Council Minutes

Move City Council approve the meeting minutes of the Special Meeting - Retreat of March 4 and March 5, the Study Session and the Regular Meeting of March 22, 2021, the Work Session - Budget Workshop and Regular Meeting of March 25, 2021.

3. Board and Commission Appointments
Move City Council approve the Board and Commission appointments as recommended.

4. FY 2020-21 One-time Exceptional Performance Awards for Employees
Move City Council approve a one-time exceptional performance award of $3,000 to each full-time employee and $1,500 to each part-time employee, employed as of December 31, 2020, and remaining employed through March 27, 2021, for an estimated cost of $5,530,000 across all Funds; and $3,060,000 in Fund Contingency Transfers to only be used should vacancy savings appropriation not be sufficient in a specific Fund/Cost Center combination, including General Fund of $2,800,000, to various Cost Centers within General Fund, Special Revenue Funds (i.e. Grant-217, Community Development Block Grant (CDBG)-219, Public Housing Authority (PHA)-224, 227, 230, 232, 233) and Self Insurance Funds (i.e. Workers Compensation-736, Insured Liability-737, Uninsured Liability-738, Short Term Disability-739, and Medical-741); Water Fund 605 of $200,000; and Solid Waste Fund 625 of $60,000.

5. Final Adoption of Ordinance No. 4961, PLH20-0023 Pecos and McQueen Retail Rezoning
Move City Council adopt Ordinance No. 4961, approving PLH20-0023 Pecos and McQueen Retail located at the southwest corner of Pecos and McQueen roads, Rezoning from Agricultural District (AG-1) to Planned Area Development (PAD) for Neighborhood Commercial (C-1) uses, subject to the conditions as recommended by Planning and Zoning Commission.

6. Introduction of Ordinance No. 4968, PLH20-0063 McKinley Glenn (Staff Requests Continuance to the May 13, 2021, City Council Meeting)
Move City Council continue PLH20-0063 McKinley Glenn, located east of the southeast corner of Chandler Heights and Cooper roads to the May 13, 2021, Council meeting, as recommended by Planning and Zoning Commission.

7. Introduction of Ordinance No. 4967, PLH20-0052/PLT20-0039 Serene Estates
Rezoning
Move City Council introduce and tentatively adopt Ordinance No. 4967 approving PLH20-0052 Serene Estates, Rezoning from Neighborhood Commercial (C-1) to Planned Area Development for single-family residential, located northwest of the northwest corner of Galveston and Hartford streets, subject to the conditions as recommended by Planning and Zoning Commission.
Preliminary Development Plan
Move City Council approve Preliminary Development Plan PLH20-0052 Serene Estates for subdivision layout and housing product, located northwest of the northwest corner of Galveston and Hartford streets, subject to the conditions as recommended by Planning and Zoning Commission.
Preliminary Plat
Move City Council approve Preliminary Plat PLT20-0039 Serene Estates, located northwest of the northwest corner of Galveston and Hartford streets, subject to the condition recommended by Planning and Zoning Commission.

8. Use Permit and Entertainment Use Permit, PLH20-0054 BAR @118W

Move City Council approve Use Permit and Entertainment Use Permit, PLH20-0054 Bar @118W, located at 118 W. Boston Street, subject to the conditions recommended by Planning and Zoning Commission.

9. Preliminary Development Plan, PLH20-0067 The Johnathan
Move City Council approve Preliminary Development Plan, PLH20-0067 The Johnathan, located at 55 N. Arizona Place, subject to the conditions as recommended by Planning and Zoning Commission.

10. Resolution No. 5458, Authorizing Support for a Foreign Trade Zone Application for Viavi Solutions, Inc.; Manufacturing Facility to be Located at 3455 South McQueen Road
Move to approve Resolution No. 5458, authorizing support for a Foreign Trade Zone application for Viavi Solutions, Inc.; manufacturing facility to be located at 3455 South McQueen Road; authorizing support for a property tax reclassification from class one to class six for all new personal property; authorizing a development agreement between Viavi and the City of Chandler; authorizing the execution of an Intergovernmental Agreement between the City of Chandler and the City of Phoenix; and authorizing the Mayor to sign the Resolution and related documents as approved by the City Attorney.

11. Agreement No. IT8-920-3889, Amendment No. 3, with Neudesic, LLC, for Annual Application Support Services
Move City Council approve Agreement No. IT8-920-3889, Amendment No. 3, with Neudesic, LLC, for annual application support services, in the amount of $123,000, for the period of May 1, 2021, through April 30, 2022.

12. Purchase of Microsoft Software Licenses from CDW-G
Move City Council approve the purchase of Microsoft software licenses, from CDW-G, using the Omnia Partners Contract No. 2018011-01 in an amount not to exceed $723,139.

13. License Series 11, Hotel/Motel Liquor License application for Sonesta International Hotels Corporation, dba Sonesta Select Phoenix Chandler
Move for recommendation to the State Department of Liquor Licenses and Control for approval of the State Liquor Job No. 135943, a Series 11, Hotel/Motel Liquor License, for Andrea Dahlman Lewkowitz, Agent, Sonesta International Hotels Corporation, dba Sonesta Select Phoenix Chandler, located at 920 N. 54th Street, and approval of the City of Chandler Series 11, Hotel/Motel Liquor License No. 300649 L11.

14. Agreement No. PD5-961-3521, Amendment No. 1, with American Traffic Solutions Inc., dba Verra Mobility, for Photo Enforcement
Move City Council approve Agreement No. PD5-961-3521, Amendment No. 1, with American Traffic Solutions, Inc., dba Verra Mobility, for photo enforcement, in a combined amount not to exceed $2,500,000, for the period of five years beginning April 1, 2021 through March 31, 2026.

15. Final Adoption of Ordinance No. 4964 Authorizing the Sale of a Parcel of City-Owned Land at the Southwest Corner of McQueen Road and Pecos Road
Move City Council approve final adoption of Ordinance No. 4964 authorizing the sale of a parcel of City-owned land at southwest corner of McQueen Road and Pecos Road to WNDG, LLC, an Arizona Limited Liability Company.

16. Project Agreement No. WW2003.401 with Garney Companies, Inc., for the Airport Water Reclamation Facility Headworks Drain Piping
Move City Council award Project Agreement No. WW2003.401 to Garney Companies, Inc., Pursuant to Job Order Contract No. JOC1914.401, for the Airport Water Reclamation Facility Headworks Drain Piping, in an amount not to exceed $391,070.

17. Professional Services Agreement No. WW2003.451, with Brown and Caldwell, Inc., for Airport Water Reclamation Facility Headworks Drain Piping Construction Management Services
Move City Council award Professional Services Agreement No. WW2003.451, to Brown and Caldwell, Inc., for the Airport Water Reclamation Facility Headworks Drain Piping Construction Management Services, in an amount not to exceed $55,050.

DISCUSSION AND POSSIBLE ACTION

18. Discussion and Possible Action on Council Public Safety Subcommittee Briefing on Crime Statistics Presentation, Impact of COVID on Public Safety, as Requested by Councilmember Orlando.

INFORMATIONAL

19. Study Session & Regular Meeting Minutes of March 3, 2021, Planning and Zoning Commission

ADJOURNMENT: The meeting adjourned at 7:26 p.m.

ATTEST: _____ _____
City Clerk Mayor

Approval Date of Minutes: April 22, 2021

CERTIFICATION

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the Study Session of the City Council of Chandler, Arizona, held on the 5th day of April 2021. I further certify that the meeting was duly called and held and that a quorum was present.

DATED this _____ day of April, 2021.

_____
City Clerk

unofficial

CHANDLER CITY COUNCIL
Work Session Meeting Minutes
Thursday, April 8, 2021

MINUTES OF THE WORK SESSION MEETING OF THE HONORABLE MAYOR AND CITY COUNCIL OF THE CITY OF CHANDLER, ARIZONA, held on Thursday, April 8, 2021, in the Chandler City Council Conference Room, 88 E. Chicago Street, Chandler, Arizona.

THE MEETING WAS CALLED TO ORDER BY MAYOR KEVIN HARTKE AT 5:00 P.M.

The following members of the Council were present:

Kevin Hartke	Mayor
Mark Stewart	Vice Mayor
René Lopez	Councilmember
OD Harris	Councilmember
Christine Ellis	Councilmember
Terry Roe	Councilmember
Matt Orlando	Councilmember

City staff present: Josh Wright, Acting City Manager; Kelly Schwab, City Attorney; Dana DeLong, City Clerk; Debra Stapleton, Assistant City Manager; Matt Burdick, Communications and Public Affairs Director; Ryan Peters, Governmental Relations & Policy Manager; Micah Miranda, Economic Development Director; Cori Garcia, Mayor and Council Communications Manager.

DISCUSSION

1. Presentation and discussion regarding the Economic Development Strategic Plan.

MAYOR HARTKE called for a staff presentation.

JOSHUA WRIGHT, Acting City Manager, introduced the discussion item and said at the Council Strategic Planning Meeting this was brought up in conversation and staff would provide more details.

MICAH MIRANDA, Economic Development Director, presented the following presentation.

- Economic Development Strategic Plan
- City Council Strategic Framework
    - City Council has created a guiding document for how decisions will be made over the next five years
    - The vision illustrated in the document emphasizes providing:
        - A high quality of life

        - Diverse job opportunities
        - Safe neighborhoods
- Economic Development's Role
    - Economic Development plays a critical role in achieving City Council's vision for Chandler.
    - Create and retain jobs
    - Develop a stable tax base
    - Wealth generation
- Economic Development Strategic Plan
    - Programs to help achieve City Council's desired outcomes for Chandler. Key components of the City's Economic Development strategy include:
        - 1. Business Attraction
        - 2. Business Climate Enhancement
        - 3. Technology Entrepreneurship
        - 4. Small Business Assistance
        - 5. Infill & Redevelopment
        - 6. Market Threat Assessments
        - 7. Competitive Positioning
        - 8. Tourism
        - 9. Education & Talent
- Business Attraction
    - Goal: Proactively engage with businesses in targeted industries/technologies.
    - Automotive Technology
    - Aviation and Aerospace
    - Advanced Business Services
    - Healthcare
    - High Tech Manufacturing
    - IT and Software

COUNCILMEMBER ORLANDO asked if there are sub-plans within each of these target areas.

MR. MIRANDA said yes, they actively pursue these through a variety of methods in multiple regions.

COUNCILMEMBER ORLANDO asked for an example of what they do in healthcare.

MR. MIRANDA said they focus on large operations so it is not easy for businesses to leave. The Dignity and Banner expansions were important and they spent a lot of effort on those projects. Mr. Miranda said they have to work with multiple departments to make projects happen. Each industry cluster is different in how they approach it.

MR. MIRANDA continued the presentation.

- Business Attraction
    - Marketing and business lead generation.
    - Pursue leads that fit the City's target industries/technologies.
    - Target companies outside the region experiencing growth.
    - Outreach to decision makers, site selectors and brokers.

    - Demonstrate the operational advantages of Chandler.
- Employment Base
    - Top Industry Clusters by Employment: Chandler vs. MAG Region
- Business Climate Enhancement
    - Goal: Foster a business climate that supports economic vitality.
    - Schedule targeted outreach visits with businesses in the community.
    - Use the outreach meetings as an opportunity to generate goodwill.
    - As appropriate, coordinate BR&E efforts with partner organizations.
    - Facilitate introductions to resource providers, as necessary.
    - Work to embed businesses in the community.
- Technology Entrepreneurship
    - Goal: Building the entrepreneurial ecosystem to attract emerging startups, encourage spin-offs, and support existing startups in scaling.
- Technology Entrepreneurship
    - Provide training and mentoring through Chandler Innovations incubator.
    - Promote Hub 249 at ASU Chandler Innovation Center as a resource.
    - Facilitate and increase access to early stage funding for startups.
    - Serve as a research tool for entrepreneurs evaluating Chandler.
    - Position Chandler as the epicenter tech based entrepreneurship.

VICE MAYOR STEWART asked if angel investing would start again.

MR. MIRANDA said yes, they have started meetings again to begin the programs and would bring options to Council.

MR. MIRANDA continued the presentation.
- Small Business Assistance
    - Goal: Building the entrepreneurial ecosystem to encourage, attract and support startups.
- Small Business Support
    - Publish Small Business Guide in English and Spanish each year.
    - Encourage residents to shop local through I Choose Chandler campaign.
    - Provide site selection services: customized demographics, identify building options, and coordinate Business Location Team meetings.
    - Co-sponsor small business workshops and events.
    - Serve as a point of contact for questions regarding City processes.

COUNCILMEMBER ROE asked if there is a welcome package for new small businesses.

MR. MIRANDA said they have not done that, but the Chandler Chamber of Commerce is involved in that. He said it is something they could take a look at.

MAYOR HARTKE said they have partnered with the Chamber in the past on something like that when they did work on an intersection.

MR. MIRANDA continued the presentation.

- Infill & Redevelopment
    - Goal: Revitalize and reuse of underutilized properties to support economic growth and neighborhood vitality
- Infill & Redevelopment
    - Facilitate the conversion of underutilized properties throughout the City.
    - Engage capable development partners.
    - Promote the benefits of the Adaptive Reuse Overlay District, Opportunity and HUB Zones to attract investment.
    - Continue to implement the Uptown Chandler and West Chandler branding initiatives.

COUNCILMEMBER HARRIS asked if this overlays the opportunity zone.

MR. MIRANDA said no, the opportunity zones are bound by McQueen and Alma School Roads and Chandler Boulevard and Pecos Road.

COUNCILMEMBER HARRIS asked if they have identified and attracted companies to the opportunity zones.

MR. MIRANDA said opportunity zones do not solve all the problems, but help identify additional capital resources. The biggest issue in the opportunity zones is land. Mr. Miranda said the most attractive sites are vacant and they have a lot of interest already. Mr. Miranda said they are never the only tool used to get projects to come in.

MAYOR HARTKE said a few years ago when the opportunity zones came about there were classes held to get the word out and it was promoted.

COUNCILMEMBER ORLANDO said this is the growth area and asked what the key impediment economically that needs to be done to further redevelopment.

MR. MIRANDA said that is the ultimate challenge. The quickest and easiest way to get sites flipped is to own the sites and do so, otherwise developers take a long time. No one wants to do parcel assemblage because it takes a long time and there is no guarantee.

COUNCILMEMBER ORLANDO said this is probably the same issue across the country and asked what is being done differently.

MR. MIRANDA said TIF, Tax Increment Financing, is a major tool that other states have. Arizona is the only state that does not allow that. Mr. Miranda said they have spoken with the legislative team and they are gaining traction with our regional partners. Mr. Miranda said another issue is infrastructure and there is opportunity on the City side to engage. Mr. Miranda said finding developers with the vision and capital is a challenge across the state.

VICE MAYOR STEWART talked about four corners retail and that even half vacant they may still be making profit if the mortgage was from 20 years ago.

MR. MIRANDA said the land value needs to increase up to the point it makes sense to demolish. Mr. Miranda said there was a tool in place to use dollars set aside for demolition costs and they cannot do it anymore because of the recent Arizona Supreme Court case.

KELLY SCHWAB, City Attorney, said the Arizona Supreme Court keeps shrinking their available tools dramatically especially on redevelopment.

MR. MIRANDA said staff is finding sites that are redevelopment ready and then go out and talk to developers who know how to do this. Mr. Miranda said these are specialty firms that work on redevelopment. Strategically as an organization, staff has direction to come up with creative solutions and get past legal hurdles.

MR. MIRANDA continued the presentation.

- Market Threat Assessments
    - Goal: Ensure operating businesses are not a flight or downsizing risk.
    - Identify companies that are growing, or at risk of downsizing or relocating.
    - Address specific issues of interest/concern to the company.
    - Maintain confidentiality while providing business assistance.
    - Produce tailored, company-specific reports that reinforce Chandler's advantageous business operating environment.

COUNCILMEMBER ORLANDO asked if business climate was a part of this.

MR. MIRANDA said the business climate enhancement or the community outreach was not necessarily an existing issue, but its generating good will and relationships. These businesses have an opportunity to leave and how they approach them is different than an outreach meeting. The meeting is different and the outcomes the business expects are different.

MAYOR HARTKE asked if a good example was PayPal when they met with them in DC.

MR. MIRANDA said yes, they had to make the case for them to stay. These conversations are tense so it is a different environment.

MR. MIRANDA continued the presentation.

- Competitive Positioning
    - Goal: Position Chandler a top-of-mind destination for targeted audiences
- Competitive Positioning
    - Communicate Chandler's competitive advantage and value proposition regionally, nationally and internationally
    - Develop highly-targeted digital campaigns aimed at specific audiences.
    - Generate interest among real estate and capital deployment firms that invest in speculative projects.
    - Conduct "fam tours" for site selection consultants and media members.

VICE MAYOR STEWART said the marketing efforts internationally are interesting. Vice Mayor Stewart asked if there was enough communication with Development Services about upcoming projects.

MR. MIRANDA said yes, they talk regularly and they are being picky about what they want. Staff is very well aligned.

COUNCILMEMBER HARRIS asked how often staff meets with high level staff within organizations to identify key partners.

MR. MIRANDA said they have community advocates, ambassadors, and partners within the State. Mr. Miranda said staff tells them what we want and how we want to go about doing it so then others can give the elevator pitch when they have the opportunity.

MR. MIRANDA continued the presentation.

- Tourism
  - Goal: Implementation of the Tourism Strategic Plan to increase visitor spending, recruit new attractions, and enhance Chandler's global brand.
- Tourism
  - Showcase Chandler as both a business and leisure travel destination.
  - Strengthen the link between tourism and business attraction efforts.
  - Target meeting and event organizers that draw visitors outside the region.
  - Capitalize on existing assets, such as parks and recreation facilities.
  - Provide market intelligence to support businesses in the tourism industry
- Education & Talent
  - Goal: Collaborate with educational partners to build the local talent pipeline.
- Education & Talent
  - Collaborate with the University of Arizona on programming in Chandler.
  - Partner with Arizona State University on utilization of ACIC makerspace.
  - Leverage relationship with Community College District.
  - Facilitate P-20 initiatives (e.g. cybersecurity, AI).
  - Lead and organize the annual Chandler Science Spectacular event.
- The Impacts
  - Economic growth has contributed to the City's healthy financial outlook.
  - Residents have access to diverse job opportunities close to home.
  - Businesses and development help fund City quality of life amenities
  - 2nd Most Prosperous Large City -Economic Innovation Group (2020)
  - 6th Most Livable City in the U.S. -SmartAsset (2020)
  - 8th Best Untapped City for Startups -Fundera (2020)
  - 13th Best Place to Find a Job -WalletHub (2021)
  - 14th Best City for Women in Tech -SmartAsset (2021)
- The Impacts
  - Innovation Economy: % of Workers in High-Tech Industries
    - 23% Chandler
    - 11% Mesa, Gilbert & Tempe
    - 10% United States

    - Chandler has an innovation mindset and this is reflected in the companies located in our community. Ability to adapt to a changing global economy helps ensure long-term economic sustainability.
- The Impacts
    - Business Hiring & Retention Program
    - PPE Reimbursement Grant
    - PPE Kit Distribution Program
    - Virtual Hiring Event
    - I Choose Chandler Marketing Campaign
    - COVID-19 business resources webpage
    - Outreach calls to businesses
- The Impacts
    - The City is well-positioned for business attraction/expansion projects:
    - Intel
        - Manufacturing
        - $20B investment
        - 3,000 jobs
    - NXP
        - Manufacturing
        - Expansion in campus
        - 100 jobs
    - VLAVI
        - Manufacturing
        - 104,000 SF facility
        - 233 jobs
    - Comtech
        - R&D/Manufacturing
        - 147,000 SF facility
        - 400 jobs
    - Honeywell
        - Manufacturing
        - 157,000 SF facility
        - 585 jobs
    - VB Cosmetics
        - Manufacturing
        - 40,000 SF HQ
        - 100 jobs
    - Rinchem
        - Semiconductor/Dist.
        - 50,000 SF expansion
        - 25 jobs
    - Local Motors
        - Autonomous Vehicles
        - 10,000 SF new HQ
        - 20 jobs

COUNCILMEMBER ORLANDO asked how they measure success in each category.

MR. MIRANDA said he would provide that information to Council.

ADJOURNMENT: The Work Session was adjourned at approximately 5:50 p.m.

ATTEST: _____ _____
City Clerk Mayor

Approval Date of Minutes: April 22, 2021

CERTIFICATION

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the Work Session of the City Council of Chandler, Arizona, held on the 8th day of April, 2021. I further certify that the meeting was duly called and held and that a quorum was present.

DATED this ___ day of April, 2021.

_____
City Clerk

unofficial

CITY OF CHANDLER COUNCIL MEETING MINUTES
Regular Meeting
Thursday, April 8, 2021

MINUTES OF THE REGULAR MEETING OF THE HONORABLE MAYOR AND CITY COUNCIL OF THE CITY OF CHANDLER, ARIZONA, held in the City of Chandler Council Chambers, 88 E. Chicago St., Chandler, Arizona, on Thursday, April 8, 2021.

THE MEETING WAS CALLED TO ORDER BY MAYOR KEVIN HARTKE AT 6:00 P.M.

The following members answered roll call:

Kevin Hartke	Mayor
Mark Stewart	Vice Mayor
OD Harris	Councilmember
René Lopez	Councilmember
Terry Roe	Councilmember
Christine Ellis	Councilmember
Matt Orlando	Councilmember

Also in attendance:	Joshua Wright	Acting City Manager
	Debra Stapleton	Assistant City Manager
	Kelly Schwab	City Attorney
	Dana DeLong	City Clerk

INVOCATION: The invocation was given by Reverend Denise Burns, Chandler Church of the Nazarene.

PLEDGE OF ALLEGIANCE: Councilmember Roe led the Pledge of Allegiance.

CONSENT AGENDA – DISCUSSION

MAYOR HARTKE said the photo radar item has been postponed and would be rescheduled to a future meeting.

MAYOR HARTKE had comments on Consent Agenda Item No. 4.

4. FY 2020-21 One-time Exceptional Performance Awards for Employees

MAYOR HARTKE said at the beginning of the pandemic, Council worked with staff to reduce spending and put a hiring and travel freeze in place. Mayor Hartke said these measures were taken over the past year as there was uncertainty over the results of the pandemic. Mayor Hartke said this is a one-time performance award to all regular full time and part time employees except for Council. Mayor Hartke said there were several million dollars in savings because of 120 vacant positions due to the hiring freeze that were not filled. Out of the vacancy savings this item would reinvest the dollars back into the employees. Mayor Hartke thanked staff for

their work over the pandemic and meeting the demands and challenges to ensure the residents' quality of life and their access to services were unaffected.

MAYOR HARTKE said the following comment was received for Consent Agenda Item No. 7.

IVETTETTE AGUILAR, Harrison St, Chandler, Arizona, 85225, submitted the following comment:
Thank you to the Serene States builder for allowing neighbors to provide feedback regarding their residential project and actively listen to the privacy concerns and implement the suggestions given. Special thanks to Mark Stewart and Matt Orlando, who actively took up this cause when brought to their attention and became great facilitators. Ivette Aguilar

COUNCILMEMBER LOPEZ thanked the volunteers for the City that serve on the Boards and Commissions, who provide input and guidance in many facets of the City. Councilmember Lopez said they keep the City running efficiently and effectively.

CONSENT AGENDA – MOTION AND VOTE

COUNCILMEMBER ORLANDO MOVED TO APPROVE THE CONSENT AGENDA OF THE APRIL 8, 2021, CITY COUNCIL MEETING; SECONDED BY COUNCILMEMBER ELLIS.

KELLY SCWAB, City Attorney, asked if the motion included the additional stipulations on Consent Agenda Item No. 7.

COUNCILMEMBER ORLANDO said yes.

MOTION TO APPROVE THE CONSENT AGENDA CARRIED UNANIMOUSLY (7-0).

CONSENT AGENDA ITEMS

1. Resolution No. 5452 Authorizing a Grant Agreement with the Federal Aviation Administration (FAA) to Accept a Coronavirus Response and Relief Supplemental Appropriation Act (CRRSA) Grant
   Move City Council pass and adopt Resolution No. 5452 authorizing a grant agreement with the Federal Aviation Administration to accept a Coronavirus Response and Relief Supplemental Appropriation Act (CRRSA) grant not to exceed $57,162 for airport operating purposes; and authorizing the City Manager, or designee, to execute the grant agreement and all other documents necessary to effect the agreement.

   BACKGROUND FROM COUNCIL MEMO:
   On December 27, 2020, the President signed the Consolidated Appropriations Act of 2021. Division M of that Act is the Coronavirus Response and Relief Supplemental Appropriation Act (CRRSA). Title IV of CRRSA provides approximately $2 billion in economic relief to eligible US airports to prevent, prepare for, and respond to the COVID-19 public health emergency. CRRSA includes a set aside amount for airports in the federal contract tower (FCT) program, of which Chandler is included. On February 12, 2021, the FAA announced that Chandler will be receiving a grant in the amount of $57,162. The funding is allocated between a non-primary amount of $23,000 and an FCT amount of $34,162. The funding may be used for airport operational expenses, however, the FCT funding must be used for costs associated with supporting the contract tower operations. The expenses can include including sanitation program expenses, payroll, operational, and debt service costs.

Staff recommends City Council pass and adopt Resolution No. 5452 authorizing a grant agreement with the Federal Aviation Administration (FAA) to accept a Coronavirus Response and Relief Supplemental Appropriation Act (CRRSA) grant not to exceed $57,162 for airport operating purposes; and authorizing the City Manager, or designee, to execute the grant agreement and all other documents necessary to effect the agreement.

Financial Implications:
No City matching funds are required to accept this grant.

2. March 2021 City Council Minutes
Move City Council approve the meeting minutes of the Study Session and the Regular Meeting of March 22, 2021, and the Work Session - Budget Workshop and Regular Meeting of March 25, 2021.

3. Board and Commission Appointments
Move City Council approve the Board and Commission appointments as recommended.

BACKGROUND FROM COUNCIL MEMO:
Airport Commission
Reappoint Dave Siegel
Appoint Chad Wakefield

Arts Commission
Reappoint Michelle Hirsch
Appoint Linnsey Amores

Board of Adjustment
Reappoint Manuel Ramirez
Reappoint Chad Wakefield

Board of Appeals
Reappoint Jeff Cullumber

Citizen's Panel for Review of Police Complaints and Use of Force
Reappoint Betty McGee
Reappoint Holly Mesnard
Reappoint Sandra Woods
Appoint Christopher Heo

Cultural Foundation
Reappoint Susan Baker
Reappoint Mike Halle
Reappoint Christian Lopez
Reappoint Julia Marreel

Domestic Violence Commisison
Appoint Polly Knape, Arizona's Children Association
Appoint Chelsea Grieve
Appoint Teresa Ferguson

Economic Development Advisory Board
Reappoint Julie Trujillo
Reappoint Cecilia Ashe
Reappoint Mike Spangenberg
Reappoint Nick Woodruff
Appoint Chase Farnsworth
Appoint Kari Zurn

Health Care Benefits Trust Board
Reappoint Val Gale

Historic Preservation Commission
Reappoint Matt Eberle
Reappoint Jeff Velasquez

Housing and Human Services Commission
Reappoint Heather Mattisson
Appoint Ryan Magel
Appoint Julie Martin

Human Relations Commission
Reappoint Jacob Bello
Appoint Garry Ong
Appoint Pamela Morris

Industrial Development Authority
Reappoint Charles Ertl
Reappoint Lee Kroll
Reappoint Shannon Wilson

Library Board
Reappoint Karla Palafox
Reappoint Maria Munoz
Appoint Dylan Martin
Appoint Michael McElhany

Mayor's Committee for People with Disabilities
Reappoint Marguerite Smith
Reappoint Ted Maish
Reappoint Janet Rosen

Merit Board
Reappoint Lon Miller

Museum Foundation
Reappoint Maris Ann Thomas
Reappoint Joshua Askey

Reappoint Martin Sepulveda
Reappoint Michelle Reid
Appoint Calvenea Malloy

Neighborhood Advisory Committee
Reappoint Amber Hutchinson
Reappoint Peter Cwik

Parks and Recreation Board
Reappoint Tim Johnson
Appoint John David

Planning and Zoning Commission
Reappoint Matt Eberle
Reappoint Gregg Pekau

Transportation Commission
Reappoint Ron Hardin
Appoint David Heineking

Workers' Compensation Trust Board
Reappoint Val Gale

4. FY 2020-21 One-time Exceptional Performance Awards for Employees
Move City Council approve a one-time exceptional performance award of $3,000 to each full-time employee and $1,500 to each part-time employee, employed as of December 31, 2020, and remaining employed through March 27, 2021, for an estimated cost of $5,530,000 across all Funds; and $3,060,000 in Fund Contingency Transfers to only be used should vacancy savings appropriation not be sufficient in a specific Fund/Cost Center combination, including General Fund of $2,800,000, to various Cost Centers within General Fund, Special Revenue Funds (i.e. Grant-217, Community Development Block Grant (CDBG)-219, Public Housing Authority (PHA)-224, 227, 230, 232, 233) and Self Insurance Funds (i.e. Workers Compensation-736, Insured Liability-737, Uninsured Liability-738, Short Term Disability-739, and Medical-741); Water Fund 605 of $200,000; and Solid Waste Fund 625 of $60,000.

BACKGROUND FROM COUNCIL MEMO:
In FY 2020-21, based on the potential impacts of the COVID-19 pandemic, a decision was made to hold ongoing market increases for general employees until the City was able to fully realize the impact the pandemic would have on City revenues and operations. As has been reported through budget briefings, the City of Chandler has performed better than the revised budget during this unprecedented time. Additionally, vacant City positions were held for several months as part of the budget considerations, which placed additional responsibilities on employees. In a typical year, the City anticipates vacancy savings of 1.5% of total personnel costs. During FY 2020-21, Chandler is estimating vacancy savings of over 3.0% ($5M) in General Fund or over 4% ($8M) in all funds due to the high number of vacant positions. In addition to the pandemic, other challenges were faced by the City and its employees. Team Chandler rose to the occasion and maintained a high level of service to Chandler residents while keeping City operations and services functioning.

In light of City employees' outstanding performance over the past year, I am recommending employees who were employed as of December 31, 2020, and who have remained employed through March 27, 2021, receive a one-time exceptional performance award to be included in the April 15, 2021, regular pay check. This award includes 1,522 full-time employees at $3,000 each and 29 regular part-time employees at $1,500 each. The total cost, with employer benefits, is estimated to be $5,530,000 in one-time funding across all funds. Although vacancy savings exists from budgeted positions, Fund Contingency Transfers totaling $3,060,000 are needed in various funds to ensure adequate appropriation in the cost centers where payments will be applied. If approved, a City-wide communication will be provided prior to the payment with additional details.

5. Final Adoption of Ordinance No. 4961, PLH20-0023 Pecos and McQueen Retail Rezoning

Move City Council adopt Ordinance No. 4961, approving PLH20-0023 Pecos and McQueen Retail located at the southwest corner of Pecos and McQueen roads, Rezoning from Agricultural District (AG-1) to Planned Area Development (PAD) for Neighborhood Commercial (C-1) uses, subject to the conditions as recommended by Planning and Zoning Commission.

BACKGROUND FROM COUNCIL MEMO:
The site is approximately 3.5 acres. The applicant is currently working with the City to acquire an approximate 2,660 sq. ft. City of Chandler-owned parcel located at the immediate corner of the intersection (an ordinance authorizing the sale of this parcel also appears as a separate item on this agenda). Site is currently vacant

Ordinance introduced and tentatively adopted on March 25, 2021.

Surrounding Land Use Data:

North	Pecos Rd., then commercial	South	Single-family residential
East	McQueen Rd., then single-family residential and vacant commercial	West	Single-family residential

General Plan and Area Plan Designations:

	Existing	Proposed
General Plan	Neighborhoods	No change
Chandler Airpark Area Plan	Neighborhood Commercial	No change

Proposed Development

Site Area	3.5 acres plus future acquisition of approximate 2,660 sq. ft. City parcel
Building Area	Pad A: 2,306 sq. ft. (restaurant) Pad B: 2,800 sq. ft. (restaurant) Pad C: 13,000 sq. ft. (daycare) Total : 18,106 sq. ft.
Building Height (max.)	22 ft.
Building Setbacks	Required: Arterial landscaped intersection 50 ft. by 250 ft Proposed: 35 ft. min. by 223 ft. along Pecos Rd. 23 ft. min. by 250 ft. along McQueen Rd. West: 20ft. Accessory structure

	50 ft. Main building South: 50 ft.
Parking Required	101 parking spaces
Parking Provided	112 parking spaces
Building Architecture	Contemporary with stucco, brick veneer, metal railings, and steel
Comprehensive Sign Program	One development sign, two monument signs, wall-mounted signs

Review and Recommendation
Planning staff finds the proposal is consistent with the General Plan designation of Neighborhoods and the Chandler Airpark Area Plan designation of Neighborhood Commercial. The General Plan land use designation allows Neighborhood Commercial uses within developments located at arterial intersections to serve commercial needs of low-density residential communities.

The site layout provides three pad sites, including two proposed restaurants and a daycare. Pad site A is proposed as a Starbucks drive-through. Pad site B is proposed as a future restaurant/drive-through and a daycare is proposed for Pad C. Building architecture is contemporary. Building and site layout comply with the intent of the Commercial Design Standards.

Late-hour business policy defines any restaurant that opens its doors to the public one or more hours between midnight and 6 a.m., one or more days a week. Also, the policy is applicable when commercial development is within 300 ft. of existing residential zoning. The proposed Starbucks anticipates business hours from 4:30 a.m. to 10 p.m., daily. These hours and building distance of approximately 206 ft. to the west residentially-zoned parcels require approval of the proposed businesses hours from 4:30 a.m. to 6 a.m. Mitigation proposed includes an 8 ft. tall solid wall along the entire site perimeter and several landscaped areas.

The applicant requests relief from the Zoning Code requirement that initial construction include a minimum of 12,000 sq. ft. of building area in Phase One. The request is to allow the flexibility to construct Pads B and C in future phases. Development Booklet Attachment A (see attached) identifies improvements that will be completed during phase one, which includes Pad A and all site improvements including landscaping, driveways, and parking except for Pad B building area on the south and Pad C and associated parking area to the north of Pad C. Pad sites B and C would be covered with decomposed granite until market conditions allow development.

The second request is to reduce the 50 ft. by 250 ft. landscape intersection along both Pecos and McQueen roads. The reduced landscaped intersection allows the two drive-through pad sites additional distance from existing residential and the proposed daycare. The applicant is currently working with the City's Real Estate division to purchase the City owned parcel of approximately 2,660 sq. ft. located at the immediate corner of the site.

Staff supports the requested waivers due to the infill nature of the site, site acreage and driveway location constraints. Staff finds the proposal to be consistent with the goals of the General Plan and recommends approval subject to conditions.

Traffic Analysis

A Traffic Impact Analysis was prepared to analyze existing conditions and traffic with the proposed development. Based on the analysis, traffic impacts of the proposed development could be mitigated by making adjustments to the existing traffic signal timing at the McQueen Road/Pecos Road intersection to maintain acceptable levels of service. Additionally, the Transportation Engineering Division will continue to work with the applicant to establish a circulation plan for the Day Care/Pre-K. This is being done in an effort to document pick-up/drop-off procedures and minimize potential implications to the adjacent public roadways that have occurred with similar land uses. Staff recommends a stipulation to address the future daycare's drop off/pick up circulation plan.

Public / Neighborhood Notification
This request was noticed in accordance with the requirements of the Chandler Zoning Code.
A virtual neighborhood meeting was held on July 21, 2020. Ten residents attended virtually to obtain project information. Questions and concerns voiced relate to traffic, construction timing, existing irrigation ditch, drive through locations, vehicle exhaust, land uses, and children's safety (daycare). No opposition to the request was stated.
Planning staff received letters from residents in opposition to the proposed Starbucks stating they would rather support local businesses.

Planning and Zoning Commission Vote Report
Planning and Zoning Commission meeting March 3, 2021
Motion to Approve
In Favor: 5 Opposed: 1 (Pekau) Absent: 1 (Kimble)

At the January 20, 2021, Planning and Zoning Commission meeting, the case was continued to conduct a Design Review Committee (DRC). On February 3, 2021, the DRC provided the applicant suggestions on revising the site plan which include shifting Pad sites A and B further away from the proposed daycare. The applicant requested further continuance to the March 3, 2021, Planning and Zoning Commission meeting to allow additional time to address the DRC's guidance. At the March 3 meeting, the Planning and Zoning Commission modified Preliminary Development Plan stipulation number 9 by adding "e", effectively requiring all offsite and onsite improvements during phase one except for building pads B and C. The drive-through lane for Pad B is included as an exception to the required phase one improvements.

Recommended Conditions of Approval
Rezoning
1. Development shall be in substantial conformance with the Development Booklet, entitled "Pecos and McQueen Retail" and kept on file in the City of Chandler Planning Division, in File No. PLH20-0023, modified by such conditions included at the time the Booklet was approved by the Chandler City Council and/or as thereafter amended, modified or supplemented by the Chandler City Council.
2. Completion of the construction of all required off-site street improvements including but not limited to paving, landscaping, curb, gutter and sidewalks, median improvements and street lighting to achieve conformance with City codes, standard details, and design manuals.
3. Right-of-way dedications to achieve full half-widths, including turn lanes and deceleration lanes, per the standards of the Chandler Transportation Plan.
4. Late hour businesses shall not be open to the public from 10 p.m. to 4:30 a.m., seven days a week.

6. Introduction of Ordinance No. 4968, PLH20-0063 McKinley Glenn (Staff Requests Continuance to the May 13, 2021, City Council Meeting)

Move City Council continue PLH20-0063 McKinley Glenn, located east of the southeast corner of Chandler Heights and Cooper roads to the May 13, 2021, Council meeting, as recommended by Planning and Zoning Commission.

BACKGROUND FROM COUNCIL MEMO:
At the March 17, 2021, Planning and Zoning Commission Meeting, staff recommended a continuance to allow the applicant more time to complete the preliminary plat for the proposed development.
Planning and Zoning Commission Vote Report
Planning and Zoning Commission meeting March 17, 2021
Motion to Approve continuance to the April 21, 2021, Planning & Zoning Commission meeting
In Favor: 5 Opposed: 0 Absent: 2 (Rose, Pekau)

7. Introduction of Ordinance No. 4967, PLH20-0052/PLT20-0039 Serene Estates
Rezoning
Move City Council introduce and tentatively adopt Ordinance No. 4967 approving PLH20-0052 Serene Estates, Rezoning from Neighborhood Commercial (C-1) to Planned Area Development for single-family residential, located northwest of the northwest corner of Galveston and Hartford streets, subject to the conditions as recommended by Planning and Zoning Commission.
Preliminary Development Plan
Move City Council approve Preliminary Development Plan PLH20-0052 Serene Estates for subdivision layout and housing product, located northwest of the northwest corner of Galveston and Hartford streets, subject to the conditions as recommended by Planning and Zoning Commission.
Preliminary Plat
Move City Council approve Preliminary Plat PLT20-0039 Serene Estates, located northwest of the northwest corner of Galveston and Hartford streets, subject to the condition recommended by Planning and Zoning Commission.

BACKGROUND FROM COUNCIL MEMO:
Approximately 2.3 net acres and undeveloped. Site zoned C-1, allowing for commercial uses to support the immediate neighborhood. Subject site wraps an existing commercial corner with a laundromat, convenience store, and restaurant. A Use Permit to allow a U-Haul facility on a portion of the subject site was denied in 2012. General Plan designates the site as Neighborhoods and is considered infill. Project consist of 15 lots totaling 6.4 du/ac

Surrounding Land Use Data:

North	Alley then single family	South	Galveston Street then single-family and two-story apartments
East	Hartford Street then two-story apartments	West	Alley then single family

General Plan and Area Plan Designations:

	Existing	Proposed
General Plan	Neighborhoods	No Change

Proposed Development

	Single family subdivision
# of Lots	15 single family lots

Density	6.4 dwelling units per acre
Building Setbacks (min.)	Front – 8.6 ft. to livable, 20 ft. to garage from back of sidewalk Sides – 5 ft. & 5 ft. Rear - 10 ft., designated lots in exhibit allow for single-story, attached patios to encroach 5 ft. into 10 ft. setback
Lot Size	Lots range from 3,612 sq. ft. to 6,748 sq. ft.
Lot Coverage (max.)	65 percent
Building Height (max.)	All homes two-story; 28 ft. to midpoint of peak
Architecture Theme	Contemporary and Farmhouse
Number of Elevations	6
House Size	1,795 sq. ft. to 2,292 sq. ft.
Number of Floor Plans	3
Parking Spaces	Each lot provides a two-vehicle garage with driveways On-street parking provided on both sides of street; subdivision is not gated

Review and Recommendation
Planning staff finds the proposal consistent with the General Plan. Due to the infill nature of the site, the lots are smaller than adjacent single-family homes to the west and north. However, a twenty-foot alley separates the existing homes and the proposed development. The proposed two-story product is an appropriate transition from the neighborhood commercial to the single family lots. The proposed single family subdivision will provide a public local street through the development, which allows for parking on both sides of the street for guests and residents. An amenity is not proposed due to size constraints of providing a public street, but a public park (Navarrete Park) and two schools are within walking distance of the proposed development.

Due to the infill nature of the site, the Residential Development Standards (RDS) for subdivision layout are not applicable. However, the RDS guidelines remain applicable to the architectural design of the homes. The proposed single family residential subdivision meets the intent of development standards and residential design guidelines. In order to provide private covered patios for each lot, eight lots request to encroach five (5) feet into the rear yard setback to provide an adequate patio cover. Some to these lots have the ability to build the private patio in the side yard with the appropriate floor plan. As recommended by Planning staff, all lots are required to provide a covered patio in either the rear or side yard at the time of construction. Staff finds the proposal to be consistent with the goals of the General Plan and Planning & Zoning Commission recommends approval subject to conditions.

Public / Neighborhood Notification
This request was noticed in accordance with the requirements of the Chandler Land Use and Zoning Code. To comply with CDC social distancing guidelines, the applicant hosted a digital neighborhood meeting on February 10, 2021. Ten (10) households attended the virtual meeting; two residents asked questions about the proposal. One resident asked about the proposed walls along the alley, construction timelines and cost of homes. The other resident had concerns with two-story homes adjacent to single-story homes regarding privacy issues, as well as concerns with having a Homeowner's Association (HOA) for the new subdivision as they thought it meant excluding the proposed subdivision from the City's rules.

Planning staff has received one phone call after the neighborhood meeting from the concerned resident who attended the meeting and asked questions. Staff discussed their concerns regarding: the proposed architecture of the homes is "too modern" for the surrounding neighborhood; two-story homes adjacent to single-story; and the resident thought the property should develop as a community center or library for the neighborhood children. The resident is opposed to the request and has surveyed adjacent homeowners: four letters are attached. Additionally, a video was made by the resident and emailed to Mayor and Council. Planning staff has received a letter of support from a resident who attended the neighborhood meeting: their statement of support is attached.

Planning and Zoning Commission Vote Report
Planning and Zoning Commission meeting March 17, 2021
Motion to Approve
In Favor: 5 Opposed: 0 Absent: 2 (Rose, Pekau)

During the Planning and Zoning Commission Study Session, additional Preliminary Development Plan stipulations 10-15 were added to enhance the proposed housing elevations and add monument signs at both entries. Both items will be reviewed by staff administratively.

Recommended Conditions of Approval
Rezoning
Planning and Zoning Commission recommends the City Council approve of rezoning from C-1 to PAD for single family residential, subject to the following conditions:

1. Development shall be in substantial conformance with the Development Booklet, entitled, "Serene Estates" and kept on file in the City of Chandler Planning Division, in File No. PLH20-0052, modified by such conditions included at the time the Booklet was approved by the Chandler City Council and/or as thereafter amended, modified or supplemented by Chandler City Council.
2. Completion of the construction of all required off-site street improvements including but not limited to paving, landscaping, curb, gutter and sidewalks, median improvements and street lighting to achieve conformance with City codes, standard details, and design manuals.
3. The developer shall be required to install landscaping in the arterial street median(s) adjoining this project. In the event that the landscaping already exists within such median(s) the developer shall be required to upgrade such landscaping to meet current City Standards.
4. Right-of-way dedications to achieve full half-widths, including turn lanes and deceleration lanes, per the standards of the Chandler Transportation Plan.
5. Minimum setbacks shall be as provided below and further detailed in the development booklet:

Front yard setbacks	8.6 ft. to livable; 20 ft. to garage from back of sidewalk
Side yard setbacks	5 ft. and 5 ft.
Rear yard setback	10 ft., designated lots in "Exhibit B" allow for single-story, attached patios to encroach 5 ft. into 10 ft. setback

Preliminary Development Plan
Planning and Zoning Commission recommends the City Council approve the Preliminary Development Plan, subject to the following conditions:

1. Development shall be in substantial conformance with the Development Booklet, entitled "Serene Estates" and kept on file in the City of Chandler Planning Division, in File No. PLH20-0052, modified

by such conditions included at the time the Booklet was approved by the Chandler City Council and/or as thereafter amended, modified or supplemented by the Chandler City Council.

2. The site shall be maintained in a clean and orderly manner.
3. The landscaping in all open-spaces shall be maintained by the property owner or property owners' association, and shall be maintained at a level consistent with or better than at the time of planting.
4. The landscaping in all rights-of-way shall be maintained by the adjacent property owner or property owners' association.
5. Landscaping plans (including for open spaces, rights-of-way, and street medians) and perimeter walls shall be approved by the Planning Administrator.
6. The covenants, conditions and restrictions (CC & R's) to be filed and recorded with the subdivision shall mandate the installation of front yard landscaping within 180 days from the date of occupancy with the homeowners' association responsible for monitoring and enforcement of this requirement.
7. Sign packages, including free-standing signs as well as wall-mounted signs, shall be designed in coordination with landscape plans, planting materials, storm water retention requirements, and utility pedestals, so as not to create problems with sign visibility or prompt the removal of required landscape materials.
8. Preliminary Development Plan approval does not constitute Final Development Plan approval; compliance with the details required by all applicable codes and conditions of the City of Chandler and this Preliminary Development Plan shall apply.
9. All lots shall provide a cover patio in either the rear or side yard at the time of construction.
10. Add more articulation to roof such as a dormer to 2072 farmhouse plan.
11. Left elevation on both 1795 plans shall be enhanced to create more articulation.
12. The front elevation of the 1795 contemporary plan shall break up the horizontal element of the porch roof to create vertical elements.
13. Plan 2292 contemporary shall create more articulation on the rear to mimic the front elevation.
14. Monument signs shall be added to both entrances to be architecturally compatible with the materials and colors of the homes.
15. Same elevation shall not be built side by side.

Preliminary Plat
Planning and Zoning Commission recommends the City Council approve the Preliminary Plat, subject to the following condition.

1. Approval by the City Engineer and Planning Administrator with regard to the details of all submittals required by code or condition.

8. Use Permit and Entertainment Use Permit, PLH20-0054 BAR @118W
Move City Council approve Use Permit and Entertainment Use Permit, PLH20-0054 Bar @118W, located at 118 W. Boston Street, subject to the conditions recommended by Planning and Zoning Commission.

BACKGROUND FROM COUNCIL MEMO:
Zoned as City Center District (CCD). Zoning Code requires Use Permit approval for bar or cocktail lounge in all zoning districts. Zoning Code requires Entertainment Use Permit approval when outdoor speakers and/or live entertainment is provided and the establishment is located within 1,320 feet of residential property. The subject site is located approximately 292 feet east of existing residential properties.

Surrounding Land Use Data:

North	Abandoned building (CCD)	South	Commercial stores and restaurants (CCD)
East	Eyelash extensions & offices (CCD)	West	Chiropractic office (CCD)

Proposed Development:

Building/Suite Area	757 sq. ft. building & 1,150 sq. ft. courtyard
# of employees	10-12 employees
Hours of operation	10:00AM-2:00AM Daily
Hours of entertainment	5 small outdoor speakers will provide background music during hours of operation 10:00 AM-2:00 AM No live entertainment will be provided
# of seats	Approximately 29 indoor seats and 25 patio seats

Review and Recommendation:
Planning staff finds the use permit request for a bar compatible with the surrounding uses. The hours of operation do conflict with the commercial and office uses. The omission of live entertainment will further help the bar blend into the commercial/office strip. The entertainment use permit is for background music only in their courtyard. The bar expects to be busier at night after 5:00 P.M., when the commercial and office uses are closed for the night. The establishment shall provide a contact phone number for a responsible person to any interested neighbors and property owners to resolve any noise complaints that may occur. Planning staff finds the proposal to be consistent with the goals of the General Plan and Area Plan and Planning & Zoning Commission recommends approval subject to conditions.

General Plan and Area Plan Designations

2016 General Plan	Neighborhood & Downtown Chandler Growth Area
Downtown - South Arizona Avenue Area Plan	Urban commercial & Future Growth Area

Planning staff finds the proposal to be consistent with policies of the General Plan that call for a variety of non-residential uses such as commercial, institutional, public facilities, and commercial offices. The General Plan Downtown Chandler Growth Area is called out as a destination for arts, entertainment, tourism, specialty retail, and special events.

Planning staff also finds the proposal to be consistent with policies of the Downtown-South Arizona Avenue Area Plan as urban commercial denotes areas that are appropriate for retail, restaurant, and personal services. The future growth area denotes that the area is intended for future expansion of the cultural and entertainment category, which includes support uses such as performing arts, art galleries, hotels, retail, restaurant, dance clubs, cinemas, and amusement arcades.

Public / Neighborhood Notification
This request was noticed in accordance with the requirements of the Chandler Zoning Code. A neighborhood meeting was held on March 3, 2021, via Zoom. There was one attendee. One neighbor was concerned about live entertainment potentially being provided; the applicant advised the neighbor that there will be none. As of the writing of this memo, Planning staff is unaware of opposition to the request.

Planning and Zoning Commission Vote Report

Planning and Zoning Commission meeting March 17, 2021
Motion to Approve
In Favor: 4 Opposed: 0 Absent: 2 (Pekau & Rose)

Recommended Conditions of Approval
Planning staff finds the request is in compliance with the General Plan and the Planning & Zoning Commission recommends approval of Use Permit for bar and Entertainment Use Permit for speakers on outside courtyard, subject to the following conditions:

1. Substantial expansion or modification beyond the approved attachments (Floor Plan and Narrative) shall void the Use Permit and require new Use Permit application and approval for a bar.
2. Substantial expansion or modification beyond the approved attachments (Floor Plan and Narrative) shall void the Entertainment Use Permit and require new Entertainment Use Permit application and approval.
3. The Use Permit is non-transferable to any other location.
4. The Entertainment Use Permit is non-transferable to any other location.
5. The site shall be maintained in a clean and orderly manner.
6. No noise shall be emitted from external speakers or live entertainment in such a manner that exceeds the general level of noise emitted by uses outside the premises of the business and disturbs adjacent businesses and residential areas.
7. The establishment shall provide a contact phone number for a responsible person (i.e., bar owner and/or manager) to any interested neighbors and property owners to resolve noise complaints quickly and directly.
8. The Use Permit for a bar shall remain in effect for two (2) years from the date of City Council approval. Continuation of the Use Permit for a bar beyond the expiration date shall require reapplication to and approval by the City of Chandler.
9. The Entertainment Use Permit shall remain in effect for two (2) years from the date of City Council approval. Continuation of the Entertainment Use Permit beyond the expiration date shall require reapplication to and approval by the City of Chandler.

9. Preliminary Development Plan, PLH20-0067 The Johnathan
Move City Council approve Preliminary Development Plan, PLH20-0067 The Johnathan, located at 55 N. Arizona Place, subject to the conditions as recommended by Planning and Zoning Commission.

BACKGROUND FROM COUNCIL MEMO:
38,400 Square Foot Site, 105,000 Square Foot Building. Subject site zoned Planned Area Development (PAD) for Office, Retail and Parking Garage Development in 1997. The original Preliminary Development Plan (PL98-0142 Chandler Office Center) for signage was approved in 1999.

Surrounding Land Use Data:

North	Across Buffalo Street: Vacant lot zoned CCD	South	Across Commonwealth Avenue: Existing building zoned PAD
East	City Facilities including Library and Development Services Building	West	Across Arizona Place: City Park Zoned CCD

Proposed Development: Signage

	Existing (PL98-0142)	Proposed
Type of signage	Major Tenant: 17,500 square feet of	Major Tenant: 15,000 square feet of

	leased space or more Minor Tenant: First-floor occupancy and 5,000 square feet or more of leased space	leased space or more Minor Tenant: 15,000 square feet or less of leased space Retail Sign: Retail Tenants Center ID Sign: The Johnathan Entry Wall Sign: The Johnathan
Maximum number of signs allowed per tenant	Major Tenant: Two (2) Minor Tenant: One (1)	Major Tenant: Two (2) Minor Tenant: One (1) Retail Tenant: One (1) Center ID Sign: One (1) Entry Wall Sign: One (1)
Maximum number of signs allowed on the building concurrently	Four (4)	Major Tenant: Four (4) Minor Tenant: Four (4) Retail: Six(6) Center ID: One (1) Entry Wall: One (1)
Signage type location	Major Tenant: -Between 2nd and 3rd floor & above the 5th floor Minor Tenant: Between 2nd and 3rd floor	Major Tenant: Above the 5th floor Minor Tenant: Above 2nd floor (If a minor tenant is located on the 3rd floor, their sign may be placed on the upper sign band) Retail Sign: Above colonnade Center ID Sign: Above first-floor entry wall Entry Wall Sign: Mounted on entry block wall
Maximum Sign Dimensions	Major Tenant & Minor Tenant: -Minimum letter height of 24'' and maximum letter height of 36'' -Maximum sign width varies by sign band location	Major Tenant: 36'' x 504'' Minor Tenant: 24'' x 301.6'' Retail Tenant: 20'' x 176.3'' Center ID Sign: 20'' x 216.8'' Entry Wall Sign: 18'' x 81''
Sign Material & Finish	Major Tenant: -Non-illuminated letters to fabricated from a brush stainless steel reverse pan channel letter/logo with 5'' deep returns -Illuminated letters Logo with brushed stainless steel returns and ¾'' stainless steel trim caps -Letter style and logo are subject to landlord approval Minor Tenant: -5'' deep-pan channel letters -Logo with brushed stainless steel returns and ¾'' stainless steel trim caps -Letter style and logo are subject to landlord approval	Major Tenant: 3'' deep individual pan channel letters Letter style and logo are subject to the landlord Minor Tenant: 3'' deep individual pan channel letters Letter style and logo are subject to the landlord Retail Tenant: 3'' deep individual pan channel letters with finished backs Letter style and logo are subject to the landlord Center ID Sign: 3'' deep, panel channel lettering. Returns finished backs and thin trim retailer painted white Entry Wall Sign: 1/4'' thick flat cut out

		aluminum lettering painted black
Illumination	Signs located above the 5th floor are to be non-illuminated & Signs located between the 2nd and 3rd floor are to be illuminated Major Tenant: Internal illumination (white neon) Minor Tenant: Internal illumination (white neon)	Major Tenant: Halo illuminated with white LED Minor Tenant: Halo illuminated with white LED Retail Tenant: Non illuminated Center ID Sign: Face illuminated with white LED Entry Wall Sign: Non illuminated

Review and Recommendation:
Changes to the signage have not occurred since originally approved in 1999. The Preliminary Development Plan (PDP) to amend the existing sign plan comes at a time when the building is being updated to provide a more modern look. Planning staff finds that the request for the amendment to the existing Comprehensive Sign Plan meets the intent of the Sign Code and the proposed signage is architecturally integrated with the building and provides an updated appearance that is harmonious with the building's remodel.

Public / Neighborhood Notification
The request was noticed in accordance with the requirements of the Chandler Zoning Code. A neighborhood meeting was held on March 9, 2021. No neighbors were in attendance. Planning staff received one (1) comment in support of the request. As of the writing of this memo, Planning staff is not aware of any opposition to the request.
Planning and Zoning Commission Vote Report
Planning and Zoning Commission meeting March 17, 2021
Motion to Approve
In Favor: 5 Opposed: 0 Absent: 2 (Rose & Pekau)

Recommended Conditions of Approval
Planning staff finds the request is in compliance with the General Plan and the Planning and Zoning Commission recommends approval of the Preliminary Development Plan, subject to the following conditions:

1. Signage shall be in substantial conformance with the elevations, entitled Exhibits and kept on file in the City of Chandler Planning Division, in File No. PLH20-0067, modified by such conditions included at the time the exhibit was approved by the Chandler City Council and/or as thereafter amended, modified or supplemented by the Chandler City Council.
2. Signs shall be designed in coordination with landscape plans, planting materials, storm water retention requirements, and utility pedestals, so as not to create problems with sign visibility or prompt the removal of required landscape materials.

10. Resolution No. 5458, Authorizing Support for a Foreign Trade Zone Application for Viavi Solutions, Inc.; Manufacturing Facility to be Located at 3455 South McQueen Road

Move to approve Resolution No. 5458, authorizing support for a Foreign Trade Zone application for Viavi Solutions, Inc.; manufacturing facility to be located at 3455 South McQueen Road; authorizing support for a property tax reclassification from class one to class six for all new personal property; authorizing a development agreement between Viavi and the City of Chandler; authorizing the execution of an Intergovernmental Agreement between the City of Chandler and the City of Phoenix;

and authorizing the Mayor to sign the Resolution and related documents as approved by the City Attorney.

BACKGROUND FROM COUNICL MEMO:
Viavi is a manufacturer of network testing, measurement, assurance and light management and optical coatings products and technologies. Viavi has more than 50 locations throughout the world and over 3,600 employees. The company generated more than $1 billion in revenue during its last fiscal year and is listed on the Nasdaq under ticker symbol "VIAV." In late 2020, the City's Economic Development Division began engaging with Viavi regarding two separate projects: a new manufacturing operation and a headquarters relocation out of San Jose, California.

Viavi has undertaken a competitive site selection process to evaluate multiple metropolitan areas outside of Arizona and multiple cities within Metro Phoenix. The company has short-listed an existing industrial building in Chandler, located at 3455 South McQueen Road. The building is under consideration for both the manufacturing project and the headquarters project. Over the next three years, these two combined projects have the potential to bring 233 jobs to Chandler at an average salary of $139,820. In addition, Viavi anticipates making a capital investment of $96,311,609. Viavi has expressed that obtaining Foreign Trade Zone (FTZ) status for the property is a primary factor in its site selection process. FTZ status confers certain benefits to exporters, including paying reduced duty rates on manufactured products. Within Arizona, activated FTZ sites also are eligible for a property tax reclassification benefit. Real and personal property can be reclassified from class one to class six property, which carries a lower assessment ratio (5% instead of 18%).

Viavi has requested City support to obtain FTZ status and the property tax reclassification benefit. In consideration of this support, the company has agreed to only pursue reclassification for new personal property that would be located within its Chandler FTZ site. Additionally, the development agreement stipulates that Viavi's headquarters must be located in Chandler for a minimum of five years. To obtain the property tax reclassification benefit, the company must provide concurrence letters from each taxing jurisdiction that would be affected by the reclassification. Viavi's FTZ consultant is responsible for requesting these concurrence letters and this process has begun. The consultant has received a concurrence letter from Chandler Unified School District stating their support for this property tax reclassification. The resolution included with this Council item would serve as the City of Chandler's concurrence letter.

To obtain FTZ status, an application must eventually be submitted to the federal Foreign Trade Zones Board. The application would first be submitted to the City of Phoenix, which serves as grantee for FTZ No. 75, covering Chandler and other areas in Metro Phoenix. If Chandler City Council approves this resolution with authorization to enter into an intergovernmental agreement with the City of Phoenix, the next step would be for the City of Phoenix to submit Viavi's application to the Foreign Trade Zones Board requesting the designation of an FTZ subzone at the site under consideration in Chandler.

Financial Implications:
Property tax reclassification from class one to class six for all new personal property. This is a statutory benefit available in Arizona for companies that receive Foreign Trade Zone status.

11. Agreement No. IT8-920-3889, Amendment No. 3, with Neudesic, LLC, for Annual Application Support Services

Move City Council approve Agreement No. IT8-920-3889, Amendment No. 3, with Neudesic, LLC, for annual application support services, in the amount of $123,000, for the period of May 1, 2021, through April 30, 2022.

BACKGROUND FROM COUNCIL MEMO:
The Capital Projects Division manages approximately $900 million in Capital Improvement Projects (CIP). In 2018, the division implemented a computerized project management system to leverage project information for transparency, more efficient management and automated reporting. Phase 1 consisted of developing the Core Portal, where all projects have high-level reports within a system dashboard that displays the status of each project's life-cycle. Phase 2 leveraged the contract fee schedules for streamlined and automated payments to consultants and contractors. Phase 3 and Phase 4 are planned for the future and will allow automated data entry and creation of documents including document sharing, team communication and integrated project calendars. Neudesic, LLC is the vendor that provides application support and maintenance for this system.

12. Purchase of Microsoft Software Licenses from CDW-G
Move City Council approve the purchase of Microsoft software licenses, from CDW-G, using the Omnia Partners Contract No. 2018011-01 in an amount not to exceed $723,139.

BACKGROUND FROM COUNCIL MEMO:
The Information Technology Department is seeking the renewal of the Enterprise Agreement with Microsoft, which includes licensing for Citywide subscriptions for 365, SQL licensing for critical application services, Biztalk licenses for application integrations, Windows 10 licensing for desktop/laptop computers, Windows Server licensing for Infrastructure and Applications, and Sharepoint licensing for departmental applications.

13. License Series 11, Hotel/Motel Liquor License application for Sonesta International Hotels Corporation, dba Sonesta Select Phoenix Chandler
Move for recommendation to the State Department of Liquor Licenses and Control for approval of the State Liquor Job No. 135943, a Series 11, Hotel/Motel Liquor License, for Andrea Dahlman Lewkowitz, Agent, Sonesta International Hotels Corporation, dba Sonesta Select Phoenix Chandler, located at 920 N. 54th Street, and approval of the City of Chandler Series 11, Hotel/Motel Liquor License No. 300649 L11.

BACKGROUND FROM COUNCIL MEMO:
This application for a liquor license was posted for hearing on April 8, 2021. The Police Department reports no objections to the issuance of this license, and no written protests pursuant to A.R.S. 4-201(B) have been received. With a Series 11, Hotel/Motel Liquor License, the business may sell all alcoholic beverages for on-premise consumption only. The property was previously known as Courtyard by Marriott Phoenix Chandler.

14. Final Adoption of Ordinance No. 4964 Authorizing the Sale of a Parcel of City-Owned Land at the Southwest Corner of McQueen Road and Pecos Road
Move City Council approve final adoption of Ordinance No. 4964 authorizing the sale of a parcel of City-owned land at southwest corner of McQueen Road and Pecos Road to WNDG, LLC, an Arizona Limited Liability Company.

BACKGROUND FROM COUNCIL MEMO:

WNDG, LLC, is developing a retail center at the southwest corner of McQueen and Pecos roads. Consideration of the applicant's rezoning appears as a separate item on this City Council agenda. There is a small City-owned parcel at this location that was previously used as a wastewater lift station. WNDG, LLC, has offered to pay the City five hundred dollars ($500.00) for the parcel so that it can be added into their development. This amount is a typical value the City pays for remnant parcels when acquiring portions within existing roadways. This parcel is an uneconomic remnant of little value and must be maintained by the City at the expense of its citizens. WNDG, LLC, will landscape the parcel and maintain it in the future. Staff has reviewed and approved the legal description and recommends City Council approve the sale of the property to WNDG, LLC. This Ordinance was introduced and tentatively adopted on March 25, 2021.

15. Project Agreement No. WW2003.401 with Garney Companies, Inc., for the Airport Water Reclamation Facility Headworks Drain Piping
Move City Council award Project Agreement No. WW2003.401 to Garney Companies, Inc., Pursuant to Job Order Contract No. JOC1914.401, for the Airport Water Reclamation Facility Headworks Drain Piping, in an amount not to exceed $391,070.

BACKGROUND FROM COUNCIL MEMO:
The Airport Water Reclamation Facility (AWRF), located at 905 E. Queen Creek Road, has been in operation since 1997. As wastewater enters the headworks building, it passes through filter screens to remove large debris utilizing a network of concrete channels. These channels are designed to be periodically drained to fully access the filter screens for maintenance and repair. However, the valves and piping associated with this drain system are in poor condition, and City staff is limited in their maintenance activities on the filter screens.

The project scope of work consists of removal and replacement of valves, piping, and appurtenances associated with the channel drainage system in the AWRF headworks building. The work will be coordinated with AWRF staff to minimize disruption to the treatment process. The contract completion time is 180 calendar days following Notice to Proceed. A related Professional Services Agreement with Brown and Caldwell, Inc., for the Airport Water Reclamation Facility Headworks Drain Piping Construction Management Services, is also scheduled for this City Council meeting.

16. Professional Services Agreement No. WW2003.451, with Brown and Caldwell, Inc., for Airport Water Reclamation Facility Headworks Drain Piping Construction Management Services
Move City Council award Professional Services Agreement No. WW2003.451, to Brown and Caldwell, Inc., for the Airport Water Reclamation Facility Headworks Drain Piping Construction Management Services, in an amount not to exceed $55,050.

BACKGROUND FROM COUNCIL MEMO:
The Airport Water Reclamation Facility (AWRF), located at 905 E. Queen Creek Road, has been in operation since 1997. As wastewater enters the headworks building, it passes through filter screens to remove large debris utilizing a network of concrete channels. These channels are designed to be periodically drained to fully access the filter screens for maintenance and repair. However, the valves and piping associated with this drain system are in poor condition, and City staff is limited in their maintenance activities on the filter screens.

The project scope of work consists of contractor oversight, construction administration and inspection, AWRF staff coordination, schedule review, construction meetings, shop drawings and submittals,

preparation of final as-built drawings, and project close-out. The contract completion time is 210 calendar days following Notice to Proceed. A related Construction Contract with Garney Companies, Inc., for the Airport Water Reclamation Facility Headworks Drain Piping, is also scheduled for this City Council meeting.

DISCUSSION AND POSSIBLE ACTION

17. Council Public Safety Subcommittee discussion on Public Safety: Crime Statistics, Call Volume, Impact of COVID-19 and Future Staffing and Resource Needs, as requested by Councilmember Orlando.

MAYOR HARTKE introduced the discussion item and said Council has a strong commitment to ensuring that the public safety departments are staffed and have resources. Mayor Hartke said they want to ensure they have staff needed for this budget as well as in future years.

COUNCILMEMBER ORLANDO thanked public safety staff as they have encountered a lot over the past year and it has not gotten easier for them. Councilmember Orlando said COVID-19 exposed a lot of deficiencies and concerns within the City so it is not unique that we are the only City that has done a dynamic change in their thought processes. Councilmember Orlando said the issues faced over the last year were exacerbated such as mental health, social issues, and COVID-19 in its entirety. Councilmember Orlando said Councilmember Harris, Councilmember Roe, and himself listened to the Chiefs during the Subcommittee meeting and said there are dynamic changes happening. Councilmember Orlando said he thought it was a compelling issue that needed to be heard by Council and the public.

SEAN DUGGAN, Police Chief, presented the following presentation.

- Chandler Police Department Update
- City of Chandler Population
    - 12% increase in population in the last ten years
- Chandler Police Department Historical Crime Rate
    - Chandler Part I Crime Rate per 1,000 Population
    - 40% decrease in Part I crimes per 1,000 population in the last ten years
- Chandler Police Department Historical Crime Index
    - Chandler UCR Part I Crime Index
    - 33% Decrease in total Part I crimes in the last ten years
- Chandler Police Department Part I Crime
    - 2020 UCR Part I Crime Index Breakdown
    - In 2020 90% of Part I crimes in the City of Chandler were non-violent
- City of Chandler Shooting Incident Counts
    - 110 Shooting victims in Chandler in 2020
    - Victims Shot 26 24%
    - Victims Deceased 9 8%
    - Chandler Shooting Incidents
        - 2016 – 47
        - 2017 - 54
        - 2018 – 49
        - 2019 – 59
        - 2020 - 75
- City of Chandler Sexual Assaults
    - 2014 – 60

  - 2015 -79
  - 2016 -124
  - 2017 – 130
  - 2018 – 149
  - 2019 -134
  - 2020 – 123
- Challenges
  - Gun Violence
  - Sex Crimes
  - Homelessness (1,331 CFS)
  - Mental Health (978 CFS including 574 mental health petitions)
    - 65% increase from 2015
  - Internet Based Crimes
    - Internet Crimes Against Children (ICAC)
    - Human Trafficking
    - Financial Crimes
    - Identity Theft, etc.
  - Protests (30x)
- Chandler Police Sworn Staffing
  - 2008/2009 – 334
  - 20092010 – 332
  - 2010/2011 – 327
  - 2011/2012 – 317
  - 2012/2013 – 320
  - 2013/2014 – 320
  - 2014/2015 – 320
  - 2015/2016 – 324
  - 2016/2017 – 324
  - 2017/2018 – 328
  - 2018/2019 -332
  - 2019/2020 – 332
  - 2020/2021 – 334
- Staffing Analysis Recommendations
  - Recommended Aug 2016: 149 Patrol Officers
  - Assigned Patrol Officers 2016: 134 Patrol Officers
  - Difference: 15 Patrol Officers
- Patrol Staffing Response Plan
  - Effective 2017
    - Three sworn positions added to patrol (civilianized range/housing positions)
    - Three vacant traffic section positions reassigned to patrol
    - One sworn PDIT position reassigned to patrol
    - Three new sworn positions from approved DP assigned to patrol
    - One vacant PDIT position reclassified to officer and assigned to patrol
  - Effective 2018
    - Two City positions reclassified to police officers assigned to patrol
    - As on March 2018: 13 additional officers assigned to patrol
  - Summer 2019
    - Two additional officers added to patrol

        - One SRO reassigned to patrol in June
        - One additional DP officer position assigned to patrol in July
    - Final 2019
        - Fifteen officers added to patrol 2016-2019 for total complement of 149
- Staffing Past/Present
    - Added 14 officers 4 SRO's to sworn complement (2015-2019)
    - 15 officers to patrol (2019)
    - Created Beat-18 in southern part of the City (2018)
    - Staffing needs (2021)
        - Detective Support: Sex Crimes, Gangs, Computer Crimes, HT, Robbery/Homicide (Strategic Plan)
        - Bike/ Neighborhood Response team (Strategic Plan)
        - Mental Health Unit (Strategic Plan)
        - Training
        - PDIT
        - Communications Section (911 PSAP)
        - Support Services (Crime Analysis, Forensics, Property and Records)
        - Detention

COUNCILMEMBER ORLANDO asked where the staff was pulled from for the Gun Task Force.

CHIEF DUGGAN said three came from patrol, a supervisor and two officers, and two were detectives.

COUNCILMEMBER ORLANDO said there are less officers now because they have been pulled to work a strategic area.

CHIEF DUGGN said yes, two less on patrol.

COUNCILMEMBER ORLANDO said the two detectives were also pulled in a different area.

CHIEF DUGGAN said yes, they were gang detectives.

COUNCILMEMBER ORLANDO said over the years they have been staffing these task forces, but they have had to take staff from the existing base to staff these. There are not enough officers to cover their beats and still do these other tasks without a lot of overtime.

CHIEF DUGGAN said there are still ways to cover the beats, but this issue is that people are tired. Chief Duggan said the issue is no longer money, but it is pressing people to work more. It has been an exhausting year.

COUNCILMEMBER ORLANDO asked how many officers are eligible to retire.

CHIEF DUGGAN said 82 to 84 officers have 20 years or more of service.

COUNCLMEMBER ORLANDO said his concern was taking officers off of their beat to handle other issues, the overtime, and the over working.

CHIEF DUGGAN said every day they are prioritizing to handle what needs to be done with their limited resources. The top priority in the City is to handle their gun crimes.

COUNCILMEMBER ORLANDO asked how many over hires are in process.

CHIEF DUGGAN said five positions funded and another 10 are available.

COUNCILMEMBER ORLANDO said they have been reactive instead of proactive.

CHIEF DUGGAN said they are trying to get ahead and bring more people on board, but recruitment is a challenge. There are not many people who are willing to be a police officer in this country. Chief Duggan said there are some very talented people who want to do this job, but they are being courted by every agency.

COUNCILMEMBER ELLIS said the public safety staff in the room are well committed to this City and thanked them for their service. Councilmember Ellis said Council understands that the police department needs help and they are ready to do that. Councilmember Ellis said Council is in the process of reviewing the budget and public safety is at the forefront of their discussion. Councilmember Ellis said there are positions are available, but finding qualified candidates is difficult and they need to be aggressive in marketing. Councilmember Ellis said she wanted to know how many people they need, where they need them, and when.

CHIEF DUGGAN said they need help today. The pressing concern is ensuring there is a process that gives the City an advantage over the competition. Chief Duggan said they have requested additional background investigators and software to help. It is difficult to give a specific number. Chief Duggan said it would take a number of officers to get them where they need to be.

COUNCILMEMBER ELLIS said when she first was elected she sat with the Chief to see how she could help. Councilmember Ellis said they spoke about different ways to help and ensure the proper person is there to make those decisions so everyone can go home safe. Councilmember Ellis said she has lived in Chandler for 34 years and has always felt safe because the Police Department does their job well.

CHIEF DUGGAN said he would be happy to work with staff to create a roadmap.

COUNCILMEMBER ELLIS encouraged staff to continue to voice their opinions and continue to show up big.

COUNCILMEMBER ROE said he has many opportunities to talk to police officers and the officers always say they love their job and working for the City. Councilmember Roe said he has heard from all staff that Chandler works shorthanded and they need help. Councilmember Roe said he has been on Council since 2015 and attended each year a budget discussion where they heard from all the divisions about what their needs are. Councilmember Roe listed all of the things that were being requested. Councilmember Roe said the Chief has had the podium each year to say that they need help and Councilmember Roe said he heard each year that they are working it out. Councilmember Roe said he understood some of the City politics, but at the end of the day Chief Duggan is the Chief of Police. Councilmember Roe said he was unhappy to hear about this tonight and wanted to hear about these things along the way. Councilmember Roe said he was a retired office and patrol is the first place that members are taken from to do specialty assignments. Councilmember Roe said he loves Chandler and that most of them do as well. Councilmember Roe talked about high density housing in Chandler and talked about responding to the calls in these complexes from his experience.

CHIEF DUGGAN said he appreciated Councilmember Roe's comments and said in the past he has stated that patrol is the number one area of focus. Chief Duggan said that is what had to be fixed over the past five years. Chief Duggan said this was not the first time they have asked for resources.

MAYOR HARTKE said they have added a number of homeless navigators in Neighborhood Resources and Police do get a number of homeless calls and asked for them to see how they can better respond. Mayor Hartke said he would be open to more ideas of how they could collaborate and utilize other resources.

VICE MAYOR STEWART said Council and the community is very grateful and happy about what the Police Department does for the community. Vice Mayor Stewart said this presentation was eye opening and would like to get more information about how they got to this place. Vice Mayor Stewart talked about the recession, the PSPRS situation and honoring the commitment the City made, and how the City did not lay anyone off employees when other cities did. Vice Mayor Stewart said this is the first time he has heard this breakdown and is happy he did. Vice Mayor Stewart said there is a process of working with the budget team to see where they can afford to address these issues. Vice Mayor Stewart said he wanted to ensure the City is safe and that is a need that comes first before they address the wants. Vice Mayor Stewart said it is important they continue to communicate.

COUNCILMEMBER LOPEZ said the graphs are very telling about policing in the community and the community in general. Councilmember Lopez said he has interacted a lot about public safety with other cities and Chandler is by far one of the safest cities. Councilmember Lopez said other cities are surprised about the number of sworn officers and the crime rate for the population. It is the attitude and representation of the officers that makes the City feel safe and propagates through the rest of society. Councilmember Lopez said they need to find the root cause of the issue and they need to find the immediate issue to be addressed. Councilmember Lopez said it seems they don't necessarily have an immediate issue, but rather there is a major risk on the back end when it comes to support for the officers so they can keep officers on patrol. Councilmember Lopez said he wanted to work with staff to see what they can do to compete to get qualified staff and address the shortage.

CHIEF DUGGAN said their immediate need is hiring. Chief Duggan said they do a staffing analysis each year. They are at where they need to be on patrol now, but there is a gap as far as support.

COUNCILMEMBER LOPEZ knows they have had to flex different things and make prioritizations, but now they need to establish a long term plan. Councilmember Lopez said they are seeing the exhaustion that COVID-19 has brought and the impact on families that feel that as well.

COUNCILMEMBER HARRIS thanked the public safety staff for keeping the City safe. Councilmember Harris said their job is to save lives and they want to go back home to their families. Councilmember Harris said the public safety departments take on a lot for the City. Councilmember Harris asked if there have been different categories of crime coming up between 2008 and 2021.

CHIEF DUGGAN said yes, they have seen a proliferation of web based crime where predators online are preying on children and human trafficking. There are a lot more vulnerable people online because of the COVID-19 lock down.

COUNCILMEMBER HARRIS asked if they have seen officers work a lot of overtime.

CHIEF DUGGAN said yes.

COUNCILMEMBER HARRIS asked if they work their regular hours too.

CHIEF DUGGAN said yes, overtime is in addition to their regularly scheduled hours.

COUNCILMEMBER HARRIS asked if they stay beyond their shift to cover or continue.

CHIEF DUGGAN said yes, and they may be asked to come in on their day off.

COUNCILMEMBER HARRIS said last year there were a lot of protests and asked how many hours officers worked per day.

CHIEF DUGGAN said he did not have that breakdown. There was a week in June where the Police Department was fully mobilized working 12 hour shifts and worked 8 days straight. There have been protests August through November every Friday at Chandler Boulevard and Arizona Avenue. Chief Duggan said officers were sent out 13 straight weeks on Thursday nights to Gilbert to assist them. Recently there have been five weeks of protests.

COUNCILMEMBER HARRIS said the officers are expanding their time in other areas and over what they expected when they first joined. Councilmember Harris asked if that took away time from their family and impacts their mental health.

CHIEF DUGGAN said yes. Chief Duggan said they expand and contract as needed and are reliant on people disrupting their lives to come in as necessary.

COUNCILMEMBER HARRIS asked if it was culture of the police to not complain about not having enough staff and instead just focusing on getting the job done.

CHIEF DUGGAN said no, there are complaints every day but they still do the job and they do it remarkably well.

COUNCILMEMBER HARRIS said the officers need support and Chief Duggan has taken a brave stance to tell Council what they need. Councilmember Harris asked Chief Duggan to go back to his team and put together a comprehensive plan addressing the needs and what it would look like over a duration of time. Councilmember Harris asked Chief Duggan to come back to Council with the plan. Councilmember Harris said he did not want tired officers and wanted them to have time with their family. When there are fresh eyes they can get things done much faster. Councilmember Harris said the officers see many difficult things every day and it is important for them to take time for their mental health. Councilmember Harris said he wanted the plan to take into consideration the growing population in Chandler and new businesses coming as well and address the future issues.

COUNCILMEMBER ORLANDO said Council may have mixed emotions about what they heard tonight. Councilmember Orlando said Chief Duggan is only doing his job and he asked him to speak because the issue is important for Council. Councilmember Orlando said they can talk about how they got here, but that is not the issue. The issue is that Chief Duggan needs help and how soon he needs the help. Councilmember Orlando asked how many people were needed this year and the following years.

CHIEF DUGGAN said looking at the long term plan it would be dozens.

COUNCILMEMBER ORLANDO asked for the numbers.

CHIEF DUGGAN said any amount would be beneficial. The first priority would be to hire for the vacancies they have right now. That would give 15 people and then they would built on that.

COUNCILMEMBER ORLANDO said there are dollars with the American Recovery Act, that is a four year plan that they could use funds for. Councilmember Orlando said they had done something similar in the 90's. Councilmember Orlando asked the City Manager that on Friday the 23rd to see what could be done for 2021. Councilmember Orlando said the 15 positions are already there and wanted to know what positions are needed in addition to those existing 15.

JOSHUA WRIGHT, Acting City Manager, thanked Council for their discussion. Mr. Wright said it has been a wild year and a year ago they were talking about cutting the budget dramatically. Mr. Wright said they cut $10.5 million dollars because of what they thought would happen because of COVID-19 and another $20 million in the current fiscal year. Mr. Wright said they have an opportunity now, as Councilmember Orlando said, to use these anticipated one time dollars to find creative solutions and leverage the dollars to make impacts on these issues. Mr. Wright said they want to find creative solutions to effect ongoing savings in the budget and do this in a logical and sustainable fashion. Mr. Wright said staff has been talking about this issue and would be looking at a holistic solution.

COUNCILMEMBER ORLANDO asked if one time dollars would be used to get ahead of the issue.

MR. WRIGHT said yes, everything is on the table and they are looking creatively at the issue to get ahead of it.

VICE MAYOR STEWART said there have been discussions about staffing and they have a budget process that they work through to see what they can afford now and in the future.

MAYOR HARTKE invited the public to speak on Consent Agenda Item No. 17.

MICHAEL COLLINS, 250 E. Chicago St, Chandler, AZ, President of the Chandler Law Enforcement Association, said he worked for the Police Department for 27 years. Mr. Collins said his concerns over the years are the same as expressed by the Chief. Mr. Collins said the staff are exhausted. They have been made to more with less for a very long time, but they will always show up and be there. Mr. Collins said this problem did not come to light in the last six months, but has been greatly exposed and shown in this last year. Mr. Collins said now that they have identified these issues, the Chandler Law Enforcement Association members are looking for Council direction and support and a solution. Mr. Collins said they are aware of the issues of hiring qualified people and it would not be something that could be resolved in the next few weeks. Mr. Collins wanted to ensure there is a plan in place to address the needs to come.

TOM LOVEJOY, PO Box 261, President of Chandler Lieutenants and Police Sergeants Association, said they are tired and they are looking for hope. Mr. Lovejoy said even if they hired these positions right now they would not see them until next year. Mr. Lovejoy said the pay is average and the things the City offers are average so the candidates go to other agencies. Mr. Lovejoy thanked Councilmember Orlando for bringing this to Council. Mr. Lovejoy said he presented to Council in 2018 asking for help and nothing happened. Mr. Lovejoy said he appreciated Council's dialogue and their commitment. Mr. Lovejoy said the Chief has a plan and will share it. Mr. Lovejoy said he has one Internet Crimes Against Children detective. Normally, there are about 6 tips that come in, but this year there were 61. Mr. Lovejoy said they see the faces of the children that are being impacted and they need Council's help to do something about it. Mr. Lovejoy thanked Councilmember Ellis, Councilmember Harris, and Councilmember Orlando for all they have done. Mr. Lovejoy said they had a similar issue in 1993 and encouraged Council to look at what was done back then.

MAYOR HARTKE said a written comment was received regarding Agenda Item No. 17.

BETH BRIZEL, 6130 W. Shannon St., Chandler, 85225 submitted the following comment:
Good evening Mayor, Honorable Councilmembers, and Community members. L am Beth Brizel, Co—President of the Community Advisory Board. I'm speaking in consideration of the Chandler police officers and police representatives. I'm asking for your support to increase the police budget to fill vacant positions and hire new officers and civilian personnel to adequately staff the Chandler police department. While growth is important to a city, RESPONSIBLE growth is critical. Continuing to grow the City of Chandler without ensuring adequate essential services such as police, fire, ambulance, and mental health professionals is simply imprudent and potentially harmful to Chandler residents and to our growth as a community. Increasing the number of police officers is critical for the health and safety of our residents.

We have an amazing police force and it is unreasonable for us to ask our police staff to continue to operate while being under staffed. Any occupation in which an employee, (especially public safety employees) are overworked affords the opportunity for error. Some occupations even cap the number of hours per week an individual can work in order ensure the safety of its workers. A police officer's role in the community is twofold - First, to protect society and Second, to serve their community. Particular zip codes already have a longer response time than other areas of the city. By not properly staffing the Chandler police force, we are compromising the health, safety, and livability of Chandler residents, particularly in these select zip codes.

I, and the Community Advisory Board, stand in support of Council's efforts to secure funding to increase the number of police officers needed to protect and serve the City of Chandler. The first and foremost duty of an elected official is to provide a healthy and safe community for their residents and employees. Therefore we thank you in advance for your vote to increase the police budget in order to hire more police personnel. Your vote to increase the budget will be a good faith effort to preserve the health, safety, and livability standards for all the residents in Chandler.

INFORMATIONAL

18. Study Session & Regular Meeting Minutes of March 3, 2021, Planning and Zoning Commission

UNSCHEDULED PUBLIC APPEARANCES

DERRICK HATHAWAY, 1914 W. Cortez Circle, Chandler, 85224, said the police came to his residence in the fall of 2019 for trespassing his residence. Mr. Hathaway had a one year lease paid in full to the property owner. Mr. Hathaway's personal things and vehicle were reported stolen for not allowing access to the property. Mr. Hathaway said he spoke to the Chief and told Mr. Hathaway he did not file a complaint as he would do something about it. Mr. Hathaway said he provided a copy of his lease and supporting documents to the Mayor's Office. Mr. Hathaway said he has tried to maintain a stable living place. Mr. Hathaway said he would like to get the one year lease that he lost paid in full to be paid by the City.

CURRENT EVENTS

1. Mayor's Announcements

MAYOR HARTKE said this week is Chandler Gives Week, a time to give back to the non-profits that have worked hard to serve the community through the pandemic. Mayor Hartke said that he and Vice Mayor Stewart have specials at Ginger Monkey for a Charity Cook Off.

2. Council's Announcements

COUNCILMEMBER LOPEZ said the City is joining AMWUA to celebrate Water Awareness Month and Arizona Water Professionals Appreciation Week. Water professionals have played a vital role over the past year and water plays a very important role in our lives. The City treated 23 billion gallons of water to Chandler customers and through innovative program and services, saved over 97 million gallons of water.

COUNCILMEMBER ELLIS thanked everyone for attending the meeting.

3. City Manager's Announcements

MR. WRIGHT thanked Council for their support of staff and they do have the very best people. Mr. Wright said staff has endured a very difficult year, but continued to provide great service to the City.

ADJOURNMENT: The meeting was adjourned at 7:36 p.m.

ATTEST: _____ _____
City Clerk Mayor

Approval Date of Minutes: April 22, 2021

CERTIFICATION

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the Regular Meeting of the City Council of Chandler, Arizona, held on the 8th day of April, 2021. I further certify that the meeting was duly called and held and that a quorum was present.

DATED this _____ day of April, 2021.

_____
City Clerk

ITEM 5

CHANDLER arizona
Community of Innovation

City Council Memorandum **City Clerk's Office** **Memo No.** 21-007

Date:	April 19, 2021
To:	Vice Mayor and City Council
From:	Mayor Kevin Hartke
Subject:	Board and Commission Appointments

Proposed Motion:
Move City Council approve the Board and Commission appointments as recommended.

Economic Development Advisory Board
Appoint Brent Menzel

Parks and Recreation Board
Appoint Shawn Hsu

CHANDLER arizona
Community of Innovation

City Council Memorandum **Communications and Public Affairs** **Memo No.** 21-05

Date: April 19, 2021
To: Mayor and Council
Thru: Joshua H. Wright, Acting City Manager
From: Matt Burdick, Communications and Public Affairs Director
Subject: Resolution No. 5468 Authorizing the Submittal of a $106,275 Tribal Gaming Revenue Sharing Grant Application from the Chandler Fire Department to the Fort McDowell Yavapai Nation to replace a low acuity program vehicle.

Proposed Motion:

Move City Council pass and adopt Resolution No. 5468 authorizing the submittal of a $106,275 Tribal Gaming Grant Application from the Chandler Fire Department to the Fort McDowell Yavapai Nation to replace a low acuity program vehicle.

Background:

In 2002, a coalition of Arizona Indian tribes successfully obtained passage of Proposition 202, whereby the State was authorized to enter into gaming compacts with individual tribes. The compacts allowed for expanded tribal use of games and gaming devices as well as pari-mutuel wagering. In exchange, tribes agreed to share a portion of gaming revenues with the State and its counties, cities and towns. The law provides that 12 percent of tribal contributions pursuant to the compacts shall be contributed by Indian tribes to cities, towns and counties for government services that benefit the general public, including public safety, mitigation of gaming impacts and promotion of commerce and economic development. The Indian tribes have some discretion over how these contributions will be made and each tribe has different application procedures that need to be observed to obtain funding. Additionally, it has become a common practice for cities to submit applications for such contributions on behalf of 501 (c)(3) nonprofit organizations that are deemed to be providing government services that benefit the general public.

The City of Chandler for many years has submitted grant applications for City departments and numerous nonprofit organizations based on the interests of the City and its residents. The grant applicant must be part of the municipal government or a 501 (c)(3) nonprofit organization with some nexus with the City and its residents. The Fort McDowell Yavapai Nation requires a resolution of the City Council as part of its grant application process.

Discussion:

The City of Chandler serves a population of nearly 270,000 residents and businesses that employ nearly 115,000 people. Chandler Fire Department is seeking support from the Fort McDowell Yavapai Nation to fund the replacement of a low acuity program vehicle that will soon be reaching the end of its anticipated lifespan. These specialized two-person units respond to smaller-scale incidents, reserving the larger four-person fire apparatus for critical emergency medical, rescue and fire incidents. Use of the low acuity units has enabled Chandler Fire to dramatically reduce response times.

Financial Implications:
None

Attachments

Resolution No. 5468

RESOLUTION NO. 5468

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CHANDLER, ARIZONA, AUTHORIZING THE MAYOR TO SUBMIT A $106,275 APPLICATION FOR A TRIBAL GAMING REVENUE SHARING GRANT APPLICATION FROM THE CHANDLER FIRE DEPARTMENT TO THE FORT MCDOWELL YAVAPAI NATION TO REPLACE A LOW ACUITY PROGRAM VEHICLE.

WHEREAS, pursuant to A.R.S. § 5-601.02, Indian tribes entering into a tribal-state gaming compact shall contribute monies to "… cities, towns and counties … for government services that benefit the general public, including public safety, mitigation of gaming impacts, and promotion of commerce and economic development"; and

WHEREAS, those Indian tribes entering into a tribal-state gaming compact have various grant application procedures for evaluating which cities, towns and counties, and which government services, will receive gaming revenue sharing contributions pursuant to A.R.S. § 5-601.02; and

WHEREAS, it has become a common practice for cities to authorize the submission of grant applications for such Indian gaming revenue sharing grants on behalf of 501 (c)(3) nonprofit organizations that are deemed to be providing government related services that benefit the general public; and

WHEREAS, the City Council authorizes the submission of an application for such Indian gaming revenue sharing grant funding to the Fort McDowell Yavapai Nation on its behalf in the amount of $106,275; and

WHEREAS, the funding sought by the City is intended to support the acquisition of a vehicle for the low acuity program, as more specifically described in the application materials prepared by the City of Chandler to be submitted to the Fort McDowell Yavapai Nation, which application materials are hereto and incorporated herein by reference; and

WHEREAS, the City Manager's Office has reviewed the application materials and believes that the funding request described in the application materials qualifies as being for government related services that benefit the general public and is consistent with the City's Administrative Regulation regarding such grant applications.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Chandler, Arizona, that:

Section 1. The City is hereby authorized to submit the application materials that are attached hereto, together with this Resolution, to the Fort McDowell Yavapai Nation.

Section 2. The Mayor is hereby authorized to execute the application, in the form attached hereto, in conjunction with the grant application to be submitted to the Fort McDowell Yavapai Nation on behalf of the City.

PASSED AND ADOPTED by the City Council of the City of Chandler, Arizona, this 22nd day of April, 2021.

ATTEST:

_____ _____

CITY CLERK MAYOR

CERTIFICATION

I HEREBY CERTIFY that the above and foregoing Resolution No. 5468 was duly passed and adopted by the City Council of the City of Chandler, Arizona, at a regular meeting held on the 22nd day of April, 2021, and that a quorum was present thereat.

_____

CITY CLERK

APPROVED AS TO FORM:

_____

CITY ATTORNEY

CHANDLER arizona
Community of Innovation

City Council Memorandum **Communications and Public Affairs** **Memo No.** 21-06

Date: April 19, 2021
To: Mayor and Council
Thru: Joshua H. Wright, Acting City Manager
From: Matt Burdick, Communications and Public Affairs Director
Subject: Resolution No. 5469 Authorizing the Submittal of a $10,000 Tribal Gaming Revenue Sharing Grant Application from the Chandler Police Department to the Fort McDowell Yavapai Nation for the purchase of residential security equipment to be distributed to crime victims by the Victim Services Unit as a preventative measure against future crime or violence.

Proposed Motion:

Move City Council pass and adopt Resolution No. 5469 authorizing the submittal of a $10,000 Tribal Gaming Grant Application from the Chandler Police Department to the Fort McDowell Yavapai Nation for the purchase of residential security equipment to be distributed to crime victims by the Victim Services Unit as a preventative measure against future crime or violence.

Background:

In 2002, a coalition of Arizona Indian tribes successfully obtained passage of Proposition 202, whereby the State was authorized to enter into gaming compacts with individual tribes. The compacts allowed for expanded tribal use of games and gaming devices as well as pari-mutuel wagering. In exchange, tribes agreed to share a portion of gaming revenues with the State and its counties, cities and towns. The law provides that 12 percent of tribal contributions pursuant to the compacts shall be contributed by Indian tribes to cities, towns and counties for government services that benefit the general public, including public safety, mitigation of gaming impacts and promotion of commerce and economic development. The Indian tribes have some discretion over how these contributions will be made and each tribe has different application procedures that need to be observed to obtain funding. Additionally, it has become a common practice for cities to submit applications for such contributions on behalf of 501(c)(3) nonprofit organizations that are deemed to be providing government services that benefit the general public.

The City of Chandler for many years has submitted grant applications for City departments and numerous nonprofit organizations based on the interests of the City and its residents. Grant applicants must be part of the municipal government or a 501(c)(3) nonprofit organization with some nexus with the City and its residents. The Fort McDowell Yavapai Nation requires a resolution of the City Council authorizing the request as part of its grant application process.

Discussion:

The City of Chandler serves a population of nearly 270,000 residents and businesses that employ nearly 115,000 people. Chandler Police Department is seeking support from the Fort McDowell Yavapai Nation to purchase residential security equipment to be distributed to victims of domestic violence, sexual assault, burglary and other crimes as a preventative measure against future crime or violence. The types of security devices that may be purchased under this grant include video doorbell and monitoring systems, home security devices, and enhanced locking mechanisms.

Financial Implications:

None

Attachments

Resolution No. 5469

RESOLUTION NO. 5469

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CHANDLER, ARIZONA, AUTHORIZING THE MAYOR TO SUBMIT A $10,000 TRIBAL GAMING REVENUE SHARING GRANT APPLICATION FROM THE CHANDLER POLICE DEPARTMENT TO THE FORT MCDOWELL YAVAPAI NATION FOR THE PURCHASE OF RESIDENTIAL SECURITY EQUIPMENT TO BE DISTRIBUTED TO CRIME VICTIMS BY THE VICTIM SERVICES UNIT.

WHEREAS, pursuant to A.R.S. § 5-601.02, Indian tribes entering into a tribal-state gaming compact shall contribute monies to "… cities, towns and counties … for government services that benefit the general public, including public safety, mitigation of gaming impacts, and promotion of commerce and economic development"; and

WHEREAS, those Indian tribes entering into a tribal-state gaming compact have various grant application procedures for evaluating which cities, towns and counties, and which government services, will receive gaming revenue sharing contributions pursuant to A.R.S. § 5-601.02; and

WHEREAS, it has become a common practice for cities to authorize the submission of grant applications for such Indian gaming revenue sharing grants on behalf of 501 (c)(3) nonprofit organizations that are deemed to be providing government related services that benefit the general public; and

WHEREAS, the City Council authorizes the submission of an application for such Indian gaming revenue sharing grant funding to the Fort McDowell Yavapai Nation on its behalf in the amount of $10,000; and

WHEREAS, the funding sought by the City is intended to support the acquisition of residential security equipment for crime victims, as more specifically described in the application materials prepared by the City of Chandler to be submitted to the Fort McDowell Yavapai Nation, which application materials are hereto and incorporated herein by reference; and

WHEREAS, the City Manager's Office has reviewed the application materials and believes that the funding request described in the application materials qualifies as being for government related services that benefit the general public and is consistent with the City's Administrative Regulation regarding such grant applications.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Chandler, Arizona, that:

Section 1. The City is hereby authorized to submit the application materials that are attached hereto, together with this Resolution, to the Fort McDowell Yavapai Nation.

Section 2. The Mayor is hereby authorized to execute the application, in the form attached hereto, in conjunction with the grant application to be submitted to the Fort McDowell Yavapai Nation on behalf of the City.

PASSED AND ADOPTED by the City Council of the City of Chandler, Arizona, this 22nd day of April, 2021.

ATTEST:

_____ _____
CITY CLERK MAYOR

CERTIFICATION

I HEREBY CERTIFY that the above and foregoing Resolution No. 5469 was duly passed and adopted by the City Council of the City of Chandler, Arizona, at a regular meeting held on the 22nd day of April, 2021, and that a quorum was present thereat.

_____
CITY CLERK

APPROVED AS TO FORM:

_____
CITY ATTORNEY

CHANDLER arizona
Community of Innovation

City Council Memorandum **Community Services Memo No.** CP21-118

Date: April 19, 2021

To: Mayor and Council

Thru: Joshua H. Wright, Acting City Manager
Debra Stapleton, Assistant City Manager
Andy Bass, Community Services Director
Andrew Goh, Capital Projects Manager

From: Mickey Ohland, Community Services Planning Manager

Subject: Construction Manager at Risk Contract No. PR2004.401 with Hunter Contracting Co. for the Veterans Memorial Phase II

Proposed Motion:

Move City Council award Construction Manager at Risk Contract No. PR2004.401 to Hunter Contracting Co., for the Veterans Memorial Phase II, in an amount not to exceed $3,513,861.76.

Background/Discussion:

Veterans Oasis Park is located on the northeast corner of Chandler Heights and Lindsay roads. It is a 113-acre community park featuring an Environmental Education Center, a lake, an extensive network of trails, and a Police substation as well as numerous recharge basins. When this unique park was designed and constructed, a section of the park immediately adjacent to the northeast corner of the Lindsay Road and Chandler Heights Road intersection was designated as the future location of a Veterans Memorial. Shortly after completion of the park in 2008, City staff met with several local veterans groups and developed a conceptual plan for the Memorial. The goal of the Memorial is to provide a space for remembrance and reflection. The Memorial integrates the ideas of the veterans into the design, which represents six core values significant to the veterans and their families: freedom, reflection, recognition, sacrifice, family, and memories.

In 2016, the first phase of the Memorial was completed. Phase I included an elevated plaza replicating the Arizona State flag, parking, and landscaping. Phase II of the Memorial is designed to match the exact ratio of the American flag. At its core is a grid of columns of various heights which define the flag's stars and stripes, while the rolling landform emulates the ripples of it blowing in the wind. The columns are meant to signify soldiers marching in unison. Within the rising and falling landscape, the columns slowly disappear and reappear, representing soldiers going off to war and then returning. Twenty-one of the columns are completely submerged within the earth as a tribute, symbolizing a twenty-one gun salute for those who did not return from battle. In addition, the Memorial will include the integration of the F-86 plane that is currently on static display at the southeast corner of Chandler Boulevard and Delaware Street.

The project scope of work consists of construction of lighted monument plinths and cubes, theme walls, perimeter and seat walls, grading and retaining walls, relocation and mounting of F-86 plane, lighted pathways, landscaping and irrigation, and stormwater drainage system. The contract completion time is

220 calendar days following Notice to Proceed; the project is intended to be dedicated on Veterans Day 2021.

Evaluation:

The City's selection process was followed in accordance with City policy and procedure and State law. Staff recommends contract award to Hunter Contracting Co. based on qualifications, relevant firm experience, team experience, project understanding, and project approach. Staff reviewed the Guaranteed Maximum Price proposal and determined it to be reasonable.

Financial Implications:

The Veterans Memorial Phase II project total cost of $3,513,861.76 will be partially funded, in the amount of $1,795,921, from savings on the Tumbleweed Regional Park (6PR044) multi-use field project completed in 2020. The next phase of the Tumbleweed Regional project has been reestablished in the proposed Capital Improvement Program and is fully funded.

Fiscal Impact

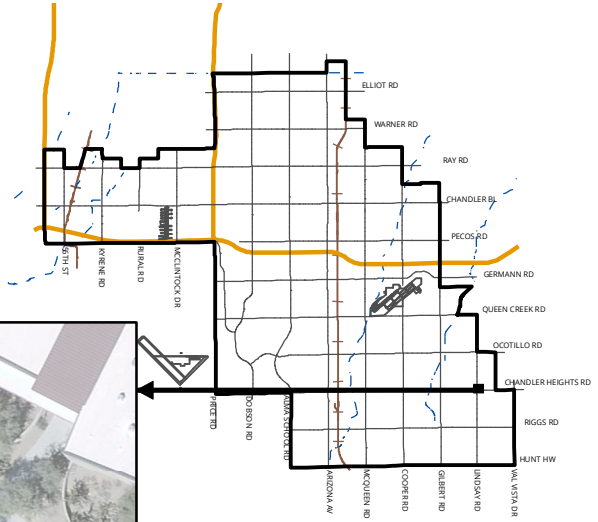
Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
401.4580.6210.0.6PR633	General Govt Capital Projects Fund	Veteran's Memorial	$1,717,940.76	Y
420.4580.6210.0.6PR633	Parks Bond Fund	Veteran's Memorial	1,795,921.00	Y

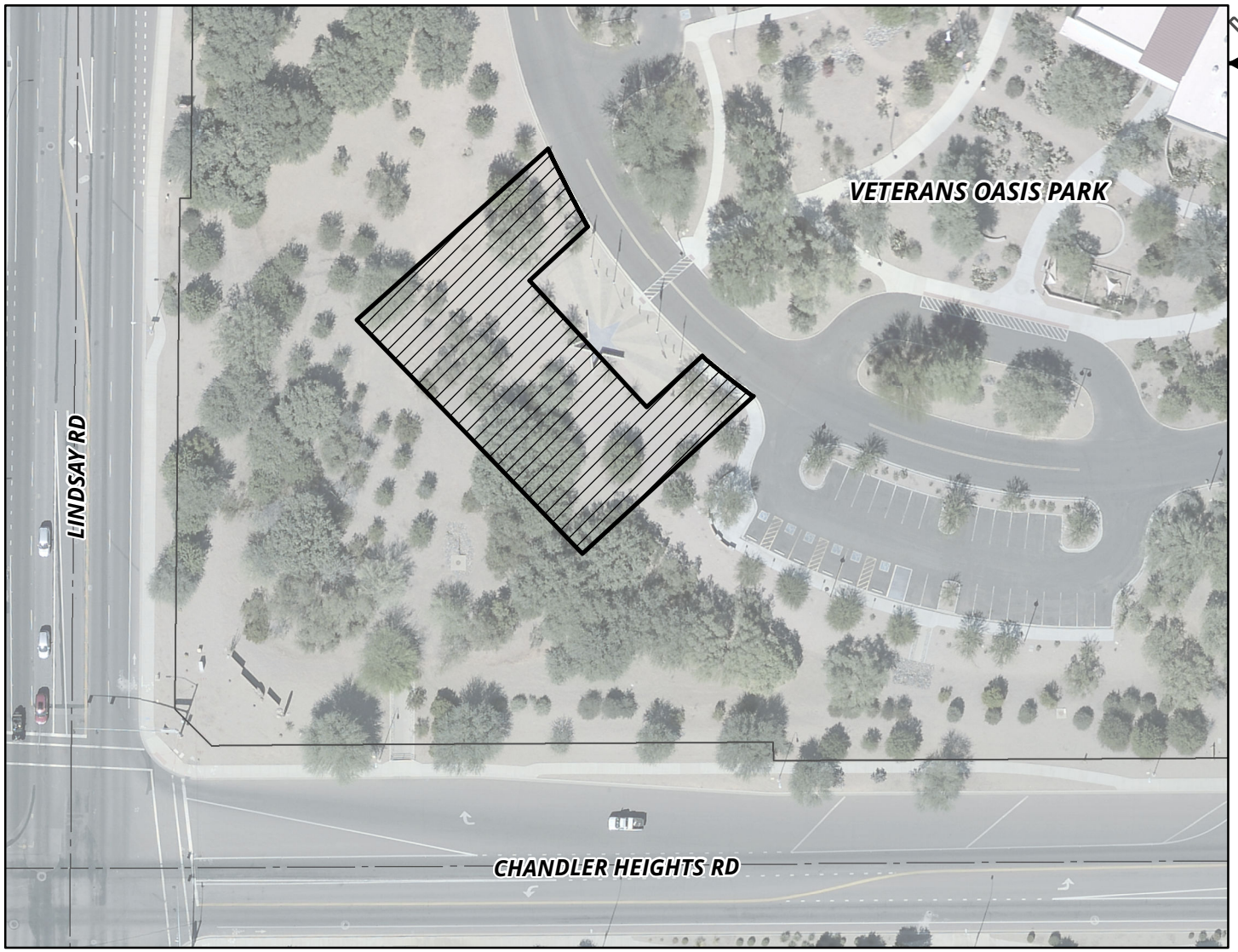
Attachments

Veterans Memorial Concept
Vicinity Map
Contract



VETERAN'S MEMORIAL PHASE II
CONSTRUCTION MGR AT RISK
CONTRACT NO. PR2004.401





MEMO NO. CP21-118

PHASE II

NTS

ChanGIS

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CHANDLER
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Community of Innovation

CITY OF CHANDLER, ARIZONA

VETERAN'S MEMORIAL PHASE II

CITY PROJECT NO. PR2004.401

CONSTRUCTION SERVICES CONTRACT

(CONSTRUCTION MANAGER AT RISK)

Andrew Goh, P.E.
CIP City Engineer

CITY OF CHANDLER, ARIZONA

VETERAN'S MEMORIAL PHASE II
CITY PROJECT NO.: PR2004.401

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CONSTRUCTION MANAGER AT RISK
CONSTRUCTION SERVICES CONTRACT
PROJECT NO.: PR2004.401

THIS CONTRACT is made and entered into on the _____day of _____, 2021, ("Effective Date") by and between City of Chandler, an Arizona municipal corporation, hereinafter called "City" and the "Construction Manager at Risk" or "CM@Risk" designated below (City and CM@Risk may individually be referred to as "Party" and collectively referred to as "Parties").

City and CM@Risk agree as follows:

ARTICLE 1 - PARTICIPANTS AND PROJECT

CITY: **CIP City Engineer:**
Andrew Goh
Public Works & Utilities Department
P.O. Box 4008, Mail Stop 407
Chandler, AZ 85244-4008
Phone: 480-782-3343
Email: andrew.goh@chandleraz.gov

CITY: **Construction Project Manager:**
Paul Ahlas
Public Works & Utilities Department
P.O. Box 4008, Mail Stop 407
Chandler, AZ 85244-4008
Phone: 480-782-3328
Email: paul.ahlas@chandleraz.gov

CM@RISK: **Hunter Contracting, Co.**
701 N. Cooper Rd. Gilbert, AZ 85233
Arizona ROC No.: 070961 A , 067542 B, 075851 B-01, 023057 B-04
Federal Tax ID No.: 86-0172434
Business Organization: Corporation
State Where Organized: Arizona
Statutory Agent Name: WA Service, LLC
Statutory Agent Physical Address: 2555 E Camelback Rd. Ste. 800 Phoenix AZ 85016
Statutory Agent Mailing Address: 2555 E Camelback Rd. Ste. 800 Phoenix AZ 85016
CM@Risk's Authorized Project Representative:

Name: Michael Gonzales
Title: Project Manager
Physical Address: 701 N. Cooper Rd., Gilbert, AZ 85233
Mailing Address: 701 N. Cooper Rd., Gilbert, AZ 85233
Phone: 480- 503-7448
Email: michaelg@huntercontracting.com

DESIGN PROFESSIONAL: **Kimley-Horn and Associates, Inc.**
7740 N. 16th St., Ste. 300, Phoenix, AZ 85020
Statutory Agent Name:
Statutory Agent Physical Address:
Statutory Agent Mailing Address:
Design Professional's Authorized Project Representative:
Name: **Mr. Jeff Kratzke**
Title: **Project Manager**
Physical Address: **7740 N. 16th St., Ste. 300, Phoenix, AZ 85020**
Mailing Address:
Phone: **602-944-5500**
Email: **Jeff.kratzke@kimley-horn.com**

PROJECT DESCRIPTION:

Construct the second phase of the Veteran's Memorial and to refurbish and relocate the F-86 plane on static display at the southeast corner of Chandler Boulevard and Delaware Street.

PROJECT LOCATION:

Northeast corner of Chandler Heights Road/Lindsay Road

ARTICLE 2 - CONTRACT DOCUMENTS

2.1 CONTRACT DOCUMENTS

The Contract between City and CM@Risk will consist of the following Contract Documents:

1. This Construction Services Contract and all of its Exhibits, including Project Plans and Technical Specifications.
2. General Conditions and General Conditions Appendices, incorporated by reference.
3. Project Specific Special Provisions as set forth in **Exhibit A**, incorporated by reference.
4. Accepted GMP/Price Proposal as set forth in **Exhibit D**, incorporated by reference.

2.2 In the event of any inconsistency, conflict, or ambiguity between or among the Contract Documents, the Contract Documents will take precedence as described in Section 14.1.4 of the General Conditions.

2.3 DEFINITIONS

The definitions in Sections 2 and 15 of the General Conditions apply to all the Contract Documents, including this Agreement.

ARTICLE 3 - PRE-CONSTRUCTION SERVICES

Although CM@Risk has performed Pre-Construction Services pursuant to a separate Contract between City and CM@Risk, the completion, quality and accuracy of those services and the deliverables provided by City thereunder directly impact CM@Risk's performance of its obligations under this Contract. Therefore, all of CM@Risk's obligations, duties, and warranties in relation to Pre-Construction Services and deliverables survive completion of the Pre-Construction Services Contract and are incorporated herein. Any breach of any of CM@Risk's duties, obligations, or warranties under the Pre-Construction Services Contract will likewise be considered a breach of this Contract.

ARTICLE 4 - CONSTRUCTION SERVICES

4.1 GENERAL

4.1.1 CM@Risk agrees at its own cost and expense, to do all work necessary and required to fully, timely and properly complete the construction of the Project in strict accordance with the Contract Documents in a good and workmanlike manner, free and clear of all claims, liens, and charges whatsoever, in the manner and under the conditions specified, and within the schedule, stated in attached **Exhibit A**.

4.1.2 CM@Risk must provide all of the labor and materials, and perform the Work in accordance with Section 4 of the General Conditions. Some, but not all, of the major components of the Construction Services and the corresponding subsections of Section 4 of the General Conditions are set forth below.

4.1.3 This is a contract for complete construction services in accordance with the Construction Manager at Risk method of delivery of construction services. CM@RISK has participated in the design process and been an active member of the Project Design Team and is fully aware of any issues and constraints involved in this Construction Project.

4.1.4 CM@RISK is the CITY's fiduciary responsible for undertaking all necessary action contemplated under the contract documents to construct the Project and ensure timely and quality completion of the Project at a cost within the Guaranteed Maximum Price (GMP).

4.1.5 At all times relevant to this Contract and performance of the Work, the CM@Risk must fully comply with all Laws, Regulations, or Legal Requirements applicable to City, the Project and the Contract, including, without limitation, those set forth on attached **Exhibit A.**

4.1.6 CM@Risk must perform the Work under this Contract using only those firms, team members and individuals designated by CM@Risk consistent with the Statement of Qualifications dated January 8, 2021, the GMP Proposal, or otherwise approved by City pursuant to the General Conditions. No other entities or individuals may be used without prior approval of the Project Manager

4.1.7 CM@Risk will comply with all terms and conditions of the General Conditions.

4.1.8 In the event of a conflict between this Contract and the General Conditions or an exhibit hereto or appendix thereto, the terms of this Contract will control.

4.1.9 Ownership of Work Product. Notwithstanding anything to the contrary in this Contract, all Work Product prepared or otherwise created in connection with the performance of this Contract, including the Work, are to be and remain the property of City. For purposes of this provision, "Work Product" will include all designs, drawings, plans, specifications, ideas, renderings and other information or matter, in whatever form created (e.g., electronic or printed) and in all media now known or hereinafter created. All Work Product will be considered Work Made for Hire as defined in the United States Copyright Act 17 U.S.C. § 101 (Copyright Act). If for any reason, any such Work is found not to be a Work Made for Hire, CM@Risk hereby transfers and assigns ownership of the copyright in such Work to City. The rights in this Section are exclusive to City in perpetuity.

4.2 **CM@RISK'S PRE-CONTRACT AND PRE-WORK DELIVERABLES**

4.2.1 The CM@Risk must provide the Deliverables in accordance with Section 4.2 of the General Conditions.

4.3 **PRE-CONSTRUCTION CONFERENCE**

Refer to Section 4.3 of the General Conditions.

4.4 **PERFORMANCE OF THE WORK (INCLUDING FIELD MEASUREMENTS, SUBCONTRACTORS, AND SUPPLIERS)**

Refer to Section 4.4 of the General Conditions.

4.5 **CONTROL OF THE PROJECT SITE**

Refer to Section 4.5 of the General Conditions.

4.6 **PROJECT SAFETY**

Refer to Section 4.6 of the General Conditions.

4.7 **MATERIALS QUALITY, SUBSTITUTIONS AND SHOP DRAWINGS**

Refer to Section 4.7 of the General Conditions.

4.8 **PROJECT RECORD DOCUMENTS**

Refer to Section 4.8 of the General Conditions.

4.9 **WARRANTY AND CORRECTION OF DEFECTIVE WORK**

Refer to Section 4.9 of the General Conditions.

ARTICLE 5 - CITY RESPONSIBILITIES

5.1 City will have the responsibilities, and provide the information specified in, and subject to the conditions set forth in, Section 5 of the General Conditions.

ARTICLE 6 - CONTRACT TIME

6.1 **GENERAL**

6.1.1 The Contract Duration is **220** Calendar Days.

6.1.2 The Contract Time will start with the Notice to Proceed (NTP) and end with Final Acceptance, as set forth in Article 6.4 below. The Notice to Proceed cannot be issued until approval and acceptance by City of the GMP or Fixed Price.

6.1.3 The Contract Time will be as set forth in the Project Schedule. CM@Risk agrees that it will commence performance of the Work and complete the Project through Final Acceptance within the Contract Time.

6.1.4 Time is of the essence of this Contract for the Project, and for each phase and designated Milestone thereof.

6.2 PROJECT SCHEDULE

6.2.1 The Project Schedule approved as part of the GMP Proposal and incorporated herein as part of the attached **Exhibit D** must be updated and maintained throughout CM@Risk's performance under this Contract in accordance with Section 6.2 of the General Conditions.

6.2.2 Failure on the part of CM@Risk to adhere to the approved Project Schedule will be deemed a material breach and sufficient grounds for termination of this Contract by City.

6.2.3 Work must be completed to meet the following milestones after the Notice to Proceed:

	Milestone	Time	Liquidated damages for delay
1.		within days	$ per calendar day

6.3 SUBSTANTIAL COMPLETION

Substantial Completion must be achieved no later than the Substantial Completion Date set forth in the Project Schedule. Substantial Completion will be determined in accordance with Section 6.3 of the General Conditions.

6.4 FINAL ACCEPTANCE

6.4.1 Final Acceptance will be obtained within the time period set forth in the Project Schedule.

6.4.2 Final Acceptance will be issued pursuant to Section 6.5 of the General Conditions.

6.5 LIQUIDATED DAMAGES

6.5.1 Substantial Completion Liquidated Damages. CM@Risk acknowledges and agrees that if CM@Risk fails to obtain Substantial Completion of the Work within the Contract Time, City will sustain extensive damages and serious loss as a result of such failure. The exact amount of such damages will be extremely difficult to ascertain. Therefore,

City and CM@Risk agree that if CM@Risk fails to achieve Substantial Completion of the Work within the Contract Time, City will be entitled to retain or recover from CM@Risk, as liquidated damages and not as a penalty, the sum per calendar day as indicated in MAG § 108.9.

6.5.2 Final Acceptance Liquidated Damages. For the same reasons set forth in Article 6.5.1 above, City and CM@Risk further agree that if CM@Risk fails to achieve Final Acceptance of the Work within the Contract Time, City will be entitled to retain or recover from CM@Risk, as liquidated damages and not as a penalty, the sum per calendar day as indicated in MAG § 108.9 commencing from the actual date of Substantial Completion or Final Acceptance as required under the Contract.

6.5.3 MAG Liquidated Damages. If no liquidated damages are specified in Articles 6.5.1 or 6.5.2 above, then the liquidated damages provisions in MAG § 108.9 will apply.

6.5.4 City may deduct liquidated damages described in this Article 6.5 from any unpaid amounts then or thereafter due CM@Risk under this Agreement. Any liquidated damages not so deducted from any unpaid amounts due CM@Risk will be payable to City at the demand of City, together with interest from the date of the demand at the highest lawful rate of interest payable by CM@Risk.

6.6 MUTUAL WAIVER OF CONSEQUENTIAL DAMAGES ONLY

6.6.1 CM@Risk and City waive claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes:

6.6.1.1 Damages incurred by City for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

6.6.1.2 Damages incurred by CM@Risk for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

6.6.2 This mutual waiver is applicable, without limitation, to all consequential damages due to either Party's termination of this Contract. Nothing contained in this Article 6.6 will be deemed to preclude an award of liquidated damages, when applicable, in accordance with Article 6.5 above.

6.6.3 Nothing herein will be deemed to constitute a waiver of any other remedy available to City in the event of CM@Risk's default under this Contract prior to full performance of the Work including, as applicable, specific performance or completion of the Work on behalf of CM@Risk, the cost and expense of which will be offset against any monies

then or thereafter due to CM@Risk (if any) and otherwise immediately reimbursed to City by CM@Risk.

ARTICLE 7 - CONTRACT PRICE

7.1 CONTRACT PRICE

7.1.1 In exchange for CM@Risk's full, timely, and acceptable performances and construction of the Work under this Contract, and subject to all of the terms of this Contract, City will pay CM@Risk the "Contract Price," which:

The sum of the CM@Risk's Fee and reimbursable Cost of the Work, as defined in Section 15 of the General Conditions, which the CM@Risk guarantees will not exceed the GMP set forth in **Exhibit D** in the amount of **$3,513,861.76.** Costs which would cause the GMP to be exceeded must be paid by CM@Risk without reimbursement from City.

7.1.2 The Contract Price is all-inclusive and specifically includes all fees, cost, insurance and bond premiums, allowances, construction contingency, owner's contingency, and taxes of any type necessary to fully, properly and timely perform and construct Work.

7.2 COSTS

For any portion of the Work which, either through this Contract, Change Order or otherwise, is performed and paid for on a cost, or time and materials basis, the costs which may be reimbursed to CM@Risk and chargeable against the Contract Price will be determined as set forth in MAG § 109.5.

SIGNATURE PAGE TO FOLLOW

IN WITNESS WHEREOF, the Parties hereto have executed this Contract through their duly authorized representatives and bind their respective entitles as of the effective date.

"CITY"

CITY OF CHANDLER

MAYOR Date

Recommended By:

Andrew Goh, P.E. Date
CIP City Engineer

APPROVED AS TO FORM:

City Attorney

ATTEST:

City Clerk Seal

"CM@RISK"

Hunter Contracting, Co.

Signature 4-2-21 Date

Charles English
Name

President
Title

charlie@huntercontracting.com
Signer Email Address

ATTEST: If Corporation

Secretary

STATE OF ARIZONA)
)ss.
County of Maricopa)

SUBSCRIBED AND SWORN TO before me, the undersigned notary public, by Charles English who was identified as the President of Hunter Contracting on this 2nd day of April, 20 21.

My commission expires:

July 20, 2022

Notary Public

MANDI REESE
Notary Public, State of Arizona
Pinal County
Commission # 547672
My Commission Expires
July 20, 2022

EXHIBIT A

PROJECT SPECIFIC SPECIAL PROVISIONS

EXHIBIT B

GENERAL CONDITIONS

CHANDLER
arizona
Community of Innovation

GENERAL CONDITIONS

Approved date: March 9, 2021

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SECTION 1 - SCOPE OF THESE GENERAL CONDITIONS

These General Conditions encompass provisions that apply, and are incorporated into all construction contracts entered into by the City of Chandler, unless otherwise specifically excluded in the executed Contract.

SECTION 2 - GENERAL DEFINITIONS

Allowance: A specific amount for a specific item of Work, if any, that City agrees has not been sufficiently designed, detailed, or selected (including design changes from 90% to 100% as authorized by and at the discretion of the City) at the time the Contract Price is agreed to for Contractor to provide a definitive price.

Alternate Systems Evaluations or Alternative Analysis: Alternatives for design, means and methods or other scope considerations that are evaluated using value analysis principles and have the potential to reduce construction costs while still delivering a quality and functional Project that meets City requirements.

Change Order: A written instrument issued after execution of the Contract Documents signed by City and Contractor, stating their agreement upon all of the following: the addition, deletion or revision in the scope of services or deliverables; the amount of the adjustment to the Contract Price, the extent of the adjustment to the Contract Time, or modifications of other contract terms. The Contract Price and the Contract Time may be changed only by Change Order.

Consultant: Person or firm that provides professional services.

City (Owner or OWNER): City of Chandler, a municipal corporation, with whom Contractor has entered into the Contract and for whom the Work or Services are to be provided pursuant to the Contract(s).

Contingent Bid Items: This is a minor bid item which is likely, but not certain, to occur during the course of work. If the Engineer determines that this work is required, the Contractor will accomplish the work and payment will be made based on the contingent unit bid price included in the proposal. Since the quantity listed in the proposal is primarily for bid comparison, the amount of work required by the Engineer may vary materially from this.

Contract: The written agreement executed between City and Contractor, including all of the Contract Documents.

Contract Documents: The documents which together form the Contract between City and Contractor, as identified in Article 2 of the Contract, or are otherwise incorporated into the Contract, including the Contract, the exhibits thereto, these General Conditions, any Notice to Proceed, and any Job Order (if applicable), the Plans and Specifications, Project Schedule, written and properly executed Change Orders, MAG Specifications and City's amendments thereto, and any other documents so designated in the Contract.

Contract Price: The agreed-upon price to be paid to Contractor for full, timely, and acceptable completion of the Work or Services under the terms of the Contract.

Contract Time(s): The number of calendar days or the dates related to the applicable phase, Substantial Completion, or Final Acceptance as stated in Contract Documents. Contract Time starts with the Notice

to Proceed (NTP) and ends with Final Acceptance. The Contract Time is set forth in the Contract and is based upon the Project Schedule agreed to by City in writing.

Contractor: The person or business association with whom City has entered into an agreement for construction related Work or Services in relation to the Project at issue.

Contractor Payment Request: The form that is accepted by City and used by Contractor in requesting progress payments or final payment and which must include such supporting documentation as is required by the Contract Documents or City.

Construction Budget: The City's budget for construction of the Project.

Construction Documents: The Plans, Specifications, and Drawings prepared and issued by the Design Professional and approved by City for construction, meaning the documents are sealed by the Design Professional (as required), acceptable for permitting and incorporated into the Contract by this reference. All amendments and modifications to the Construction Documents must be approved in writing by City prior to incorporation into the Contract.

Cost of the Work: The term Cost of the Work will mean costs necessarily incurred by Contractor in the proper performance of the Work. Such costs will be at rates not higher than the standard paid at the place of the Project except with prior consent of City.

Critical Path Method (CPM): A scheduling technique which identifies the logical sequence of the activities occurring in a Construction Project, the anticipated time required to complete each activity in the Project, and the activities that must be completed on schedule to finish the Project within the anticipated time. Typically, activities are arranged in a network that shows both activities and their dependencies. CPM is also used as a management technique which enables contracting parties to predict when activities may occur so that resources can be effectively used and limitations can be identified.

Critical Path: Critical Path is the sequence of project network activities which add up to the longest overall duration. Once established in the Project Schedule, the Critical Path for the Project must not be changed without prior written approval of City.

Day: Calendar day(s) unless otherwise specifically stated in the Contract Documents.

Design Professional: The qualified, licensed person, firm or corporation who furnishes design and construction administration services required under the Contract Documents. These services may include, but are not limited to: development of Construction Drawings and Documents, review of Contractor Submittal(s), review of and response to Requests for Information, approval and certification of progress payment applications, construction administration, and construction contract close out.

Differing Site Conditions: Concealed or latent physical conditions or subsurface conditions at the Site that, (i) materially differ from the conditions indicated in the Contract Documents, or (ii) are of an unusual nature, differing materially from the conditions ordinarily encountered and generally recognized as inherent in the Work at the general area of the Site. Caliche, rock, hard-digging or sandy/silty soil encountered on a project is not considered a "Differing Site Condition."

Drawings (Plans): Documents, which visually represent the scope, extent and character of the Work to be furnished and performed by Contractor during the construction phase and which have been prepared

or approved by the Design Professional and City. These documents include Drawings that have reached a sufficient state of completion and released by Design Professional solely for the purposes of review and use in performing constructability or bid-ability reviews by Contractor and in preparing cost estimates (e.g. Master Planning and Programming, Schematic Design, Design Development, and Construction Drawings), but *"not for construction."* Shop Drawings are not Drawings as so defined.

Final Acceptance: The City's acceptance of the facility or project from the Contractor after all Work is completed, tested, and inspected in accordance with the contract requirements. Final Acceptance results in a Letter of Acceptance (LOA).

Fixed Price: A fixed price or amount for a Contract Price, Scope of Work, materials, or other item under a Contract, Change Order, or other agreement, which City agrees, in writing, to pay instead of the actual cost.

Float: The number of Days by which an activity can be delayed without lengthening the Critical Path and extending the Contract Time. Unless otherwise expressly agreed in writing, all Float belongs to City.

Laws, Regulations, or Legal Requirements: Any and all applicable laws, rules, regulations, ordinances, codes and orders applicable to the Project of any and all governmental bodies, agencies, authorities and courts having jurisdiction and any applicable provisions of the Development Agreement for the Project (if any), including, without limitation, those provisions relating to the design and construction of the Project.

Line Item: The individual elements of Work identified on a bid or other schedule and associated with a price or a unit price and quantity particular to that individual element of the Work. Also refers to individual items of work within the Schedule of Values.

Liquidated Damages: Designated damages for the City to collect as compensation upon a specific breach (example: late delivery).

Long-Lead Item: Long-lead item refers to the equipment, product, or system that is identified at the earliest stage of a project to have a delivery time long enough to affect directly the Critical Path/the overall lead time of the project.

MAG: The Maricopa Association of Governments.

MAG Specifications: The most current version of the Uniform Standard Specifications for Public Works Construction published by MAG.

MAG Standard Details: The most current version of the Uniform Standard Details as published by MAG.

Minor change: A change in the Work having no impact on cost or time or the City-approved design intent, as determined by City.

Notice to Proceed (NTP): A written notice given by City to Contractor fixing the date on which Contractor will start to perform Contractor's obligations under the Contract.

Project: The Project specified in the Contract (including a Job Order).
Project Manager: The Project Manager designated in Article 1 of the Contract, or any successor thereto designated by City. The Project Manager has the authority to act on behalf of City, as delineated and

limited by the Contract Documents and applicable law. And City will communicate with Contractor through the Project Manager. However, the Project Manager has no authority to bind City or City Council in contravention of any City code, State or Federal statute or regulation, or these General Conditions.

Project Schedule: The schedule for the completion of the Project agreed to and required by City.

Project Specific Conditions: Additional conditions which apply to the specific Project and Scope of Work which are set forth in Exhibit D of the Contract.

Project Team: The Project Team consisting of the Design Professional, Contractor, Project Manager, and such others as City may designate.

Punch List: The list initially prepared by Contractor pursuant to the Contract Documents, reviewed and supplemented by the Project Manager (and at the sole option of the Project Manager, the Design Professional) and approved by City containing items of incomplete work not impacting Substantial Completion, if allowed for under the Contract, and to be completed or corrected by Contractor after Substantial Completion and before Final Acceptance in accordance with the Contract Documents.

Quality Assurance (QA) Testing: Testing performed to verify the accuracy and applicability of the QC testing results and to ascertain that the materials installed meet the specified levels of quality in accordance with the Contract Documents.

Quality Control (QC) Testing: Testing performed to assure that the materials installed comply with the requirements in the Contract Documents.

Requests for Information (RFIs): Formal written request from Contractor to City or Design Professional for the Project seeking clarification or additional information needed for Contractor to properly complete the Work or Services under the Contract. City may require RFI's to be submitted on a specific form or in a specified format.

Schedule of Values (SOV): The specified document prepared by Contractor, and approved and accepted by City, which divides the Contract Price into pay items, such that the sum of all pay items equals the Contract Price for the construction phase Work, or for any portion of the Work having a separate specified Contract Price.

Scope of Work: The scope of work agreed to or required by City and incorporated into the Contract as Exhibit A.

Shop Drawings: All drawings, diagrams, schedules and other data specifically prepared for the Work by Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

Site: The land or premises on which the Project is located.

Specifications: The part(s) of the Contract Documents for the construction phase consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto. Where specified, the Project must be constructed using the current Uniform Standard Specifications and Details for Public Works Construction as furnished by the Maricopa Association of Governments, as amended by City.

Subconsultant: A person, firm or corporation having a Contract with Consultant/Contractor to furnish services required as its independent professional associate or consultant with respect to the Project.

Subcontractor: An individual or firm having a direct Contract with Contractor or any other individual or firm having a Contract with the aforesaid contractors at any tier, who undertakes to perform a part of pre-construction services or construction phase Work at the Site for which Contractor is responsible. Subcontractors must be selected through the Subcontractor selection process described in the Contract Documents, if any.

Substantial Completion: The date when the City determines that the Work (or separable units of Phases as provided in the Contract Documents) is essentially and satisfactorily complete in accordance with the Contract Documents such that the Project is ready for use by the City for its intended purpose, opening to the general public, full occupancy or use by City (including, without limitation, all separate units, or rooms, facilities, access, income-generating areas, and all areas serving the general public, as applicable, must be ready for full operation without material inconvenience or discomfort), including, to the extent applicable to the Work, the following: all materials, equipment, systems, controls, features, facilities, accessories, and similar elements are installed in the proper manner and in operating condition, inspected, and approved; surfaces have been painted; masonry and concrete cleaned with any sealer or other finish applied; utilities and systems connected and functioning; site work complete; permanent heating, ventilation, air conditioning, vertical transportation, and other systems properly operating with proper controls; lighting and electrical systems installed, operable and controlled; paving completed, signage installed, and other work as applicable, has been performed to a similar state of essential and satisfactory completion.

Supplier: A manufacturer, fabricator, distributor, or vendor having a direct Contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the construction phase Work by Contractor or any Subcontractor.

Total Float: Number of Days by which pre-construction services or construction phase Work or any part of the same may be delayed without necessarily extending a pertinent Contract Time or schedule milestone in the Project Schedule.

Work: The entire completion of construction or the various separately identifiable parts thereof, required to be furnished during the construction phase. Work includes and is the result of performing or furnishing labor and furnishing and incorporating materials, resources and equipment into the construction, and performing or furnishing services and documents as required by the Contract Documents for the construction phase.

Writing: Typing, printing, photography and other modes of representing or reproducing words in a visible form, including email, and expressions.

SECTION 3 - STANDARD SPECIFICATIONS AND DETAILS

3.1 City operates under the latest revision of the MAG Specifications and MAG Standard Details as amended by City. City's current amendment to the MAG Specifications, part of the City's Unified Development Manual, may be found in the downloaded from City's website at http://www.chandleraz.gov.

3.2 Copies of the MAG Specifications and MAG Standard Details are available at the Maricopa Association of Governments office, 302 N. 1st Avenue, Suite 300, Phoenix,

Arizona. They may also be downloaded from their website at: http://www.azmag.gov/Newsroom/Publications

3.3 The MAG Specifications and Standard Details and City's amendments thereto are incorporated into the Contract by this reference.

SECTION 4 - CONTRACTOR'S RESPONSIBILITIES FOR CONSTRUCTION SERVICES

4.1 **GENERAL**

4.1.1 Contractor must construct the Work in accordance with the Contract Documents and as outlined in Exhibit A of the Contract to the satisfaction of City, exercising the degree of professional care, skill, diligence, quality and judgment that a professional construction manager engaged, experienced and specializing in the construction management of construction and facilities of similar scope, function, size, quality, complexity and detail in urban areas throughout the United States comparable to Chandler, Arizona would exercise at such time, under similar conditions. Contractor must, at all times, perform the Work in conformance with sound and generally accepted engineering principles and construction management and construction contracting practices.

4.1.2 If Contractor observes errors, discrepancies or omissions in the Contract Documents, Contractor must promptly notify the Design Professional and City and request clarification. If Contractor, with the exercise of reasonable care, should have recognized such error, inconsistency, omission or difference and fails to report it to City, and if Contractor proceeds with the Work affected by such observed errors, discrepancies or omissions, without receiving such clarifications, Contractor does so at its own risk and will be liable to City for damages resulting from proceeding without clarification.

4.1.3 Project Team and agents of each of them, testing agencies and governmental agencies with jurisdictional interests will be provided access to the Work at reasonable times for their observation, inspection and testing. Contractor must provide proper and safe conditions for such access.

4.1.4 Contractor must comply with, and require all Subcontractors to comply with, the Arizona Contractors' license laws, including all requirements with respect to being duly registered and licensed.

4.1.5 Contractor must insure that all employees performing any Work for which Contractor is responsible have a legal right to live and work in the United States. In addition, all compensation of any such employee must meet all applicable requirements of the Fair Labor Standards Act (FLSA) and Federal Minimum Wage laws.

4.1.6 Contractor must comply with the Immigration Reform and Control Act of 1986 (IRCA). Contractor understands and acknowledges the applicability of the IRCA activities. Contractor agrees to comply with the IRCA while performing their work and to permit City inspection of Contractor personnel records to verify such compliance.

4.1.7 Pursuant to MAG Specifications §§ 107.4, Contractor must report immediately any discovery of archeological ruins or artifacts. Excavation must stop immediately so that City can decide on the pertinent steps to follow such discovery.

4.1.8 All property owners that may be affected by the proposed construction activities must be

notified of the scope, duration of the construction activities and possible interference with their day-to-day activities by Contractor prior to start of construction. In addition, individual residential or commercial interferences, such as driveway restrictions, water outages, and all other Work adjacent to residence/business, require 48-hour notification in advance of specific adjoining Work. Notification may be through door hangers or other procedures approved by the City.

4.1.9 Access must be maintained to adjacent properties at all times during construction. Where property has more than one point of access, no more than one access will be restricted or closed at any one time. Access to adjacent private driveways will be maintained during all non-working hours.

4.1.10 Contractor must furnish and erect construction signs in accordance with Project Specifications. The signs must be professionally prepared and subject to approval by City, must be maintained by Contractor for the duration of the project, and must be removed by Contractor during the final project clean up.

4.1.11 The number of signs required, the size, shape, installation requirements and information to be included for construction signs is established on the detail sheet, provided, however, signs must be a minimum of 4 foot by 8 foot and must be installed so that the bottom of the sign is at least 4 foot above grade. No direct payment will be made for furnishing and erecting construction signs. The cost thereof must be included in other items for which direct payment is made. Sign locations will be determined by City.

4.1.12 All required construction signs must be installed by Contractor within 7 Days of Notice to Proceed.

4.1.13 The Work to be accomplished under these Contract Documents has been designed for City by a Design Professional retained by City for this purpose. It is understood that normal construction Administration for the purpose of interpretation of the Contract Documents is provided by City. Should any services of the Design Professional be required to assist in the corrections of errors or omissions by Contractor, or services of the Design Professional be required because of changes in structure or equipment where Contractor has requested approval of substitute methods or material, or any other items detailed herein below, those services will be provided by the Design Professional at the standard hourly rates previously negotiated with City and must be paid for by the Contractor.

4.1.14 Contractor must reimburse City for costs incurred by the Design Professional for additional services to the Project through no fault of City or the Design Professional including, but not limited to, the following conditions:

a. Additional Site visits, investigations, inspections, design work or reports by the Design Professional which are required due to damages to existing facilities or completed Work caused by the Contractor in his performance, Contractor's negligence, or Contractor's Work which is rejected as defective or as failing to conform to the Contract Documents;

b. Design Professional construction phase services rendered on the project during the time the project remains incomplete after the Contract date of final completion will be charged to Contractor at a rate previously negotiated City; and

c. All retesting required due to the failure of Contractor's Work to meet the

requirements of the Contract Documents will be at Contractor's expense. All standby and travel time by the City's testing lab, the Design Professional or City due to Contractor's inability to be prepared for testing at the agreed upon time will be at the Contractor's expense.

4.1.15 City may withhold from any payment otherwise due to Contractor any amounts necessary to pay the Design Professional for such additional services as provided herein above.

4.1.16 Contractor will not be required to bear additional costs incurred by City due to errors by the Design Professional.

4.2 **CONTRACTOR'S PRE-CONTRACT AND PRE-WORK DELIVERABLES**

4.2.1 Prior to award of the Contract, Contractor must execute Contract and deliver to City. Failure to do so may delay Contract award. Contractor must also provide to City its Contractor's License classification and number and its Federal Tax I.D. number.

4.2.2 Before beginning any Work under the Contract, Contract must be fully executed by City.

4.2.3 After Contract award, City will issue to Contractor an award letter. At that time Contractor must deliver to City such bonds and certificates of insurance with endorsements in such amounts (and other evidence of insurance requested by City) required under Section 11 of these General Conditions, and as the Contract requires.

4.2.4 As evidence of Workmen's Compensation Insurance, Contractor must, upon request, provide a letter of certification from the Industrial Commission of Arizona that Contractor is insured by the State Compensation Fund or is an authorized self-insurer or a certificate of insurance issued by an insurance company authorized by the Insurance Department of Arizona to write Workmen's Compensation and Occupational Disease Insurance in the State of Arizona.

4.2.5 Within 10 Days of the date of the executed Contract letter issued by City, Contractor must submit to City for review and acceptance the following items:

4.2.5.1 Comprehensive construction Project Schedule including a Critical Path Method (CPM) diagram schedule as described in Section 6.2. Project Schedule must be in Microsoft Project standard file format. Within 10 Days of receipt of City's comments, Contractor must make all required corrections, adjustments, and additions to complete the Project Schedule and resubmit to City for review.

4.2.5.2 Preliminary schedule of submittals and Shop Drawings. Within 10 Days of receipt of City's comments, Contractor must submit the corrected and completed schedule of Shop Drawings submissions for approval. Contractor's schedule of Shop Drawings and sample submittals will be acceptable to City if it provides a workable arrangement for reviewing and processing the required submittals.

4.2.5.3 Schedule of Values in a form specified by City reflecting the subcontracts and other categories that will be used to submit Pay Applications for the Work. The total amount of the Schedule of Values must not be greater than the Contract Price. The Schedule of Values will be reviewed at the Pre-Construction Conference and revised by Contractor within 10 Days after Pre-Construction Conference in response to comments and questions from City. Once accepted by City in writing, the Schedule of Values for the Project must not be changed without the prior written approval of City.

4.2.6 Video Recording Requirement. Prior to performing any Work, Contractor must document the existing conditions of the Site, all other areas where Work will occur and all adjacent areas that may be impacted by the Work via digital video format. Contractor must video record and index all areas, features, buildings and other public and private improvements that could potentially be impacted by the Work. Video recording must be coordinated with City. When video recording private property, Contractor must also coordinate the video recording with the private property owner, if possible. Contractor must provide City with a copy of said digital video format prior to performing any Work.

4.2.7 Aerial Drone Construction Photography.

4.2.7.1 If Contract duration is greater than 90 calendar days, Contractor must engage a professional unmanned aerial vehicle (UAV) aerial pilot to photograph the Site prior to construction mobilization, at three-month intervals during construction, and following final inspection. Drone camera specifications must meet the following minimum requirements:

a. 1-inch CMOS
b. Pixels: 20M
c. FOV 84 8.8 mm/24 mm (35 mm format equivalent) f/2.8-f/11 auto focus at 1 m-
d. For photographing: 16.9 Aspect Ratio: 5472x3078
e. For video shooting: MP4/MOV/H.264
f. FHD: 1920x1080 120p @100Mbps
g. File format: High Definition (HD) JPEG for digital photos and HD MPEG 4 for digital video.
h. All metadata to be recorded including GPS data and preserved with photographs provided.

Interval	JPEG
3 month intervals	At an altitude (AGL) between 70-90 ft.
3 month intervals	Images to be taken every 50-100 ft. to be determined based on project scope.

4.2.7.2 Drone photos to be taken in sequential geographical order and then organized and provided in the same manner unless otherwise specified.

4.2.7.3 Photos to be provided digitally via an online file share service and/or by a USB drive to contractor.

4.2.7.4 Drone pilots to obey ALL local (city, county, state) UAV regulations as well as FAA UAV guidelines including, but not limited to, conducting all flights during daylight hours, not exceeding maximum altitude ceilings (depending on area), not flying over people, yielding to other aircraft.

4.2.7.5 Drone pilots must fly drone within visual line of sight (VSOL) and have visual spotter when needed. Drone pilots only to operate in favorable weather conditions when minimum visibility is 3 miles or greater.

4.2.7.6 Drone pilots to conduct a preflight checklist and visually inspect the entire flight path prior to flying to ensure a safe flight.

4.2.7.7 Airspace Authorizations. Operations in Class G airspace are allowed without air traffic control (ATC) permission. Operations in Class B, C, D and E airspace need ATC authorization. Drone

pilots to schedule each flight in advance and based on airspace if required will notify nearby airports/control towers, etc.

4.2.8 Government Approvals and Permits.

4.2.8.1 Contractor must obtain all necessary permits for the Work and pay all applicable fees, unless otherwise noted on the Plans and in the Specifications. City permit fees will be paid internally by City. For bidding purposes, an allowance for all permit fees is included in the bid schedule under the item "allowance for permit fees." The Contractor will be paid for the actual cost of the permit fees upon submitting a receipt showing the fee Contractor has paid. Excluded from the above allowance are items such as all costs incurred by the Contractor in securing the permit except for the actual permit fee established by the agency, cost for all shut downs or outages, cost for pole bracing, cost of permits for construction water, cost of construction water, cost for any additional insurance requirements, cost for any licenses, and other similar type costs. Contractor is specifically notified of the need to obtain the necessary environmental permits or file the necessary environmental and regulatory permit notices.

4.2.8.2 Copies of all permits and the associated notices must be provided to City prior to starting the permitted activity.

4.3 PRE-CONSTRUCTION CONFERENCE

4.3.1 Prior to the commencement of any Work, City will schedule a Pre-Construction Conference.

4.3.2 The purpose of this Conference is to establish a working relationship between Contractor, the utility firms, and various City agencies. The agenda will include critical elements of the Work schedule, submittal schedule, cost breakdown of major lump sum items, Payment Requests and processing, coordination with the involved utility firms, and emergency telephone numbers for all representatives involved in the course of construction.

4.3.3 Minimum attendance by Contractor at any mandatory meeting with City must be (1) Contractor's Representative, who is authorized to execute and sign documents on behalf of the firm, (2) Contractor's on-site Superintendent, and (3) Contractor's Safety Office, or other employee responsible for safety.

4.4 PERFORMANCE OF THE WORK (INCLUDING FIELD MEASUREMENTS, SUBCONTRACTORS, AND SUPPLIERS)

4.4.1 Unless otherwise provided in the Contract Documents to be the responsibility of City or a separate Contractor, Contractor must provide through itself or Subcontractors the necessary supervision, labor, inspection, testing, start-up, material, equipment, machinery, temporary utilities and other temporary facilities to permit Contractor to complete the Work consistent with the Contract Documents.

4.4.2 Contractor must perform all construction activities efficiently and with the requisite expertise, skill and competence to satisfy the requirements of the Contract Documents. Contractor must at all times exercise complete and exclusive control over the means, methods, safety, sequences and techniques of construction.

4.4.3 Contractor's Superintendent must be present at the Site at all times that material Work under this Contract is taking place. Contractor's Superintendent or designee must be present at the Site at all times any other Work under this Contract is taking place.

Superintendent must not be replaced without written notice to City. Whenever the Superintendent is not present at a particular part of the Work where the City or Design Professional may desire to inform the Contractor relative to interpretation of the Drawings and Specifications or to disapproval or rejection of materials or Work performed, the City or Design Professional may provide such information in writing to the foreman or other worker in charge of the particular part of the Work in reference to which the information is given. Information so given will be as binding as if given to the Superintendent.

4.4.4 All elements of the Work must be under the direct supervision of a foreman or his designated representative on the Site who must have the authority to take actions required to properly carry out that particular element of the Work.

4.4.5 Working Hours. Except in connection with the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise indicated, all Work at the Site must be performed during regular working hours, and Contractor will not permit overtime work or the performance of Work on Saturday, Sunday or any legal holiday without City's written consent given after prior written notice to City. If it will become absolutely necessary to perform Work at night or on Saturdays, Sundays or legal holidays, the City must be informed at least 24 hours in advance of the beginning of performance of such Work. Only such Work will be done at night as can be done satisfactorily as determined by the City. Good lighting and all other necessary facilities for carrying out and inspecting the Work must be provided and maintained at all points where such Work is being done. Further, unless such non-normal work hours are performed at City's request or required by the Contract Documents, Contractor must pay to City all additional costs incurred by City by reason of such non-normal working hours. Expenses incurred by City for overtime compensation must be reimbursed by Contractor as follows: (i) City staff at the rate set forth in current City Fee Schedule as published on City website, (ii) Design Professional and staff at the standard hourly rates previously negotiated with City, and (iii) all others at actual cost plus ten percent administrative overhead. Such costs may be deducted by City from any payments due to Contractor. Provided, however, if overtime work or work during other than normal hours is at the request of City and not due to Contractor delay, City will pay the cost of City overtime expenses.

4.4.6 Where the Contract Documents require that a particular product be installed or applied by an applicator approved by the manufacturer, it is Contractor's responsibility to ensure the Subcontractor employed for such work is approved by the manufacturer. All materials and equipment must be stored, applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator, supplier or distributor, except as otherwise provided in the Contract Documents; but no provisions of any such instructions will be effective to impose on City of Design Professional responsibility for the means, methods, techniques, sequences or procedures of construction or for safety precautions incident thereto.

4.4.7 Before starting the Work, Contractor must carefully study and compare the various Plans, Drawings, other Contract Documents, and Specifications relative to that portion of the Work, as well as the information furnished by City, must take field measurements of any existing conditions related to that portion of the Work and must observe any conditions at the Site affecting it. The exactness of grades, elevations, dimensions, or locations given on any Drawings, or the Work installed by other contractors, is not guaranteed by City.

4.4.8 Before ordering materials or doing Work, Contractor and each Subcontractor must verify

measurements at the Site and will be responsible for the correctness of such measurements. No extra charge or compensation will be allowed because of differences between actual dimensions and the dimensions indicated on the Contract Documents, including the Drawings.

4.4.9 Ground Level Construction Photography.

4.4.9.1 The Contractor must furnish progress photographs of the project. The photographer selected by the Contractor must be approved by the City and must be either a commercial photographer or an individual experienced and equipped for such photography.

4.4.9.2 The Contractor must deliver to City all photographs taken during that period with each application for payment. If the current photographs do not accompany the application, the application will not be reviewed and will be returned to the Contractor as incomplete.

4.4.9.3 Photographs must be identified by use of typewritten labels affixed to the back of the photograph. The label must provide a description of the view, the direction from which the photograph was taken, the name of the project, City's project number, the name of Contractor and the date of the photography. The stationing must also be included for all pipeline installations.

4.4.9.4 Photographs must be taken during the construction period and must be of aesthetic composition and depict the progress of the Work from the beginning of construction through and including the finished product. City may vary the specified frequency so that significant progress or changes can be recorded on the photographs.

4.4.10 Underground Facilities.

4.4.10.1 The existence and number of facilities as shown on the Plans are estimated from information furnished by the particular utility. Contractor is responsible for field verification and location of all utilities prior to the start of construction. No field work will be allowed to start until Contractor has contacted Arizona 811 and all affected utilities have been located. In addition Contractor must expose and physically locate all potentially conflicting utilities prior to construction. The actual locations of the utilities must be compared to locations shown on the Plans and any required changes in alignment and grade must be made at the time of construction in consultation with Project Manager. It is generally recognized and Contractor should anticipate that information from Arizona 811 or information from utility companies during project design, frequently fails to disclose all underground facilities. The fact that more utility lines or other underground facilities are located in the Project Site than shown on the Project Plans does not constitute an "unforeseen Condition" and such undisclosed underground facilities do not differ materially from the conditions which Contractor should expect. The provisions of Sections 105.4, 105.6, 107.11 and 109.8.1 of the MAG Uniform Standard Specifications for Public Works Construction apply and are incorporated herein by this reference.

4.4.10.2 Contractor is responsible for all coordination with utility companies. The provisions of Sections 105.4, 105.6, 107.11 and 109.8.1 of the MAG Uniform Standard Specifications for Public Works Construction strictly apply and no additional compensation will be paid to Contractor for delays due to utility work on the project.

4.4.11 Relocation of Existing Water Meters. When a service line has been extended and a line setter installed in a meter box, City forces will re-install meter. No compression fittings will

be utilized.

4.4.12 Water Turn-On or Turn-Off.

4.4.12.1 Contractor must coordinate all water line turn-ons and turn-offs through the City. Application must be made to the Municipal Utility Division and Contractor must pay the established charges. The City will close existing valves, but will not guarantee a bone-dry Shutdown.

4.4.12.2 Contractor must notify all customers affected by the turn-off not less than 48 hours in advance. Notification must be in writing, must give the reason for the turn-off and must give the estimated time and duration that water service will be interrupted. Contractor is also notified that water turn-off will not be permitted on the Day before and after Thanksgiving Day and Christmas Day.

4.4.12.3 No direct payment will be made to Contractor for turn-ons or turn-offs. Costs associated therewith will be included in other items for which direct payment is made.

4.4.13 Tests and Inspections.

4.4.13.1 Contractor must give City timely (at a minimum, twenty-four hours) notice of readiness of the Work for all required inspections, tests or approvals. Contractor must give timely notice to City in advance of backfilling or otherwise covering any part of the Work so that city representative may, if desired, observe such part of the Work before it is concealed. Whenever Contractor varies the normal period during which Work or any portion of it is carried on each Day, Contractor must give timely notice to City so that city representative may, if desired, be present to observe the Work in progress. If Contractor fails to give such timely notice, any Work done in the absence of city representative will be subject to rejection. If Contractor gives such notice to City, but then is not ready for such inspections, tests, approvals or observations at the time so noticed, Contractor must reimburse City for all costs incurred by the attendance of city representatives.

4.4.13.2 If any law, ordinance, rule, regulation, code, or orders of any public body having jurisdiction requires any Work (or part thereof) to be inspected, tested or approved, Contractor (unless another party is specified in the Contract Documents) must assume full responsibility therefor, pay all costs in connection therewith and furnish City the required certificates of inspection, testing, or approval. Contractor must also be responsible for and must pay all costs in connection with any inspection or testing required by the Specifications in connection with City's acceptance of a manufacturer, fabricator, supplier or distributor of materials or equipment proposed to be incorporated in the Work, or of materials or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. The cost of all other inspections, tests and approvals required by the Contract Documents will be paid by City (unless otherwise specified).

4.4.13.3 All inspections, tests or approvals other than those required by law, ordinance, rule, regulation, code or order of any public body having jurisdiction must be performed by organizations acceptable to City and by the Design Professional if so specified.

4.4.13.4 Neither observations by City, the Design Professional nor inspections, tests or approvals by others will relieve Contractor from their obligations to perform the Work in accordance with the Contract Documents.

4.4.14 Uncovering Work. If any Work that is to be observed, inspected, tested or approved is covered without written concurrence of City, it must, if requested by City be uncovered for observation. Unless Contractor has given City timely notice of Contractor's intention to cover such Work and City has not acted with reasonable promptness in response to such notice, Contractor must furnish all necessary labor, material and bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, including compensation for additional professional services, and an appropriate deductive Change Order will be issued.

4.4.15 In all cases of interconnection of its Work with existing or other Work, Contractor must verify at the Site all dimensions relating to such existing or other Work. Any errors due to Contractor's failure to so verify all such grades, elevations, locations or dimensions must be promptly rectified by Contractor without any increase in the Contract Price. Any design errors or omissions noted by Contractor during this review must be reported promptly to City.

4.4.16 Contractor must establish and maintain all construction grades, lines, levels, and benchmarks, and will be responsible for accuracy and protection of same. This Work must be performed or supervised by a licensed civil engineer or surveyor in the State of Arizona.

4.4.17 Contractor must photograph all buried piping of greater than four (4) inches in diameter prior to backfill.

4.4.18 Contractor is responsible for the proper performance of the work of Subcontractors and any acts and omissions in connection with such performance. Nothing in the Contract Documents is intended or deemed to create any legal or contractual relationship between City and any Subcontractor or Sub-Subcontractor, including but not limited to any third-party beneficiary rights.

4.4.19 Contractor must coordinate the activities of all Subcontractors. Contractor must coordinate performance of the Work with City's Public Works & Utilities Department and other departments or agencies within City. The Design Professional and other contractors or parties involved in the Project. If City performs other work on the Project or at the Site with separate contractors under City's control, Contractor agrees to cooperate and coordinate its activities with those of such separate contractors so that the Project can be completed in an orderly and coordinated manner without unreasonable disruption.

4.4.20 Contractor will not substitute or change any Subcontractor or Supplier without the prior written approval of City. Any substitute or replacement Subcontractor or Supplier must be required to meet the same qualifications and selection criteria and process as the original Subcontractor or Supplier. If a Subcontract/Supplier selection plan has been approved by City, Contractor will follow that plan unless otherwise approved by City in writing.

4.4.21 Contractor must not change or replace any members of its Project team, including Contractor's Representative, Project Manager, or Superintendent, without an explanation for the change being given to City, and receiving prior written approval of the change from City, which approval will not be unreasonably withheld.

4.4.22 Subcontractors whose scope of work has a value greater than 15% of the total Contract Price are required to furnish performance and payment bonds to Contractor, unless otherwise

approved in writing by City.

4.4.23 Contractor must comply with MAG Specification § 108.2 (E) unless otherwise specified in Contract Documents.

4.5 **CONTROL OF THE PROJECT SITE**

4.5.1 Throughout all phases of construction, including suspension of Work, Contractor must keep the Site reasonably free from debris, trash and construction wastes to permit Contractor to perform its construction services efficiently, safely and without interfering with the use of adjacent land areas. Prior to Final Acceptance of the Work, or a portion of the Work, Contractor must remove all debris, trash, construction wastes, materials, equipment, machinery and tools arising from the Work or applicable portions thereof to permit City to occupy the Project or a portion of the Project for its intended use.

4.5.2 Contractor must take whatever steps, procedures or means necessary to prevent dust nuisance due to construction operations. The dust control measures must be maintained at all times to the satisfaction of City and in accordance with the requirements of the Maricopa County Bureau of Air Pollution Control Rules and Regulations.

4.5.3 Contractor must maintain Americans with Disabilities Act (ADA) and American National Standards Institute (ANSI) accessibility requirements during construction activities, including without limitation compliance with the 2010 regulations governing implementation of the ADA to the extent applicable. ADA and ANSI accessibility requirements must include, but not be limited to, parking, building access, areas of refuge, and emergency exit paths of travel. Contractor i s responsible for the coordination of all Work to minimize disruption to residents and the public.

4.5.4 Only materials and equipment used directly in the Work will be brought to and stored on the Site by Contractor. When equipment is no longer required for Work, it must be removed promptly from the Site. Protection of construction materials and equipment stored at the Site from weather, theft, damage and all other adversity is solely the responsibility of the Contractor.

4.5.5 Contractor agrees all persons working on the Site must act at all times in the best interest of the Project and will comply with all applicable rules and regulations reasonably set forth by City related to the Site. Notwithstanding the foregoing or anything in this Agreement to the contrary, City may remove from the Site any individual who City deems in their reasonable discretion to be creating a disturbance or causing any problem on the Site.

4.5.6 Contractor will be responsible to City for the acts and omissions of Contractor's employees, Subcontractors and their agents and employees, and any other person performing any of the Work under a Contract with Contractor, or claiming by, through or under Contractor, for all damages, losses, costs and expenses resulting from such acts or omissions.

4.5.7 City may conduct criminal, drive history, and all other requested background checks of Contractor and Subcontractor personnel performing Work or who have access to City's information, data, or facilities in accordance with City's current background check policies, or the provisions of the Project Specific Conditions. Any officer, employee or agent that fails to background check must be replaced immediately.

4.5.8 City will have a final authority, based upon security reasons: (i) to determine when

security clearance of Contractor's and Subcontractor's personnel is required; (ii) to determine the nature of the security clearance, up to and including fingerprinting personnel; and (iii) to determine whether or not any individual or entity may provide Services or perform Work under the Contract.

4.5.9 If City objects to any personnel for any reasonable cause, then Contractor must, upon notice from City, remove such individual from the Project.

4.6 **PROJECT SAFETY**

4.6.1 The Project and all Work performed in relation thereto is governed by applicable provisions of the federal laws, including but not limited to, the latest amendments of the following:

a. Williams-Steiger Occupational Safety & Health Act of 1970, Public Law, 91-596.

b. Part 1910 and Part 1926 – Occupational Safety and Health Standards, Chapter XVII of Title 29, Code of Federal Regulations.

c. Part 1518 – Safety and Health Regulations for Construction, Chapter XIII of Title 29, Code of Federal Regulations.

4.6.2 Contractor is responsible for safety of the job Site for employees of Contractor as well as for members of the general public and others who may drive or walk through or be at the Site.

4.6.3 Contractor recognizes the importance of performing the Work in a safe manner so as to prevent damage, injury or loss to: (i) all individuals at the Site, whether working or visiting; (ii) the Work, including materials and equipment incorporated into the Work and stored On-Site or Off-Site; and (iii) all other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction; and (iv) the owners or tenants of adjacent property and their patrons, employees and invitees.

4.6.4 Contractor assumes responsibility for implementing and monitoring all safety precautions and programs related to the performance of the Work.

4.6.5 Contractor must provide a "competent person' as required by O.S.H.A regulations. The "competent person" must be identified at the Pre-Construction Conference with City advised in writing of any changes.

4.6.6 The "competent person" must make routine daily inspections of the Site and must hold weekly safety meetings with Contractor's personnel, Subcontractors and others as applicable.

4.6.7 Contractor and Subcontractors must comply with all legal and regulatory requirements relating to safety, as well as any City specific safety requirements set forth in the Contract Documents, provided that such City-specific requirements do not violate any applicable legal and regulatory requirements.

4.6.8 Contractor will immediately report in writing any safety-related injury, loss, damage or accident arising from the Work to Project Manager and, to the extent mandated by Legal Requirements, to all government or quasi-government authorities having jurisdiction over safety-related matters involving the Project or the Work.

4.6.9 Contractor's responsibility for safety under this Section is not intended in any way to relieve Subcontractors and Sub-Subcontractors of their own contractual and legal obligations and responsibility for (i) complying with all Legal Requirements, including those related to health and safety matters, and (ii) taking all necessary measures to implement and monitor all safety precautions and programs to guard against injury, losses, damages or accidents resulting from their performance of the Work.

4.6.10 As between City and Contractor, Contractor is responsible to City for any and all the safety issues relating to the Work on the Project. Contractor must administer and manage the safety program. This will include, but not necessarily be limited to review of the safety programs of each Subcontractor. Contractor must monitor the establishment and execution of compliance with all applicable regulatory and advisory agency construction safety standards. Contractor's responsibility for review, monitoring, and coordination of the Subcontractor's safety programs will not extend to direct control over execution of the Subcontractors' safety programs. Notwithstanding Contractor's safety obligations to City, it is agreed and understood that each individual Subcontractor will remain controlling employer responsible for the safety programs and precautions applicable to its own work and the activities of other's work in areas designated to be controlled by such Subcontractor for purposes of workers compensation insurance coverage.

4.6.11 Nothing in this agreement will relieve Contractor of his responsibility to maintain traffic, structures, etc., as noted on the Plans, Specifications, and Project Specific Conditions. Contractor is responsible to provide all necessary shoring, bracing and trench support as is necessary to maintain traffic structures, etc., as stipulated in the Plans, Specifications, and Special Provisions. If the stability of adjoining building, walls, roadways, etc., is endangered by Contractor's excavation, shoring, bracing, or under pinning must be provided as necessary to ensure project safety. Cost for shoring, bracing, underpinnings, and trench support will be included in the appropriate items listed in the Contract Price, and no additional payment will be made for this work.

4.7 MATERIALS QUALITY, SUBSTITUTIONS, AND SHOP DRAWINGS

4.7.1 Quality Control and Quality Assurance Testing.

4.7.1.1 All construction materials to be used or incorporated in the Project are subject to inspection, Quality Control & Quality Assurance Testing, and approval or rejection by City. Any material rejected by City must be removed immediately and replaced in an acceptable manner to City at no additional cost to City. When QC/QA tests indicate noncompliance with the Contract Documents, retesting must be performed by the same testing laboratory that performed the tests that indicated noncompliance.

4.7.1.2 The Contractor must establish, provide, and maintain an effective Quality Control Testing Program (QCTP). The Contractor must develop his own program or procure the services of a consultant. In either case, the party performing the tests must be currently certified by the National Bureau of Standards in the National Voluntary Laboratory Accreditation Program (NVLAP) for construction services or the AASHTO Accreditation Plan (AAP) for Soils, Asphalt and Concrete. The Contractor must provide all support necessary to perform QC and QA testing and sampling (i.e. shoring for testing trench backfill, backhoes, motor graders, loaders, etc. to facilitate testing and sampling). The City will perform the QA testing.

4.7.1.3 The Contractor must submit a written QCTP to the City as a required submittal. The Contractor must not begin Work until the Quality Control Program has been reviewed and

accepted by the City. Resumes of all personnel that will be associated directly or indirectly with the QCTP must be included.

4.7.1.4 The QCTP must include, but not be limited to, on-site/field and laboratory testing of all material delivered to the Site and any existing materials or conditions pertinent to the project.

4.7.1.5 All testing must be under the direction of a Professional Engineer registered in the State of Arizona, knowledgeable in Materials Testing. All "Test Report" forms must be stamped by said Engineer.

4.7.1.6 The written QCTP will set forth the responsibilities of the engineer, project manager, supervisory personnel and each technician assigned to this project. Substitutions or replacement of personnel must require prior written approval by the City. All personnel must be proficient within their assigned duties and possess certification(s) commensurate with their position and responsibilities. The minimum certification(s) for each technician must be NICET Level II, Arizona Technical Testing Institute, American Concrete Institute, or other nationally recognized program applicable to the project and approved by the City of Chandler. The written QCTP must include a description of the required field and construction materials laboratory tests, including required frequencies that meet the minimums established herein.

4.7.1.7 The Contractor must establish a system to record and report all material test results. The daily test reports must include, but not be limited to:

a. Test designation;
b. Date of test;
c. Name of tester;
d. Location of test/sample (station and offset);
e. Product suppliers and product codes (as applicable);
f. Depth/elevation of test/sample;
g. Test result;
h. Control requirement(s);
i. Cause of rejection (if applicable);
j. Results of retests (if applicable); and
k. Remedial action (if applicable).

4.7.1.8 The Contractor must submit test results to the designated City representative.

4.7.1.9 The Contractor must also submit a weekly report to the City summarizing the testing and construction activities completed by emailing the report to the email addresses noted above. All weekly reports must be submitted simultaneously to the Contractor and the City of Chandler. The report must include individual summary sheets for each utility line, structure, and portion of the pavement section. Cores must be numbered sequentially throughout the Project. Re-cores must reference the original core by number and must contain the averaged values for thickness and density. Total pavement thickness must be reported. Vertical location of tests for underground utilities must indicate the depth of the

excavation at the location of the test (i.e., cut to flow line [if applicable], depth to bottom or top of pipe, etc.). Density tests must be numbered sequentially. If the minimum number of tests has not been performed per the written QCTP, this must be stated in the weekly summary report with an explanation of the circumstances.

4.7.1.10 The City will maintain a copy of the Project test results and weekly reports in the Project file. In cases where quality control activities do not comply with the contract provisions, the City may:

a. Order the Contractor to replace ineffective or unqualified quality control personnel.

b. Order the Contractor to stop operations until appropriate corrective action is taken.

4.7.1.11 Although minimum testing requirements are specified herein, the Contractor bears full responsibility for the quality of the materials and their installation and may elect to perform additional testing beyond the requirements set forth herein to ensure compliance.

4.7.1.12 The Quality Control requirements contained in this Section are in addition to and separate from Quality Assurance Testing, which will be performed by the City of Chandler or its representative. If the Quality Assurance test results are not in agreement with the Quality Control test results, the Contractor will have the option to retain a third party consultant for referee tests. The third party consultant must meet the same requirements as the consultant performing the Quality Control Testing. The results of the third party will be binding. All cost incurred by the referee testing will be the Contractor's expense. If the Contractor elects not to retain a third party for referee testing, the City of Chandler test results will prevail.

4.7.1.13 Except as otherwise noted within this Section, Work or materials required by this Section are non- pay items. Per MAG Section 101, a non-pay item is an item of Work for which no separate payment will be made, the cost of which is to be included as an incidental cost for associated item(s) included on the Bid Schedule or Schedule of Values.

4.7.2 Trade Names and Substitutions.

4.7.2.1 Substitutions prior to bid will only be considered if in compliance with Arizona Revised Statute § 34-104.

4.7.2.2 Contractor, if requested by City, must submit Samples or any additional information that may be necessary to evaluate the acceptability of the substitution.

4.7.2.3 City will make the final decision and will notify Contractor in writing as to whether the substitution has been accepted or rejected.

4.7.2.4 If City does not respond within 15 working days, Contractor must continue to perform the Work in accordance with the Contract Documents and the substitution will be considered rejected.

4.7.3 Shop Drawings.

4.7.3.1 Contractor must prepare and submit Shop Drawings which show details of all Work to insure proper installation of the Work using those materials and equipment specified under the approved Plans and Specifications.

4.7.3.2 Contractor must submit a schedule of Shop Drawing submissions, which avoids bulk submissions to the extent reasonably possible, with the Project Schedule for City approval. The schedule of Shop Drawing submissions must include all of the items for which Shop Drawings are required by the Contract Documents, including the Specifications. Unless otherwise noted, Shop Drawings will not be required for items specified or detailed in the Uniform Standard Specifications and Details or the Technical Specifications.

4.7.3.3 Shop Drawings must be numbered consecutively for each Specification section and must accurately and distinctly present the following:

a. All working and erection dimensions.

b. Arrangements and sectional views.

c. Necessary details, including complete information for making connections between work under this Contract and work under other Contracts.

d. Kinds of materials and finishes.

e. Parts list and description thereof.

4.7.3.4 Each Drawing or page must include:

a. Project Name, City of Chandler Project Number and descriptions.

b. Submittal date and space for revision dates.

c. Identification of equipment, product or material.

d. Name of Contractor and Subcontractor.

e. Name of Supplier and Manufacturer.

f. Relation to adjacent structure of material.

g. Physical dimensions clearly identified.

h. ASTM and Federal Specifications references.

i. Identification of and justification for deviations from the Contract Documents.

j. Contractor's stamp, initialed or signed, dated and certifying the review of submittal, certification of field measurements and compliance with Contract.

k. Location at which the equipment or materials are to be installed.

4.7.3.5 Location will mean both physical location and location relative to other connected or attached material. City will return unchecked any submittal, which does not contain complete data on the Work and full information on related matters.

4.7.3.6 Stock or standard drawings will not be accepted for review unless full identification and supplementary information is shown thereon in ink or typewritten form.

4.7.3.7 Contractor must schedule, prepare and submit all Shop Drawings in accordance with a time-table that will allow its suppliers and manufacturers sufficient time to fabricate, manufacture, inspect, test and deliver their respective products to the project Site in a timely manner so as to not delay the complete performance of the Work.

4.7.3.8 If the Shop Drawings show departures from the Contract requirements, Contractor must

make specific mention thereof in the Letter of Transmittal; otherwise review of such submittals by City will not constitute review of the departure. Review of the Drawings will constitute review of the specific subject matter for which the Drawings were submitted and not of any other structure, material, equipment, or apparatus shown on the Drawings.

4.7.3.9 The review of Shop Drawings will be general and will not relieve Contractor of responsibility for the accuracy of such Drawings, nor for the proper fitting and construction of the Work, nor for the furnishing of materials or Work required by the Contract. No construction called for by Shop Drawings will be initiated until such Drawings have been reviewed and approved by City.

4.7.3.10 The procedure in seeking review of the Shop Drawings will be as follows:

a. Contractor must submit complete sets of Shop Drawings and other descriptive data as specified in this Section.

b. After Contractor's submittal or resubmittal of Shop Drawings, if Contractor has submitted Shop Drawings in accordance with the City-approved submittal schedule, or upon resubmission, City will be provided with three (3) calendar weeks for review. Should City require additional review time above and beyond the three (3) calendar weeks, Contractor may ask for a time extension or monetary compensation, if they can present valid, factual evidence that actual damages were incurred by Contractor. City will determine the amount of the time extension or the monetary compensation to be awarded Contractor, if any, in accordance with City's Policy Statement for Calculating Delays and Damages, Appendix 1.

4.7.3.11 Contractor will be responsible for all extra costs incurred by City caused by Contractor's failure to comply with the procedure outline above.

4.7.4 Long Lead Time Items. Contractor must submit Shop Drawings, as required by the Engineer, on all long lead items to be furnished and installed as part of the project within 10 Days after the date of the executed Contract letter issued by City. In addition, Contractor must order all long lead items to be furnished and installed as part of this Project within 3 Days after receiving approved Shop Drawings. For all long lead times for which Shop Drawings are not required, Contractor must order said long lead items within 15 Days after the date of the executed Contract letter issued by City. Within 2 Days after ordering long lead items, Contractor must supply copies of all purchase orders, along with an accurate delivery schedule from the supplier.

4.7.5 Construction Water. If Contractor uses water from City's water system for construction water, Contractor must obtain a fire hydrant meter from City of Chandler Utility Services (480-782-2280) and all construction water must be obtained through the hydrant meter. Contractor must pay all fees related to the hydrant meter and all water bills for construction water. All cost for meters and construction water will be included in the Contract Price.

4.8 PROJECT RECORD DOCUMENTS

4.8.1 During the construction period, Contractor must maintain at the jobsite a full-size set of prints of the Construction Document Drawings and Shop Drawings for Project Record Document purposes.

4.8.2 Contractor must mark these Drawings to indicate the actual installation where the installation

varies from the original Construction Documents. Contractor must give particular attention to information on elements that will be concealed, which would be difficult to identify or measure and record later. Items required to be marked include but are not limited to:

a. Dimensional changes to the Drawings.

b. Revisions to details shown on Drawings.

c. Locations and depths of underground utilities.

d. Revisions to routing of piping and conduits.

e. Actual equipment locations.

f. Changes made by Change Order or Addendum.

g. Details not on original Contract Drawings.

4.8.3 Contractor must mark completely and accurately Project Record Drawing sets of Construction Documents.

4.8.4 Contractor must mark Project Record Drawings sets with red erasable colored pencil.

4.8.5 Contractor must note Request for Information (RFI) Numbers and Change Order numbers, etc., as required to identify the source of the change to the Construction Documents.

4.8.6 Contractor must submit Project Record Drawing sets and Shop Drawings to City or its representative for review and comment.

4.8.7 Upon receipt of the reviewed Project Record Drawings from City, Contractor must correct any deficiencies and omissions to the Drawings and submit the final original of the Project Record Drawings to City prior to Final Payment.

4.8.8 Project Manager will review the Project Record Drawings monthly prior to the date established for the Payment Request and will be the sole judge of acceptance of these Drawings.

4.9 **WARRANTY AND CORRECTION OF DEFECTIVE WORK**

4.9.1 Contractor warrants to City that the construction, including all materials and equipment furnished as part of the Work, will be new unless otherwise specified in the Contract Documents, of good quality, and free of defects in materials and workmanship. Contractor's warranty obligation excludes defects caused by abuse, alterations, or unreasonable failure to maintain the construction by persons other than Contractor, subcontractors, or others under Contractor's control. Nothing in this warranty will limit any manufacturer's warranty which provides City with greater warranty rights than set forth herein or in the Contract. Contractor will provide City with all manufacturers' warranties and operation and maintenance manuals upon substantial completion of the Work. Contractor's warranty must be for one (1) year, in accordance with MAG Specification § 108.8, and will commence for all portions of the Work upon Final Acceptance of the entire Work as determined by City under the Contract. All statutory or other warranties, express or implied, related to latent defects will remain in force and are not limited by this provision.

4.9.2 City May Stop the Work. If the Work is defective, or Contractor fails to supply sufficient skilled workmen or suitable materials or equipment, City may order Contractor to stop the Work without cost to City, or any portion thereof, until the cause for such order has been

eliminated; however, this right of City to stop the Work will not give rise to any duty on the part of City to exercise this right for the benefit of Contractor or any other party.

4.9.3 Correction or Removal of Defective Work.

4.9.3.1 If required by City, Contractor must promptly, without cost to City and as specified by City, either correct any defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by City, remove it from the Site and replace it with non-defective Work. Contractor must correct any Work which may be displaced in correcting, removing or replacing defective Work. No compensation will be allowed Contractor for such removal, replacement or remedial Work. Contractor must reimburse City for costs incurred by City due to such correction or removal including but not limited to additional expenses for inspection, testing or observation and for repeated reviews by the City or Design Professional.

4.9.3.2 Upon failure on the part of the Contractor to comply within a reasonably prompt time with any written order of City to correct or remove defective Work, City has authority to cause nonconforming materials or rejected Work to be remedied, removed, or replaced at the Contractor's expense and to deduct the costs from any moneys due or to become due the Contractor.

4.9.4 City May Correct Defective Work. If Contractor fails within a reasonable time after written notice of City to proceed to correct defective Work or to remove and replace rejected Work as required by City or if Contractor fails to perform the Work in accordance with the Contract Documents (including any requirements of the progress schedule), City may, after 7 Days' written notice to Contractor, correct and remedy any such deficiency. To the extent necessary to complete corrective and remedial action, City may exclude Contractor from all or part of the Work, and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site and incorporate in the Work all materials and equipment stored at the Site or for which City has paid Contractor, but which are stored elsewhere. Contractor must allow City, city representatives, agents and employees such access to the Site as may be necessary to enable City to exercise City's rights under this Section. All direct and indirect costs of City in exercising such rights will be charged against Contractor in an amount verified by City representative, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents and a reduction in the Contract Price. Such direct and indirect costs will include, in particular but without limitation, compensation for additional professional services required and all costs of repair and replacement of Work or others destroyed or damaged by correction, removal or replacement of Contractor's defective Work. Contractor will not be allowed an extension of the Contract Time because of any delay in Contractor's performance of the Work attributable to the exercise by City or City's rights hereunder.

4.9.5 Correction or Removal of Unauthorized Work.

4.9.5.1 Any Work done beyond the lines and grades shown on the Drawings or established by the Design Professional or any changes in, additions to, or deductions from the Work done without written authority will be considered as unauthorized and will not be paid for. Work so done may be ordered remedied, removed, or replaced at the Contractor's expense.

4.9.5.2 Upon failure on the part of the Contractor to comply promptly with any order of the City, City will have authority to cause unauthorized Work to be remedied, removed, or replaced

at the Contractor's expense and to deduct the costs from any moneys due or to become due the Contractor.

4.9.6 Correction Period - One Year Guarantee.

4.9.6.1 If, within one year after the date of Final Acceptance, or such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents, any Work is found to be defective, Contractor must promptly, without cost to City and in accordance with City's written instructions, either correct such defective Work, or, if it has been rejected by City, remove it from the Site and replace it with non-defective Work. If Contractor does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, City may have the defective Work corrected or the rejected Work removed and replaced, and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, must be paid by Contractor. Such action by the City will not relieve the Contractor of the guarantees required by this Section or elsewhere in the Contract Documents.

4.9.6.2 If, in the opinion of the City, defective Work creates a dangerous condition or requires immediate correction or attention to prevent further loss to the City or to prevent interruption of operation of the City, the City will attempt to give the notice required by this Section. If the Contractor cannot be contacted or does not comply with the City's request for correction within a reasonable time as determined by the City, the City may, notwithstanding the provisions of this Section, proceed to make such correction or provide such attention; and the costs of such correction or attention will be charged against the Contractor. Such action by the City will not relieve the Contractor of the guarantees required by this Section or elsewhere in the Contract Documents.

4.9.6.3 This Section does not in any way limit the guarantee on any items for which a longer guarantee is specified or on any items for which a manufacturer or supplier gives a guarantee for a longer period. The Contractor agrees to act as co-guarantor with such manufacturer or supplier and must furnish the City all appropriate guarantee or warranty certificates upon completion of the Project. No guarantee period, whether provided for in this Section or elsewhere, will in any way limit the liability of Contractor or their sureties or insurers under the indemnity or insurance provisions of these General Conditions and the Project Specific Special Conditions.

4.9.7 Acceptance of Defective Work.

4.9.7.1 If, instead of requiring correction or removal and replacement of defective Work, City may accept Work when in the best interest of the City to do so with appropriate monetary credit from Contractor. If any such acceptance occurs prior to final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents, including appropriate reduction in the Contract Price; or, if the acceptance occurs after final payment, an appropriate amount must be paid by Contractor to City.

4.9.7.2 Alternatively, City may require Contractor to furnish at Contractor's expense, a special performance guarantee or other surety prior to acceptance of defective work.

4.9.8 The Warranty period begins on the Final Acceptance date noted in the Certificate of Completion, irrespective of early completion by some Subcontractors of their work.

4.9.9 Contractor's warranty obligation must be in accordance with MAG Specifications.

4.9.10 Nothing in the warranties contained in the Contract Documents are intended to limit any manufacturer's warranty which provides City with greater warranty rights than set forth in this Section or the Contract Documents. Contractor must provide City with all manufacturers' warranties prior to Substantial Completion, if applicable, or Final Acceptance.

4.9.11 Contractor agrees that it will be responsible to manage and administer the correction of any Work that is not in conformance with the Contract Documents during the warranty periods set forth in this Section, or during any longer periods to the extent required by the Contract Documents. A progress payment, or partial or entire use or occupancy of the Project by City, will not constitute acceptance of Work not in accordance with the Contract Documents.

4.9.12 When notified of a warranty issue, Contractor must respond in writing within 48-hours and must perform warranty Work as soon as material for said repairs are available (as judged solely by City), and in any event Contractor must, take immediate steps to commence and complete correction of nonconforming Work no later than the time period set forth in City's written notification in accordance with the Contract Documents. This includes the correction, removal or replacement of the nonconforming Work and any damage caused to other parts of the Work affected by the nonconforming Work. If defects develop which are determined by City to be an emergency, City will notify Contractor, via the most expeditious means regarding the nature and condition of the defects. In turn, Contractor must immediately dispatch necessary forces to correct the defect or the emergency condition in accordance with Contract Documents.

4.9.13 The time periods referenced in this Section apply only to Contractor's obligation to correct nonconforming Work and is not intended to constitute a period of limitations for any other rights or remedies that City may have regarding Contractor's other obligations under the Contract Documents.

4.9.14 Without limiting the foregoing or anything in these General Conditions or the Contract to the contrary, Contractor must obtain and provide to City all warranties for any portion of the Project offered by the manufacturer, installer or provider thereof. City and the user of the facility will have the right to the full value and benefit of all such warranties. Contractor must ensure all such warranties are fully transferrable to facilitate the full value of this Section.

4.9.15 Contractor's warranty excludes damages or defects caused by abuse, alterations to the Work not executed by or through Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage.

4.9.16 In the event of any noncompliance with this entire Section 4, City may require Contractor to stop or suspend the Work in whole or in part.

SECTION 5 - CITY RESPONSIBILITIES

5.1 CITY PROJECT MANAGER AND INSPECTORS

5.1.1 Project Manager is responsible for providing City-supplied information and approvals in a timely manner to assist Contractor to fulfill its obligations under the Contract Documents.

5.1.2 Project Manager will also provide Contractor with prompt notice when it observes any failure on the part of Contractor to fulfill its contractual obligations, including any default or defect in the Project or non-conformance with the Drawings and Specifications.

5.1.3 City may utilize Field Inspectors to assist Project Manager during construction in observing performance of Contractor. City's use of Inspectors is for the purpose of assisting Project Manager.

5.1.4 The Inspectors are authorized to inspect all Work and materials furnished. Such inspections may extend to all or part of the Work and to preparation, fabrication or manufacture of the materials to be used. The Inspectors have the authority to issue instructions contrary to the Construction Documents if approved and coordinated with the directions of Project Manager.

5.1.5 The Inspectors have the authority to reject work or materials until any questions at issue can be decided by Project Manager.

5.1.6 The use of Inspectors by City will not make City responsible for or give City control over construction means, methods, techniques, sequences or procedures or for safety precautions or programs or responsibility for Contractor's failure to perform the Work in accordance with Contract Documents. The Inspectors are not authorized to direct any of Contractor's activities, employees or Subcontractors.

5.2 **DESIGN PROFESSIONAL SERVICES**

City may contract separately with one or more Design Professionals to provide construction administration of the Project. The Design Professional's Contract, as well as other firms hired by City may be furnished to Contractor. Contractor does not have the right to limit or restrict or reject any Contract modifications that are mutually acceptable to City and Design Professional.

5.3 **CITY'S SEPARATE CONTRACTORS**

City is responsible for all work performed on the Project or at the Site by separate contractors retained by City. City will contractually require its separate contractors to reasonably cooperate with, and reasonably coordinate their activities so as not to interfere with Contractor in order to enable Contractor to timely complete the Work consistent with the Contract Documents. Contractor must immediately notify the Project manager, and address the matter in the next monthly status report, if any activities of such separate contractors are expected to interfere, or are interfering, with Contractor and such interference will or could result in any delay in Contractor's performance of the Work.

5.4 **PERMIT REVIEW AND INSPECTIONS**

5.4.1 If requested by Contractor, Project Manager will provide assistance and guidance in obtaining necessary reviews, permits and inspections.

5.4.2 The regulating agencies of City, such as Development and Sustainability, Fire and Planning Departments, enforce legal requirements. The enforcement activities of City are independent and separate from this Agreement.

5.5 **PLANS AND SPECIFICATIONS TO THE CONTRACTOR**.

Contractor will be provided up to five copies of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request,

at the cost of reproduction.

SECTION 6 - CONTRACT TIME

6.1 CONTRACT TIME

6.1.1 The Contract Time will start with the Notice to Proceed ("NTP") and end with Final Acceptance.

6.1.2 Beginning on the date of the NTP, Contractor must begin to fulfill Contractor's obligations under the Contract. Contractor's obligations include providing City and other agencies with any submittals required by the Project Specific Special Provisions, including but not limited to, an approved Project Schedule, Traffic Control Plans, and a Stormwater Pollution Prevention Plan. Contractor must submit all such required submittals before any physical construction work commences on the Site. NTP does not authorize construction work until all contract insurance, bonds, and schedules are submitted to and accepted by the City.

6.1.3 The Contract Time will be as set forth in the Project Schedule. Contractor agrees that it will commence performance of the Work and complete the Project through both Substantial Completion and Final Acceptance within the Contract Time.

6.1.4 Time is of the essence of this Contract, for the Project, for the Work, and for each phase and designated Milestone thereof.

6.1.5 Failure of Contractor to perform any covenant or condition contained in the Contract Documents within the time periods specified herein, will constitute a material breach of this Contract entitling City to terminate the Contract unless Contractor applies for and receives an extension of time, in accordance with the procedures set forth in the Contract Documents.

6.1.6 Failure of City to insist upon the performance of any covenant or condition within the time periods specified herein, will not constitute a waiver of Contractor's duty to perform every other covenant or condition within the designated periods, unless a specific waiver is granted in writing for each such covenant or condition.

6.1.7 City's agreement to waive a specific time provision or to extend the time for performance will not constitute a waiver of any other time provisions contained in the Contract Documents. Failure of Contractor to complete performance promptly within the additional time authorized in the waiver or extension of time agreement constitutes a material breach of this Contract entitling City to all the remedies set forth herein or provided by law.

6.2 PROJECT SCHEDULE

6.2.1 The Project Schedule must be in Microsoft Project standard file format, must be updated and maintained throughout the Contract Time, and must contain the following:

6.2.1.1 Detailed representation of all activities for the project, both on-site construction and major procurement. All significant activities together with the resource loading requirements for each and all items appearing on the schedule of values or bid schedule for progress payments must be shown on the Project Schedule or in attached transmittal letter as described in Section 6.2.8.

6.2.1.2 Dependencies between activities must be indicated so that it may establish as to the effect the progress of any one activity would have on other activities and on the Schedule.

6.2.1.3 Activities for submission, review, and approval of all required submittals.

6.2.1.4 An amount of time will be established prior to the final completion date for "punch list and cleanup". No other activities will be scheduled during this period. Punch list and cleanup must be shown on the Project Schedule and must be entirely completed prior to the expiration of the Contract Time.

6.2.2 Within 10 Days of receipt of City's comments, Contractor must make all required corrections, adjustments, and additions to complete the Project Schedule and resubmit to City for review. City's review of and response to the Project Schedule is for the purpose of: (1) City planning and staffing for the Project as may be required from time to time; (2) ensuring Contractor's general conformance with the scheduling requirements of the Contract Documents and completion of the Project within the Contract Time; and (3) monitoring and evaluating the construction status for purposes of approving monthly progress payments. Acceptance of a submitted schedule by City should in no way be construed as an affirmation or admission that the schedule is reasonable or workable by Contractor. The responsibility for completing the Work on the Project within the Contract Time remains the obligation of Contractor. City's review does not relieve Contractor from compliance with the requirements of the Contract Documents or be construed as relieving Contractor of its complete and exclusive control over the means, methods, sequences and techniques for executing the work.

6.2.3 The Project Schedule must show milestones, including milestones for City-furnished information, and must include activities for City-furnished material and construction by other contractors when those activities are interrelated with Contractor activities.

6.2.4 The Project Schedule must be revised as required by conditions and progress of the Work, but such revisions do not relieve Contractor of its obligations to complete the Work within the Contract Time, as adjusted in accordance with the Contract Documents. No modification to the Contract Documents or the Contract Time will be effective unless approved in advance by City.

6.2.5 For all items of materials and equipment that are critical or may require long lead times to acquire, the Project Schedule must show dates for submission, review and approval of submittals, ordering, and delivery.

6.2.6 An updated Project Schedule must be submitted monthly to City as part of the Payment Request. The monthly submittal must include one full size plot of the entire schedule and one electronic copy containing the schedule in Microsoft Project standard file format. In addition, Contractor must, upon request by City, provide a copy of all submitted schedule data in electronic format which must be clearly labeled with the Project description, scheduling program name and version number, and schedule print/data date.

6.2.7 Contractor must provide City with a monthly status report with each Project Schedule detailing the progress of the Work, including: (i) if the Work is proceeding according to schedule, (ii) any discrepancies, conflicts, or ambiguities found to exist in the Contract Documents that require resolution, and (iii) other information detailing items that require resolution so as not to jeopardize the ability to complete the Work in the Contract Time.

6.2.8 With each Project Schedule submittal, Contractor must include a transmittal letter including the following:

a. Description of problem tasks, referenced to field instructions or requests for information (RFI's), as appropriate.

b. Current and anticipated delays including:

(i) Cause of the delay.

(ii) Corrective action and schedule adjustments to correct the delay.

(iii) Known or potential impacts and their delay on other activities, milestones, and their impact on the Substantial Completion and Final Acceptance dates.

(iv) Changes in construction sequence.

c. Pending items and status thereof including but not limited to:

(i) Time Extension requests;

(ii) Substantial Completion date status;

(iii) Final Acceptance date status.

d. If ahead of schedule, the number of calendar Days ahead.

e. If behind schedule, the number of calendar Days behind.

f. Other Project or scheduling concerns.

6.2.9 Critical Path Method (CPM).

6.2.9.1 Unless otherwise specified in the Contract, the Project Schedule must include a Critical Path Method (CPM) diagram schedule showing the sequence of activities, the interdependence of each activity and identifies the Critical Path.

6.2.9.2 The CPM diagram schedule must be in calendar Days and indicate duration, earliest and latest start and finish dates for all activities, and total Float Times for all activities except critical activities. The CPM diagram must be presented in a time scaled graphical format for the Project as a whole.

6.2.9.3 The CPM diagram schedule must indicate all relationships between activities.

6.2.9.4 The activities making the Project Schedule must contain sufficient detail to assure that adequate planning has been done for proper execution of the Work and such that it provides an appropriate basis for monitoring and evaluation the progress of the Work. Individual activities must not exceed 30 Days in length, in most cases.

6.2.9.5 The CPM diagram schedule must be based upon activities, which coincide with the Schedule of Values.

6.2.9.6 The CPM diagram schedule must show all submittals associated with each work activity and the review time for each submittal.

6.2.10 Float Time.

6.2.10.1 The total Float Time within the overall schedule is for the exclusive use of City, but City may approve Contractor's use of Float as needed to meet contract Milestones and

the Project completion date.

6.2.10.2 Contractor will not be allowed to sequence, hide, or reallocate Float Time through such strategies, as extending activity duration estimates to consume available Float, using preferential logic, or using extensive crew/resource sequencing, tec. No time extensions will be granted nor delay damages paid until a delay occurs which extends the Work beyond the Contract Time.

6.2.11 City-Caused Delays. City-caused delays on the Project, if any, may be offset by City-caused time savings (i.e., Critical Path submittals returned in less time than allowed by the Contract, approval of substitution requests and credit changes which result in savings of time to Contractor, etc.) In such an event, Contractor will not be entitled to receive a time extension or delay damages until all City-caused time savings are exceeded and the Contract Time is also exceeded.

6.2.12 Rain-Related Delays. Contractor is required, in preparing the Project Schedule to take into account all relevant weather conditions, including normal rainfall and distribution. No additional compensation will be given for any rain-related delays or impacts on the Work or the Project Schedule. No time extension will be granted in the Project Schedule unless the rainfall during the construction of Work is unusually severe, was not reasonably anticipated, and the total rainfall was significantly in excess of the normal rainfall for the Project Site location. Normal rainfall for the Project will be determined from the 10-year average rainfall for the Site as measured by the National Oceanic and Atmospheric Administration or comparable source of reliable information for rainfall in Chandler, Arizona. In addition, the excessive rainfall must have actually impacted Work activities on the Critical Path and caused delay beyond any remaining Float at the time of the rain- caused delay. The burden of documenting normal rainfall, the excessive rainfall and the impact on Critical Path activities is on Contractor. All other provisions in the Contract Documents relating to claims, including without limitation notice requirements, apply to any claim by Contractor for a rain delay.

6.2.13 City's "Policy Statement for Calculating Delays and Damages," Appendix 1 to these General Conditions, will apply to all claims of delay and delay damages.

6.2.14 Force Majeure. If Contractor is delayed or prevented from the performance of any Work required under this Contract by reason of acts of God or other causes beyond the control and without fault of Contractor (financial inability excepted), performance of that Work will be excused, but only for the period of the delay. The time for performance of the Work will be extended for a period equivalent to the period of delay.

6.3 SUBSTANTIAL COMPLETION

6.3.1 When Contractor considers that the Work, phase or a portion thereof, which City agrees in writing to accept separately, is substantially complete, City will prepare and submit to Contractor a comprehensive Punch List of items to be completed or corrected prior to Final Acceptance and Final Payment. Failure to include an item on such Punch List does not alter the responsibility of Contractor to complete all Work in accordance with the Contract Documents.

6.3.2 Upon receipt of Contractor's Punch List, Project Manager will make an inspection to determine whether the Work or designated portion thereof is substantially complete. Project Manager may, at Project Manager's sole option, be assisted in such inspection by

the Design Professional for the Project. If the inspection by the Project Manager discloses any item, whether or not included on Contractor's Punch List, which is not sufficiently completed in accordance with the Contract Documents so that City can occupy or utilize the Work, phase or designated portion thereof for its intended use, Contractor must, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by Project Manager. In such case, Contractor must then submit a request for another inspection by Project Manager to determine Substantial Completion.

6.3.3 Certificate of Substantial Completion.

6.3.3.1 The Project Manager will not issue a Certificate of Substantial Completion unless and until the Work (or separable units or Phases as provided in the Contract Documents) is essentially and satisfactorily complete in accordance with the Contract Documents, such that the Project is ready for use by City for its intended purpose, opening to the general public, full occupancy or use by City (including, without limitation, all separate units, or rooms, facilities, access, income-generating areas, and all areas serving the general public, as applicable, must be ready for full-operation without material inconvenience or discomfort), including, to the extent applicable to the Work, the following: all materials, equipment, systems, controls, features, facilities, accessories and similar elements are installed in the proper manner and in operating condition, inspected and approved; surfaces have been painted; masonry and concrete cleaned with any sealer or other finish applied; utilities and systems connected and functioning; site work complete; permanent heating, ventilation, air condition, vertical transportation and other systems properly operating with proper controls; lighting and electrical systems installed, operable and controlled; paving completed, signage installed, and other Work as applicable, has been performed to a similar state of essential and satisfactory completion. A minor amount of Work, as determined by and at the discretion of the Project Manager, such as installation of minor accessories or items, a minor amount of painting, minor replacement of defective work, minor adjustment of controls or sound systems, or completion or correction of minor exterior work that cannot be completed as a result of weather conditions, will not delay determination of Substantial Completion. If prior written approval is obtained from City for purposes of Substantial Completion, specified areas of the entire Work or Project may be individually certified as Substantially Complete. In no event will Substantial Completion be deemed to have occurred unless and until: (i) a temporary certificate of occupancy has been issued by the appropriate Governmental Authorities (as applicable) and (ii) all terms and Work required under this Agreement have been fulfilled by Contractor and same will have also been approved and accepted by City, subject only to the Punch List items.

6.3.3.2 If requested by City, Contractor must complete and turn-over to City the Project on a phased basis. Each phase will have a separate inspection by the Project Manager, a Punch List generated, and then an inspection by City with final approval and acceptance only after the Project Manager's Punch List.

6.4 **PARTIAL UTILIZATION**

6.4.1 City at City's option may use and occupy any substantially completed parts of the Work which has specifically been identified in the Contract Documents, or which City, the Design Professional and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by City for its intended purpose, without significant interference with Contractor's performance of the remainder of the Work, provided, however, if the

portion of the Work to be used or occupied has not been found to be substantially complete, City must do so in accordance with Section 6.3 prior to such occupancy.

6.4.2 In lieu of the issuance of a Certificate of Substantial Completion as to part of the Work, City may take over operation of a facility constituting part of the Work whether or not it is substantially complete if such facility is functionally and separately usable; provided that prior to any such takeover, City and Contractor agree in writing as to the division of responsibilities between City and Contractor for security, operation, safety, maintenance, correction period, heat, utilities and insurance with respect to such facility.

6.4.3 Substantial Completion of or City's beneficial occupancy of a part of the Project will not alter the fact that the one-year warranty for the whole Project starts at the date of Final Completion of the whole Project.

6.5 **FINAL ACCEPTANCE**

6.5.1 Unless otherwise expressly agreed to in writing by City, Final Acceptance must be obtained by no later than 30 Days (60 Days for federally funded contracts) after the date of Substantial Completion. Failure to timely obtain Final Acceptance will be a material breach of the Contract.

6.5.2 Upon receipt of written notice that the Work is ready for final inspection and acceptance, City and Contractor will jointly inspect to verify that the remaining items of Work have been completed. There will be no partial acceptance. Final Acceptance will not occur until all items of Work, including Punch List Items, have been completed to City's satisfaction as reflected in the written Final Acceptance.

6.5.3 Final Payment will not be due, owing, or paid by City until Final Acceptance is issued.

6.5.4 Landscape Establishment Period. Unless otherwise expressly agreed to in writing by City, the Landscape Establishment Period will begin on the date of Final Acceptance of the Project and will run 90 Calendar Days thereafter. Landscape Establishment Period requirements are detailed in General Conditions Appendices, attached herein.

6.6 **CONTINUATION OF WORK**

6.6.1 Permitting Contractor to continue and finish the Work or any part of it after the time fixed for its completion (whether milestone, phase, Substantial Completion or Final Acceptance) or after the date to which the time fixed for any completion may have been extended, does not operate as a waiver by City of any rights under the Contract Documents, law or equity.

6.6.2 Furthermore, the timely completion of the Work being of the utmost importance under this Contract, notwithstanding the existence of one or more disputes between the parties concerning the scope of the Work, the Project Schedule, Contract Time, payments or any other matter, and further notwithstanding a party's invocation of the Dispute Resolution provisions specified in Appendix 6 of these General Conditions, unless City suspends the Contract or Contractor's performance pursuant to Section 10 of these General Conditions, Contractor will continue to prosecute the Work, including any Change Order work or Extra Work Orders, in a diligent and timely manner and not stop, slow down or impede by action or inaction the progress of the Work, including commencing performance of and thereafter completing any additional work called out in any Change Order or Extra Work Order issued by Project Manager with the approval of City, so long as City makes

payment to Contractor in accordance with Section 8 of these General Conditions.

SECTION 7 - CONTRACT PRICE

7.1 UNIT PRICE CONTRACTS

7.1.1 The Contract Price for all Unit Price Contracts will be the amount set forth in the Contract or Change Order multiplied by the verified quantity provided.

7.1.2 Measurements of quantities to determine the total Contract Price must be in accordance with MAG Specification §§ 109.1 and 109.2.

7.1.3 The Unit Price may only be changed as set forth in Section 9 below.

7.2 CHANGE ORDERS

7.2.1 Unit Price Change Orders. The Change Order Price for all Unit Price Change Orders will be the amount set forth in the Change Order multiplied by the verified quantity provided.

7.2.2 Measurements of quantities to determine the total Change Order Price must be in accordance with MAG Specifications §§ 109.1 and 109.2.

7.2.3 The Unit Price may only be changed as set forth in Section 9 below.

7.2.4 MAG Specification § 109.4.1 is modified as follows: Before § 109.4.1, the following is added: Any deduction or increase in the Contract Price must be supported by a signed, written Change Order fully executed by City, and supported by such backup as the Project Manager may require. No adjustments in any Unit Prices will be allowed. Sections 109.4.1(A) and (B) and 109.4.2(A) are deleted in their entirety.

7.3 SALES TAX

Contractor is required to pay all applicable sales tax in accordance with the law of the state of Arizona and this cost must be included in all Contract Prices. When equipment, materials or supplies generally taxable to Contractor are eligible for a tax exemption due to the nature of the Project, Contractor must assist City in applying for and obtaining such tax credits and exemptions which will be paid or credited to City.

SECTION 8 - PAYMENT

8.1 PAYMENT FOR CONSTRUCTION SERVICES

8.1.1 Payment for the Work will be made in accordance with MAG Standard Specification § 109 as amended below.

8.1.2 Contractor must submit to City for review a completed Contractor Payment Request signed by Contractor, covering the Work completed as of the date of the Request and accompanied by such supporting documentation as is required by the Contract Documents and also as City may reasonably require. A Contractor Payment Request will not be considered complete unless it is accompanied by an updated Project Schedule and a certification that the on-site, red lined, as built Drawings are up to date. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably, securely stored at the Site or at another location (such as a bonded warehouse) agreed to in writing, the Contractor Payment Request must also be accompanied by such data,

satisfactory to City, as will establish City's title to the material and equipment and protect City's interest therein, including applicable insurance. Each subsequent Contractor Payment Request must include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied to discharge in full all of Contractor's obligations reflected in prior Contractor Payment Requests.

8.1.3 The Contracting Agency will retain 10 percent of all estimates as a guarantee for complete performance of the Contract in accordance with Arizona Revised Statutes Section 34-221 or 34-607, unless the Contractor elects to deposit securities in accordance with Arizona Revised Statutes Section 34-221, Paragraph C.5. or 34-607, Paragraph B.5.

8.1.4 The payment process functions as follows: Prior to the payment cycle date, Contractor must send a draft Contractor Payment Request to Project Manager. The Project Team will review the Request and agree upon any necessary adjustments. Contractor must certify the final Request by signing and returning to Project Manager.

8.1.5 When construction of the Project is fifty percent (50%) completed, Contractor may request payment of one-half of the retention pursuant to A.R.S. § 34-609(B)(3), subject to all of City's rights to withhold or offset payments, and other rights of City, under the Contract.

8.1.6 City reserves the right under A.R.S. § 34-609(B)(3) to reinstate the ten percent (10%) retention if City determines that satisfactory progress is not being made.

8.1.7 Contractor's Warranty of Title.

8.1.7.1 Contractor warrants and guarantees that title to all Work, materials and equipment covered by any Contractor Payment Request, whether incorporated in the Project or not, will pass to City at the time of payment, free and clear of all liens, claims, security interests, and encumbrances, provided that this will not preclude the Contractor from installing metering devices or other equipment of utility companies or municipalities, the title of which is commonly retained by the utility company or municipality.

8.1.7.2 No materials, supplies, or equipment for the Work under this Contract will be purchased subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest therein, or any part thereof, is retained by the seller or supplier.

8.1.7.3 Nothing contained in this Section will defeat or impair the right of such persons furnishing materials or labor under any bond given by the Contractor for their protection, or any right under any law permitting such persons to look to funds due the Contractor in the hands of the City. The provisions of this Section must be inserted in all subcontracts and material contracts, and notices of its provision must be given to all persons furnishing materials for the Work when no formal contract is entered into for such materials.

8.2 **PAYMENT UPON SUBSTANTIAL COMPLETION**

8.2.1 No payment will be made upon Substantial Completion, except for a regularly-scheduled monthly progress payment, as allowed by Section 8.2.2.

8.2.2 No further payments will be made to Contractor until Final Acceptance.

8.3 **FINAL PAYMENT**

8.3.1 Subject to all of City's rights to withhold or offset payment, and other rights under the

Contract, Final Payment including remaining retainage will be paid only after:

a. Work has been fully completed (including completion of all incorrect or incomplete work items) and the written Final Acceptance has been issued by City;

b. Necessary operating manuals, any excess materials and supplies necessary for matching materials and supplies incorporated into the Work, acceptable sewer video results (if applicable), and complete "as-built" Drawings (including the Building Information Model, if required by the Contract Documents) have been delivered to City, as specified in this Section 8.4;

c. Full and unconditional lien waivers and releases by Contractor and any person performing labor or supplying material, machinery, fixtures, or tools for the Work have been delivered to Contractor;

d. All conditions and requirements imposed by City or any financing entity for the corresponding disbursement have been met; and

e. Contractor delivers to City a Contractor Payment Request requesting Final Payment.

8.3.2 Contractor must also submit a signed copy of Contractor's Affidavit Regarding Settlement of Claims, Appendix 3 to these General Conditions, and Certificate of Completion, Appendix 7 to these General Conditions, prior to Final Payment.

8.3.3 In addition, if required under the Project Specific Special Provisions, Contractor must compile a complete equipment list and maintenance manual to be submitted to City as a precondition to Final Payment. The list must include the following items for all equipment supplied under the Plumbing, Electrical, Air Conditioning, Elevator, and other Special Equipment Specifications:

a. Name, Model and Manufacturer.

b. Complete parts lists and Drawings.

c. Local source of supply for replacement parts along with suppliers' telephone numbers.

d. Local service organizations serving the equipment and their telephone numbers.

e. All tags, inspection slips, instruction packages, etc., removed from equipment must be properly identified as to pieces of equipment from which they were taken.

8.3.4 Contractor must also deliver to City, prior to Final Payment, one (1) digital (in the format specified by City), and if requested by City, one (1) hard copy, of any applicable Maintenance manuals. Each manual must include all manufacturer's operation and maintenance instructions and "as-built" Drawings with the list herein specified. It must also include all other diagrams and instructions necessary to properly operate and maintain the equipment, the name, address and telephone number of Contractor and all Subcontractors involved.

8.4 **CITY'S RIGHT TO WITHHOLD PAYMENT**

City may withhold payment to such extent as may be necessary in City's opinion to protect City from loss for which Contractor is responsible, including, without limitation, if any of the following conditions exist:

a. Defective Work not remedied;

b. Third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to City is provided by Contractor;

c. Failure of Contractor to make payments properly to Subcontractors or for labor, materials or equipment;

d. Reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Price;

e. Damage to City or another Contractor;

f. Reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;

g. Failure to carry out the Work in accordance with the Contract Documents; or

h. Contractor is in default of any of its other obligations under the Contract Documents.

8.5 **JOINT/DIRECT CHECKS**

To promote the timely completion and progress of the Work or when appropriate and necessary, payments to Contractor may be made jointly to Contractor and its employees, agents, Subcontractors and suppliers, or any of them. .

8.6 **PAYMENT NOT A WAIVER**

No payment (nor use or occupancy of the Project by City) will be deemed acceptance or approval of the Work or as a waiver of any claims, rights, or remedies of City.

8.7 **LIENS AND BOND CLAIMS**

Contractor must make all payments, in the time required, of all labor and materials furnished to Contractor in the course of the Work and must promptly furnish evidence of such payments as City may require. Contractor must pay when due all claims arising out of performance of the Work covered by this Contract for which a lien may be filed either against the real estate or leasehold interest of City, or against payments due from City to Contractor, or for which a claim may be made against any payment or performance bond or both. To the fullest extent permitted by law, Contractor agrees that no liens or other claims in the nature of a lien against the real estate, leasehold, or other interest of City, against payment due from City to Contractor, or against any payment or performance bond, must be filed or made in connection with the Work by any party who has supplied professional services, labor, materials, machinery, fixtures, tools, or equipment used in or in connection with the performance of this Contract, and Contractor agrees to remove or to cause to be removed any such liens or claims in the nature of a lien or bond claim within 10 Days upon receiving notice or obtaining actual knowledge of the existence of such liens or claim. In addition, Contractor agrees to defend, indemnify, and hold harmless City from and against any and all such liens and claims. This paragraph does not apply to claims and liens of Contractor due to non-payment for work performed.

8.8 **FINANCIAL RECORDKEEPING AND CITY'S AUDIT RIGHT**

8.8.1 Records for all Contracts between City and Contractor must, upon reasonable notice, be open to inspection and subject to audit, scanning, and reproduction during normal business working hours. Such audits may be performed by any City's representative or any outside representative engaged by City for the purpose of examining such records. City or its designee may conduct such audits or inspections throughout the term of this Contract and for a period of five years after Final Payment or longer if required by law. City's representatives may (without limitation) conduct verifications such as counting employees at the Site, witnessing the distribution of payroll, verifying information and amounts through interviews and written confirmations with Contractor employees, field and agency labor, Subcontractors, and vendors.

8.8.2 Contractor's "records" must include any and all information, materials and data of every kind and character, including without limitation, records, books, papers, documents, subscriptions, recordings, agreements, purchase orders, leases, contracts, commitments, arrangements, notes daily diaries, superintendent reports, drawings, receipts, vouchers and memoranda, and any and all other agreements, sources of information and matters that may in City's judgment have any bearing on or pertain to any matters, rights, duties or obligations under or covered by any Contract Document. Such records must include (hard copy, as well as computer readable data if it can be made available), written policies and procedures; time sheets; payroll registers; payroll records; cancelled payroll checks; subcontract files (including proposals of successful and unsuccessful bidders, bid recaps, negotiation notes, etc.); original bid estimates; estimating work sheets; correspondence; Change Order files (including documentation covering negotiated settlements); back-charge logs and supporting documentation; invoices and related payment documentation; general ledger, information detailing cash and trade discounts earned, insurance rebates and dividends; and any other Contractor records which may have a bearing on matters of interest to City or the Project in connection with Contractor's dealings with City or the Project (all foregoing hereinafter referred to as "records") to the extent necessary to adequately permit evaluation and verification of any or all of the following:

a. Compliance with Contract requirements for deliverables;

b. Compliance with approved Plans and Specifications;

c. Compliance with § 14.9 below;

d. Compliance with Contract provisions regarding the pricing of Change Orders;

e. Accuracy of Contractor representations regarding the pricing of invoices; or

f. Accuracy of Contractor representations related to claims submitted by Contractor or any of their employees.

8.8.3 Contractor must require all payees (examples of payees include Subcontractors, Suppliers, Insurance Carriers, etc.) to comply with the provisions of this Section by including the requirements hereof in a written Contract Agreement between Contractor and payee. Contractor will ensure that all payees (including those entering into lump sum contracts) have the same right to audit provisions contained in this contract included in their contracts with Contractor.

8.8.4 City's authorized representative(s) (including, without limitation, Project Manager) must have reasonable access to Contractor's facilities, must be allowed to interview all current or former employees to discuss matters pertinent to the performance of this contract and must be provided adequate and appropriate work space, in order to conduct audits in compliance

with this Section.

8.8.5 If an audit inspection or examination in accordance with this Section, discloses overpricing or overcharges to City (of any nature) by Contractor or Contractor's Subcontractors in excess of $100,000 in addition to making adjustments for the overcharges, the reasonable actual cost of City's audit must be reimbursed to City by Contractor. Any adjustments or payments which must be made as a result of any such audit or inspection of Contractor's invoices or records must be made within a reasonable amount of time (not to exceed 90 Days) from presentation of City's findings to Contractor.

8.8.6 In addition to the normal paperwork documentation Contractor typically furnishes to City, Contractor agrees to furnish, upon written request from City, any of the documentation necessary for City to exercise its audit rights under this Section 8.8 in computer readable file formats (Word, Excel, or .pdf), as City may designate.

8.8.7 City, its authorized representative, and the appropriate agency, reserve the right to audit Contractor's records in compliance with local, state or federal policies, statutes or at City's discretion, within three (3) years of Final Acceptance of the Work.

SECTION 9 - CHANGES TO THE CONTRACT

9.1 **FIELD ORDERS**

City may authorize minor changes in the Work not involving an adjustment in the Contract Price or the Contract Times, which are consistent with the overall intent of the Contract Documents. These may be accomplished by a written Field Order on the standard form approved and executed by City. Such Field Orders must be binding and Contractor must perform the change promptly. If Contractor believes that a Field Order justifies an increase in the Contract Price or Contract Time, Contractor may make a claim therefor as provided in Section 7.2.

9.2 **EXTRA WORK/CHANGES IN THE WORK**

9.2.1 City reserves the right to make such changes in the Plans and Specifications for the Work, as it may deem appropriate and any such change as set forth in a written Change Order must be deemed a part of this Contract as if originally incorporated herein.

9.2.2 In the event City and Contractor cannot agree on the terms of a Change Order, or when circumstances otherwise require, the Project Manager has the authority to direct the Contractor to perform extra work, if the work in question is an item not provided for in the Contract as awarded. The Project Manager will have the authority to determine, based upon factual evidence presented by the Contractor, whether the work in question is an item not provided for in the Contract as awarded. If the Project Manager directs the Contractor to perform extra work, the Project Manager's instructions will include a price that the Contractor cannot exceed in charging the City for the extra work. Upon receipt of the Project Manager's directions to perform extra work, the Contractor must promptly proceed with the extra work and document the actual cost thereof. Contractor's right to payment for extra work will be determined under Subsection 9.2.4 below. The Contractor is responsible to manage the extra work to ensure that the price limits set by the Project Manager are not exceeded. Contractor must perform the extra work and submit documentation for the actual cost of the extra work to the City. A Change Order will be issued to cover this work.

9.2.3 Contractor will not be entitled to payment for extra work unless a written Change Order, in form and content prescribed by City, has been executed by City. On all requests for Change Orders, Contractor must specify the increased or decreased costs and whether it believes any extensions of time will be necessary to complete its Work as modified by the Change Order. If extra work is performed under Subsection 9.2.2 above, a corresponding Change Order will be prepared, approved and processed by City before payment can be made to Contractor.

9.2.4 In general, pricing for Change Orders will include the same mark-up percentages that were in effect when the Contract was awarded. The cost or credit to the City resulting from a change in the Work is subject to Appendix 1 (Policy Statement for Calculating Delays and Damages) and will be determined, based on the type of pricing for the Contract involved, as follows:

a. By mutual acceptance of a lump sum properly itemized in a form acceptable to City;

b. By unit prices stated in the Contract Documents;

c. When the City determines that a Unit Price Book Job Order associated with a Job Order Contract requires a Change Order, by using the same Total Cost Data and CCI that are in effect when the Change Order is anticipated to be issued; or

d. By actual cost and a percentage fee covering overhead and profit, as follows:

(i) Contractor will perform the extra work and be compensated for actual cost of labor, materials and equipment.

(ii) Contractor will have the right to add the fee percentage applicable to the Work under the Contract, or if no such fee has been agreed to by the parties, not more than five percent (5%) to the Subcontractor's prices for authorized extra work performed solely by Subcontractors. Such percentage will include all of Contractor's charges for overhead, profit, administration and supervision.

(iii) Contractor or Subcontractor will have the right to add the fee percentage applicable to Work under the Contract for self-performed extra work, or if no such fee has been agreed to by the parties, Contractor's or Subcontractor's maximum total allowable additions for overhead, profit, administration and supervision will not exceed ten percent (10%) of actual verifiable labor, materials and equipment for such self- performed extra work.

9.2.5 Any agreement which modifies the terms of the Contract (including Change Orders) will be approved in writing by the Project Manager. Once properly executed by both parties, these modifications to the Contract will have the same effect as if they had been included in the original Contract.

9.3 ACCURACY OF CHANGE ORDER PRICING INFORMATION

9.3.1 Subject to Sections 9.3.2 through 9.3.4, signature by the contracting parties constitutes full accord and satisfaction between City and Contractor for all costs, damages, and expenses of whatever kind of nature, including delay, impact or acceleration damages, which may be occasioned by a Change Order of other modification of the Contract agreed to in writing.

9.3.2 Accurate Change Order Pricing Information: Contractor agrees that it is responsible for submitting accurate cost and pricing data to City to support its Fixed Price, Unit Price, or Cost Plus Change Order Proposals or other Contract Price adjustments under the Contract. Contractor further agrees to submit Change Order proposals with cost and pricing data which is accurate, complete, current, and in accordance with the terms of the Contract with respect to pricing of change orders. Contractor agrees that any "buy-out savings" on Change Orders will accrue 100% to Owner. "Buy-out savings" are defined as any savings negotiated by the Contractor with a Subcontractor or a Material Supplier after receiving approval of a Change Order amount that was designated to be paid to a specific Subcontractor or Supplier for the Approved Change Order work.

9.3.3 Right to Verify Change Order Pricing Information: Contractor agrees that City, through its designated representative, will have the right to examine, copy, and scan the records of the Contractor, Subcontractor or Sub-Subcontractor's records (during the Contract period and up to three years after final payment is made on the Contract) to verify the accuracy and appropriateness of the pricing data used to price all Change Order proposals or claims. Contractor agrees that if City determines the cost and pricing data submitted (whether approved or not) was inaccurate, incomplete, not current, or not in compliance with the terms of the Contract regarding pricing of Change Orders, an appropriate Contract Price adjustment will be made. Such post-approval Contact Price adjustments will apply to all levels of contractors and Subcontractors and to all types of Change Order proposals, specifically including Fixed Price, Unit Price, and Cost Plus Change Orders.

9.3.4 Requirements for Detailed Change Order Pricing Information: Contractor agrees to provide a detailed breakdown of allowable labor and labor burden cost (i.e., base wage rate of applicable classifications of workers, payroll taxes, and insurance and benefits costs). This information will be used to evaluate the potential cost of labor and labor burden related to Change Order work. It is intended that this information represent an accurate estimate of the Contractor's actual labor and labor burden cost components. Information is not intended to establish fixed billing or Change Order pricing labor rates. However, at the time Change Orders are priced, the submitted cost data for labor rates may be used to price Change Order work. The accuracy of any such agreed upon labor rate cost components used to price Change Orders will be subject to later audit. Approved Change Order amounts may be adjusted later to correct the impact of inaccurate labor cost components if the agreed upon labor cost components are determined to be inaccurate.

9.4 **EMERGENCIES**

In any emergency affecting the safety of persons or property, Contractor will act, at its discretion, to prevent threatened damage, injury or loss. Any change in the Contract Price or Contract Time resulting from emergency work will be determined as provided in this Section.

9.5 **DIFFERING SITE CONDITIONS**

9.5.1 If Differing Site Conditions are encountered at the Project Site, then notice by the observing party must be given to the other party promptly before conditions are disturbed (to the extent practicable) and in no event later than 14 Days after first observance of the conditions. City will promptly investigate such conditions and, if City determines that Differing Site Conditions exist and they materially cause an increase in the cost of, or time required for, performance of any part of the Work, Contractor will be entitled to equitable adjustment in the Contract Price or Construction Schedule (and other time requirements), or both. If it

is determined by City that the conditions at the Project Site are not Differing Site Conditions and no change is justified, then City will so notify Contractor in writing, stating the reasons. Claims in opposition to such determination must be made within 14 Days after City has given notice of its decision. If City and Contractor cannot agree on an adjustment in the Contract Price or Construction Schedule (and other time requirements), the adjustment may be submitted to dispute resolution as provided these General Conditions.

9.6 **CHANGES IN LAWS, REGULATIONS, OR LEGAL REQUIREMENTS OR TAXES**

In the event of a material change in applicable Laws, Regulations, or Legal Requirements, or taxes subsequent to the date of the Contract by the parties, Contractor may be entitled to a Change Order, in City's discretion, to the extent Contractor can document to the satisfaction of City that such change significantly increases Contractor's actual cost of performance of the Work.

SECTION 10 -SUSPENSION AND TERMINATION

10.1 **SUSPENSION**

City may suspend the Contract and Contractor's performance in accordance with MAG Specifications § 105.1 and 108.7.

10.2 **TERMINATION BY THE CITY FOR CAUSE**

10.2.1 MAG Specifications § 108.11 applies to the Contract.

10.2.2 City may also terminate the Contract if City determines, in its sole discretion that Contractor has:

a. After prior written notice, refused or failed to supply enough properly skilled workers or proper materials;

b. After prior written notice, failed to make payment to Subcontractors for materials or labor in accordance with the respective agreements between Contractor and the Subcontractors;

c. After prior written notice, disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction;

d. After prior written notice, repeatedly failed to comply with written directives from City;

e. Is adjudged as bankrupt or insolvent;

f. Made a general assignment for the benefit of creditors;

g. Appointed a trustee or receiver for itself or any of its property;

h. Filed a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or similar laws; or

i. Otherwise breached a provision of the Contract Documents or any other contract between City and Contractor.

10.2.3 When any of the above reasons exist, City may terminate the Contract, without prejudice to any other rights or remedies of City, after giving Contractor and Contractors' surety, if any, 7 Days written notice of City's intent to terminate the Contract and Contractor's failure to cure any such reasons. Upon such termination, City may: (1) take possession of the Site and of all materials thereon owned by Contractor; or (2) finish the Work by whatever

reasonable method City may deem expedient. When City terminates the Contract for one of the reasons state above, Contractor will not be entitled to receive further payment until the Work is finished. If the unpaid balance of the Contract Price existing at the time of such termination exceeds the costs and expenses of finishing the Work and any other damages incurred by City, such excess will be paid to Contractor. If such costs, expenses and damages exceed such unpaid balance, Contractor must pay the difference to City. This obligation for payment will survive termination of the Contract.

10.3 **TERMINATION BY CITY FOR CONVENIENCE**

City may also terminate the Contract at any time for its convenience upon 7 Days written notice to Contractor specifying the termination date. In the event of termination which is not the fault, in whole or in part, of Contractor, City will pay to Contractor only such compensation, including reimbursable expenses, due for Work properly performed on the Project prior to the termination date. Upon any termination of the Contract, no further payments will be due from City to Contractor.

10.4 **A.R.S. § 38-511**

The Contract is subject to, and may be terminated by City in accordance with, the provisions of A.R.S. § 38-511.

SECTION 11 -INSURANCE AND BONDS

11.1 **INSURANCE REQUIREMENTS**

11.1.1 After Contract award, the Contractor must furnish the City a certificate of insurance on a standard insurance industry ACORD form. The ACORD form must be issued by an insurance company authorized to transact business in the State of Arizona possessing a current A.M. Best, Inc. rating of A-7, or better and legally authorized to do business in the State of Arizona with policies and forms satisfactory to City. Provided, however, the A.M. Best rating requirement may not be deemed to apply to required Worker's Compensation coverage.

11.1.2 The Contractor and any of its Subcontractors must procure and maintain, until all of their obligations have been discharged, including any warranty periods under this Contract are satisfied, the insurances set forth below.

11.1.3 The insurance requirements set forth below are minimum requirements for this Contract and in no way limit the indemnity covenants contained in this Contract.

11.1.4 The City in no way warrants that the minimum insurance limits contained in this Contract are sufficient to protect Contractor from liabilities that might arise out of the performance of the Contract services under this Contract by Contractor, its agents, representatives, employees, or Subcontractors and the Contractor is free to purchase any additional insurance as may be determined necessary.

11.1.5 Failure to demand evidence of full compliance with the insurance requirements in this Contract or failure to identify any insurance deficiency will not relieve the Contractor from, nor will it be considered a waiver of its obligation to maintain the required insurance at all times during the performance of this Contract.

11.1.6 Use of Subcontractors: If any Work is subcontracted in any way, the Contractor must execute a written agreement with Subcontractor containing the same Indemnification Clause and Insurance Requirements as the City requires of the Contractor in this Contract.

The Contractor is responsible for executing the Contract with the Subcontractor and obtaining Certificates of Insurance and verifying the insurance requirements.

11.2 **MINIMUM SCOPE AND LIMITS OF INSURANCE**

11.2.1 The Contractor must provide coverage with limits of liability not less than those stated below.

11.2.1.1 Commercial General Liability-Occurrence Form. Contractor must maintain "occurrence" form Commercial General Liability insurance with a limit of not less than $2,000,000 for each occurrence, $4,000,000 aggregate. Said insurance must also include coverage for products and completed operations, independent contractors, personal injury and advertising injury. If any Excess insurance is utilized to fulfill the requirements of this paragraph, the Excess insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

11.2.1.2 Automobile Liability-Any Automobile or Owned, Hired and Non-Owned Vehicles. Contractor must maintain Business/Automobile Liability insurance with a limit of $1,000,000 each accident on Contractor owned, hired, and non-owned vehicles assigned to or used in the performance under this Contract. If any Excess or Umbrella insurance is utilized to fulfill the requirements of this paragraph, the Excess or Umbrella insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

11.2.1.3 Workers Compensation and Employers Liability Insurance. Contractor must maintain Workers Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Contractor employees engaged in the performance of Work under this Contract and must also maintain Employers' Liability insurance of not less than $1,000,000 for each accident and $1,000,000 disease for each employee.

11.2.1.4 Builders' Risk/Installation Floater Insurance. The Contractor bears all responsibility for loss to all equipment or Work under construction. Unless waived in writing by the City the Contractor will purchase and maintain in force Builders' Risk/Installation Floater insurance on the entire Work until completed and accepted by the City. This insurance will be Special Causes of Loss policy form, (minimally including perils of fire, flood, lightning, explosion, windstorm and hail, smoke, aircraft and vehicles, riot and civil commotion, theft, vandalism, malicious mischief, and collapse), completed value, replacement cost policy form equal to the contract price and all subsequent modifications. The Contractor's Builders' Risk/Installation Floater insurance must be primary and not contributory.

a. Builders' Risk/Installation Floater insurance must cover the entire Work including reasonable compensation for architects and engineers' services and expenses and other "soft costs" made necessary by an insured loss. Builders' Risk/Installation Floater insurance must provide coverage from the time any covered property comes under the Contractor's control and or responsibility, and continue without interruption during course of construction, renovation and or installation, including any time during which any Project property or equipment is in transit, off Site, or while on Site for future use or installation. Insured property must include, but not be limited to, scaffolding, false work, and temporary buildings at the Site. This insurance must also cover the cost of removing debris, including demolition as may be legally required by operation of any law, ordinance, regulation or code.

b. The Contractor must also purchase and maintain Boiler and Machinery insurance with the same requirements as Builders' Risk/Installation Floater insurance cited above if the Work to be performed involves any exposures or insurable property normally covered under a Boiler and Machinery insurance policy or made necessary as required by law or testing requirements in the performance of this Contract/Agreement. The Contractor will be responsible for any and all deductibles under these policies and the Contractor waives all rights of recovery and subrogation against the City under the Contractor- Builders' Risk/Installation Floater insurance described herein.

c. Builders' Risk/Installation Floater Insurance must be maintained until whichever of the following first occurs: (i) final payment has been made; or, (ii) until no person or entity, other than the City, has an insurable interest in the property required to be covered.

d. The Builders' Risk/Installation Floater insurance must be endorsed so that the insurance will not be canceled or lapse because of any partial use or occupancy by the City.

e. The Builders Risk/Installation Floater insurance must include as named insureds, the City, the Contractor, and all tiers of Subcontractors and others with an insurable interest in the Work who will be named as additional insureds unless they are able to provide the same level of coverage with the City and Contractor named as additional insureds. Certificates must contain a provision that the insurance will not be canceled or materially altered without at least 30 Days advance notice to the City. The City must also be named as a Loss Payee under the Builders' Risk/Installation Floater coverage.

f. The Builders Risk/Installation Floater insurance must be written using the Special Causes of Loss policy form, replacement cost basis.

g. All rights of subrogation under the Builders Risk/Installation Floater insurance are, by this Contract/Agreement, waived against the City, its officers, officials, agents and employees.

h. The Contractor is responsible for payment of all deductibles under the Builders' Risk/Installation Floater insurance policy.

11.2.1.5 Pollution Liability Insurance (Including Errors and Omissions). For Job Orders, Pollution Liability Insurance is only required if applicable and determined on a project specific basis. Contractor must maintain Pollution Liability Insurance with a limit of not less than $5,000,000 per loss, $5,000,000 aggregate for losses caused by pollution conditions including coverage for bodily injury, property damage, defense costs, clean-up costs, and completed operations that arise from the operations of Contractor as described in this Contract.

a. The policy must provide for complete professional service coverage, including coverage for pollution liability that is a result of a breach of professional duties.

b. The policy must provide for protection again claims for third-party bodily injury, property damage, or environmental damage caused for pollution conditions resulting from general contracting activities for which Contractor

is legally liable.

c. The policy must provide for cleanup costs when mandated by governmental entities, when required by law, or as a result of third-party claims.

d. Completed Operations Coverage must be kept in place for up to the statute of repose.

e. The policy must be endorsed to include the following additional insured language: "City, its elected officials, trustees, employees, agents, and volunteers must be named as additional insureds with respect to liability arising out of the activities performed by, or on behalf of Contractor".

f. If Work under this Contract requires the transportation of any hazardous material or regulated substances, Contractor must carry Auto Liability with a CA 9948 endorsement or equivalent.

g. If Work under this Contract requires the disposal of any hazardous materials from the job site, Contractor must obtain a certificate of insurance for Pollution Legal Liability from the disposal site operator with a limit of not less than $5,000,000 per loss, $5,000,000 aggregate.

11.3 **ADDITIONAL POLICY PROVISIONS REQUIRED**

11.3.1 Self-Insured Retentions or Deductibles. Any self-insured retentions and deductibles must be declared and approved by the City. If not approved, the City may require that the insurer reduce or eliminate any deductible or self-insured retentions with respect to the City, its officers, officials, agents, employees, and volunteers.

11.3.2 The Contractor's insurance must contain broad form contractual liability coverage.

11.3.3 The Contractor's insurance coverage must be primary insurance with respect to the City, its officers, officials, agents, and employees. Any insurance or self-insurance maintained by the City, its officers, officials, agents, and employees will be in excess of the coverage provided by the Contractor and must not contribute to it.

11.3.4 The Contractor's insurance must apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

11.3.5 Coverage provided by the Contractor must not be limited to the liability assumed under the indemnification provisions of this Contract.

11.3.6 The policies must contain a severability of interest clause and waiver of subrogation against the City, its officers, officials, agents, and employees, for losses arising from Work performed by the Contractor for the City.

11.3.7 The Contractor, its successors and or assigns, are required to maintain Commercial General Liability insurance as specified in this Contract for a minimum period of 3 years following completion and acceptance of the Work. The Contractor must submit a Certificate of Insurance evidencing Commercial General Liability insurance during this 3 year period containing all the Contract insurance requirements, including naming the required Additional Insureds set forth herein.

11.3.8 If a Certificate of Insurance is submitted as verification of coverage, the City will reasonably rely upon the Certificate of Insurance as evidence of coverage but this acceptance and

reliance will not waive or alter in any way the insurance requirements or obligations of this Contract.

11.3.9 Insurance Cancellation During Contract Term.

11.3.9.1 If any of the required policies expire during the life of this Contract, the Contractor must forward renewal or replacement Certificates to the City within 10 Days after the renewal date containing all the required insurance provisions.

11.3.9.2 Each insurance policy required by the insurance provisions of this Contract must provide the required coverage and must not be suspended, voided or canceled except after 30 Days prior written notice has been given to the City, except when cancellation is for non-payment of premium, then 10 Days prior notice may be given. Such notice must be sent directly to Chandler Law-Risk Management Department, Post Office Box 4008, Mailstop 628, Chandler, Arizona 85225. If any insurance company refuses to provide the require notice, the Contractor or its insurance broker must notify the City of any cancellation, suspension, non-renewal of any insurance within 7 Days of receipt of insurers' notification to that effect.

11.3.10 City as Additional Insured. The above-referenced policies are to contain, or be endorsed to contain, the following provisions:

11.3.10.1 The Commercial General Liability and Automobile Liability policies are to contain, or be endorsed to contain, the following provisions: The City, its officers, officials, agents, and employees are additional insureds with respect to liability arising out of activities performed by, or on behalf of, the Contractor including the City's general supervision of the Contractor; Products and Completed Operations of the Contractor; and automobiles owned, leased, hired, or borrowed by the Contractor.

11.3.10.2 The City, its officers, officials, agents, and employees must be additional insureds to the full limits of liability purchased by the Contractor even if those limits of liability are in excess of those required by this Contract.

11.4 **BONDS AND OTHER PERFORMANCE SECURITY**

11.4.1 After Contract award, Contractor must provide a Performance Bond and a Payment Bond, each in an amount equal to the full amount of the Contract Price.

11.4.2 Each such bond must be executed by a surety company or companies holding a Certificate of Authority to transact surety business in the State of Arizona, issued by the Director of the Arizona Department of Insurance and must be named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. A copy of the Certificate of Authority must accompany the bonds. The Certificate must have been issued or updated within two (2) years prior to the execution of this Agreement. The bonds must be written or countersigned by an authorized representative of the surety who is either a resident of the state of Arizona or whose principal office is maintained in this state, as by law required.

11.4.3 The bonds must be made payable and be acceptable to City. The bond forms for the performance and payment bonds must be in the forms required under A.R.S. § 34-221, *et. Seq.*, as in Appendices 4 and 5 of these General Conditions.

11.4.4 Upon the request of any person or entity appearing to be a potential beneficiary of bonds

covering payment of obligations arising under the Contract Documents, Contractor must promptly furnish a copy of the bonds or must permit a copy to be made.

11.4.5 All bonds submitted for this Project must be provided by a company which has been rated AM Best rating of A- or better for the prior four quarters by the latest edition of the 'Results Best's Key Rating Guide (Property/Casualty)" published by the A.M. Best Company.

11.4.6 Personal or individual bonds are not acceptable.

11.4.7 If the surety on any Bond furnished by Contractor is declared a bankrupt or becomes insolvent, or Contractor's right to do business is terminated in any state where any part of the Project is located, or it ceases to meet the requirements of this Section 11.4, Contractor must within 5 Days thereafter substitute another Bond and surety, both of which must be acceptable to City.

SECTION 12 - INDEMNIFICATION

12.1 To the extent permitted by law, the Contractor and its owners, officers, directors, agents, employees, and subconsultants (collectively "Indemnitor") must indemnify, save, and hold harmless the City and its officers, officials, agents, and employees (collectively "Indemnitee") from any and all claims, actions, liabilities, damages, losses, or expenses (including court costs, attorneys' fees, and costs of claim processing, investigation, and litigation) (collectively "Claims") caused or alleged to be caused, in whole or in part, by the negligent, reckless, wrongful, or willful acts, errors, or omissions of Indemnitor in connection with this Agreement. This indemnity includes any Claim or amount arising out of or recovered under workers' compensation laws or on account of Indemnitor's failure to conform to any federal, state, or local law, statute, ordinance, rule, regulation, or court decree. Indemnitor must indemnify Indemnitee from and against any and all Claims, except those arising solely from Indemnitee's own negligent, reckless, wrongful, or willful acts, errors, or omissions. Indemnitor is responsible for primary loss investigation, defense, and judgment costs where this indemnification applies. In consideration of the award of this Agreement, Indemnitor agrees to waive all rights of subrogation against Indemnitee for losses arising from or related to this Agreement. Indemnitor's obligations under this provision survive the termination or expiration of this Agreement.

SECTION 13 -DISPUTE RESOLUTION

13.1 All disputes arising out of or relating to the Contract, the Work or the Project, other than termination under Section 10, will be resolved pursuant to the Dispute Resolution process set forth in Appendix 6 of these General Conditions, and not pursuant to MAG Specifications § 110.

13.2 Contractor agrees that during any dispute between the parties, Contractor will continue to perform its obligations under the Contract until such dispute is resolved.

13.3 Notwithstanding any other provision in this Contract, City has the right to immediately file in court and pursue an action for a temporary restraining order and injunctive relief against Contractor if City determines that such action is necessary to protect its interests under the Contract, to obtain specific performance of any provision of the Contract, to advance the completion of the Project, or to protect health, welfare and safety.

SECTION 14 - MISCELLANEOUS PROVISIONS

14.1 CONTRACT DOCUMENTS

14.1.1 The Contract Documents are intended to permit the parties to complete the Work and all obligations required by the Contract Documents within the Contract Times for the Contract Price. The Contract Documents are intended to be complementary and interpreted in harmony so as to avoid conflict, with words and phrases interpreted in a manner consistent with construction and design industry standards.

14.1.2 It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result must be provided by Contractor whether or not specifically called for at no additional cost to City.

14.1.3 The Contract Documents establish the rights and obligations of the parties and include the Contract, Addenda (which pertain to the Contract Documents), Contractor's Bid or Proposal (including documentation accompanying the Bid and any post-Bid documentation submitted prior to Contract award) when attached as an exhibit to the Contract, the accepted Project Schedule, the Notice to Proceed, the Performance Bond, the Payment Bond, Project Design, Engineering and Specifications, these General Conditions, the Project Specific Special Provisions, Technical Specifications, Contract Drawings, as the same may be more specifically identified in the Contract, Change Orders, Work Change Directives, Field Orders and the written interpretations and clarifications of the Design Professional or City representative and Modifications issued after execution of the Contract. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents.

14.1.4 In the event of any inconsistency, conflict, or ambiguity between or among the Contract Documents, the Contract Documents will take precedence as follows from highest to lowest: Change Orders, Addenda, Contract, Project Specific Special Provisions, General Conditions, Technical Specifications, Drawings/Plans, Chandler Amendments to MAG Standard Specifications and Chandler Standard Details, and MAG Uniform Standard Specifications and Details for Public Works Construction. If applicable to this Contract, Federal Provisions prevail.

14.1.5 On the Drawings, given dimensions will take precedence over scaled measurements and large scale drawings over small-scale drawings.

14.1.6 Clarifications and interpretations of the Contract Documents will be issued by the Design Professional through the City.

14.1.7 The headings used in this Agreement or any other Contract Documents, are for ease of reference only and must not in any way be construed to limit or alter the meaning of any provision.

14.1.8 The Contract Documents form the entire agreement between City and Contractor. No oral representations or other agreements have been made by the parties except as specifically stated in the Contract Documents.

14.1.9 The Contract Documents may not be changed, altered, or amended in any way except in writing signed by a duly authorized representative of each party in the form of a Change Order.

14.1.10 Re-Use of Documents. Neither Contractor nor any Subcontractor, manufacturer, fabricator, supplier or distributor will have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of the Design Professional; and they must not re-use any of them on extensions of the Project or any other project without written consent of City and the Design Professional and specific written verification or adaptation by the Design Professional.

14.2 **REFERENCE STANDARDS**

14.2.1 Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, will mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

14.2.2 The provisions of any such standard, specification, manual or code, or any instruction of a Supplier will not change the duties or responsibilities of City, Contractor, Design Professional or Project Manager, or any of their Subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor will any such provision or instruction assign to City, Contractor, Design Professional, or any of their agents, or employees any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

14.3 **COMPLIANCE WITH ARIZONA LAW AND FEDERAL LAW**

14.3.1 Compliance with A.R.S. § 41-4401. Pursuant to the provisions of A.R.S. § 41-4401, the Contractor hereby warrants to the City that the Contractor and each of its subcontractors ("Subcontractors") must comply with all Federal Immigration laws and regulations that relate to the immigration status of their employees and the requirement to use E-Verify set forth in A.R.S. §23-214(A).

14.3.2 A breach of the Contractor Immigration Warranty constitutes a material breach of this Contract and subject to penalties up to and including termination of this Contract.

14.3.3 The City retains the legal right to inspect the papers of any Contractor or Subcontractor employee who works on this Contract to ensure that the Contractor or Subcontractor is complying with the Contractor Immigration Warranty. The Contractor agrees to assist the City in the conduct of any such inspections.

14.3.4 The City may, at its sole discretion, conduct random verifications of the employment records of the Contractor and any Subcontractors to ensure compliance with Contractors Immigration Warranty. The Contractor agrees to assist the City in performing any such random verifications.

14.3.5 The provisions of this Article must be included in any contract the Contractor enters into with any and all of its subcontractors who provide services under this Contract or any

subcontract. "Services" are defined as furnishing labor, time or effort in the State of Arizona by a contractor or subcontractor. Services include construction or maintenance of any structure, building or transportation facility or improvement to real property.

14.4 **HAZARDOUS ENVIRONMENTAL CONDITIONS**

14.4.1 Contractor will not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Document to be within the scope of the Work. Contractor will be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

14.4.2 If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition. Contractor must immediately:

a. Secure or otherwise isolate such condition;

b. Stop all Work in connection with such condition and in any area affected thereby; and

c. Notify City and promptly thereafter confirm such notice in writing.

14.4.3 City will promptly retain a qualified expert to evaluate such condition or take corrective action, if any.

14.4.4 Contractor will be responsible for any and all civil or criminal penalties, fines, damages, or other charges imposed by any regulatory agency or court for sewage discharges that are in violation of applicable statutes and laws and that are a result, direct or indirect, of work performed under this Contract. Contractor will also be responsible for reimbursement to City for administration, reporting, and tracking expenses required as a result of any spill event. In the event the regulatory agency or court imposes a probationary period, Contractor must post bond for the probationary period to ensure that all such costs are reimbursed to City. This responsibility will apply whether penalties are imposed directly on Contractor or any of its Subcontractors, or the City of Chandler. Contractor must defend and indemnify City against such penalties. Regulatory agencies may include, but are not limited to, the Arizona Department of Environmental Quality (ADEQ) and the United States Environmental Protection Agency (USEPA).

14.5 **COOPERATION AND FURTHER DOCUMENTATION**

Contractor agrees to provide City such other duly executed documents as may be reasonably requested by City to implement the intent of the Contract Documents.

14.6 **ASSIGNMENT**

Neither Contractor nor City will, without the written consent of the other assign, transfer or sublet any portion of this Agreement or part of the Work or the obligations required by the Contract Documents, any such assignment will be void, will transfer no rights to the purported assignee, and would be a material breach of the Contract.

14.7 **SUCCESSORS**

Contractor and City intend that the provisions of the Contract Documents are binding upon the parties, their employees, agents, heirs, successors and assigns.

14.8 **LAWFUL PRESENCE**

Pursuant to A.R.S. §§ 1-501 and 1-502, City is prohibited from awarding a contract to any natural person who cannot establish that such person is lawfully present in the United States. To establish lawful presence, a person must produce qualifying identification and sign a City-provided affidavit affirming the identification provided is genuine. This requirement will be imposed at the time of contract award. This requirement does not apply to business organizations such as corporations, partnerships, or limited liability companies.

14.9 **NO BOYCOTT OF ISRAEL CERTIFICATION**

By Contractor's signature on this Contract, Contractor certifies under A.R.S. § 35-393.01 that Contractor is not currently engaged in and for the duration of this Contract will not engage in a boycott of Israel.

14.10 **NO THIRD PARTY BENEFICIARY**

Nothing under the Contract Documents will be construed to give any rights or benefits in the Contract Documents to anyone other than City and Contractor, and all duties and responsibilities undertaken pursuant to the Contract Documents will be for the sole and exclusive benefit of City and Contractor and not for the benefit of any other party, unless otherwise expressly set forth in the Contract Documents.

14.11 **GOVERNING LAW AND VENUE**

The Agreement and all Contract Documents will be deemed to be made under, and will be construed in accordance with and governed by the laws of the State of Arizona without regard to the conflicts or choice of law provisions thereof. Any court action to enforce any provision of the Contract or to obtain any remedy with respect hereto must be brought in the Superior Court, Maricopa County, Arizona, and for this purpose, each party hereby expressly and irrevocably consents to the jurisdiction and venue of such Court.

14.12 **SEVERABILITY**

If any provision of the Contract Documents or the application thereof to any person or circumstance will be invalid, illegal or unenforceable to any extent, the remainder of the affected provision, the remainder of the Contract Documents, and the application thereof will not be affected and will be enforceable to the fullest extent permitted by law.

14.13 **LEGAL REQUIREMENTS**

At all times relevant to its entry into this Contract and performance of the Services and the Work, Contractor must fully comply with all Laws, Regulations, or Legal Requirements applicable to City, the Project, and the Contract, including, without limitation, those set forth on Exhibit C of the Contract.

14.14 **PARTIAL INVALIDITY**

If any provision of the Contract is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remaining provisions will nevertheless continue in full force without being impaired or invalidated in any way.

14.15 **ATTORNEYS' FEES**

Should either party to the Contract bring an action to enforce any provision of the Contract, the prevailing party will be entitled to recover reasonable attorneys' fees and costs in connection therewith.

14.16 **CONFLICT OF INTEREST**

14.16.1 Contractor agrees to disclose any financial or economic interest with the Project property, or any property affected by the Project, existing prior to the execution of the Contract. Further, Contractor agrees to disclose any financial or economic interest with the Project property, or any property affected by the Project, if Contractor gains such interest during the course of this Contract. If Contractor gains financial or economic interest in the Project during the course of this Contract, this may be grounds for terminating this Contract. Any decision to terminate the Contract must be at the sole discretion of City.

14.16.2 Contractor will not engage the services on this Contract of any present City employee who was involved as a decision maker in the selection or approval processes, or who negotiated or approved billings or Contract Modifications for this Contract.

14.16.3 Contractor agrees that it will not perform services on this Project for a contractor, subcontractor, or any supplier, not covered under this Contract.

14.17 **INDEPENDENT CONTRACTOR**

Contractor is and must be an independent contractor. Any provisions in the Contract Documents that may appear to give City the right to direct Contractor as to the details of accomplishing the Work or to exercise a measure of control over the Work means that Contractor must follow the wishes of City as the results of the Work only. These results must comply with all applicable laws and ordinances.

14.18 **NOTICE OF INJURY**

Should City or Contractor suffer injury or damage to their person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim must be made in writing to the other party within 7 Days of the first observance of such injury or damage.

14.19 **CONFIDENTIALITY**

Contractor, for the benefit of City, hereby agrees it will not release or cause or permit to be released to the public any press notices, publicity (oral or written) or advertising promotion relating to, any statement regarding, or any other public announcement or disclosure or cause or permit to be publicly announced or disclosed, in any manner whatsoever, the specific terms and conditions of this Agreement or any comment relating to the Project or the Site. Notwithstanding the foregoing, Contractor will be entitled to disclose the terms of the Agreement to the extent required by law or in the course of enforcing or defending a claim or action hereunder. Contractor must give City reasonably prompt notice of any disclosure or statement made pursuant to this provision.

14.20 **DATA CONFIDENTIALITY**

14.20.1 As used in the Contract, "data" means all information, whether written or verbal, including plans, specifications, renderings, photographs, studies, investigations, audits, analyses, samples, reports, calculations, internal memos, meeting minutes, data field notes, work product, proposals, correspondence and any other similar documents or information prepared by, obtained by, or transmitted to the City in the performance of this Contract.

14.20.2 Contractor agrees that all data, regardless of form, including originals, images, and reproductions, prepared by, obtained by, or transmitted to City in connection with the Contractor's performance of this Contract is confidential and proprietary information belonging to City.

14.20.3 Except as specifically provided in this Contract, Contractor or its Subcontractors must not divulge data to any third party without prior written consent of City. Contractor or its Subcontractors must not use data for any purposes except to perform Work required under this Contract. These prohibitions will not apply to the following data provided Contractor has first given the required notice to City:

a. Data which was known to Contractor or its Subcontractors prior to its performance under this Contract unless such data was acquired in connection with Work performed for City;

b. Data which was acquired by Contractor or its Subcontractors in its performance under this Contract and which was disclosed to Contractor or its Subcontractors by a third party, who to the best of Contractor's or its Subcontractor's knowledge and belief, had the legal right to make such disclosure and Contractor or its Subcontractors are not otherwise required to hold such data in confidence; or

c. Data which is required to be disclosed by virtue of law, regulation, or court order, to which the Contractor or its Subcontractors are subject.

14.20.4 In the event the Contractor or its Subcontractors are required or requested to disclose data to a third party, or any other information to which the Contractor or its Subcontractors became privy as a result of any other contract with City, the Contractor must first notify City as set forth in this Section of the request or demand for the data. The Contractor or its Subcontractors must give City sufficient facts so that City can be given an opportunity to first give its consent or take such action that City may deem appropriate to protect such data or other information from disclosure.

14.20.5 Unless prohibited by law, within 10 Days after completion of services for a third party on real or personal property owned or leased by City, the Contractor must promptly deliver, as set forth in this Section, a copy of all data to City. All data will continue to be subject to the confidentiality agreements of this Contract.

14.20.6 Contractor or its Subcontractors assume all liability for maintaining the confidentiality of the data in its possession and agree to compensate City if any of the provisions of this Section are violated by Contractor, its employees, agents, or Subcontractors. Solely for the purposes of seeking injunctive relief, it is agreed that a breach of this Section will be deemed to cause irreparable harm that justified injunctive relief in court. Contractor agrees that the requirements of this Section will be incorporated into all subcontracts entered into by Contractor. A violation of this Section may result in immediate termination of this Contract without notice.

14.21 **SURVIVAL**

All warranties, representations and indemnifications by Contractor must survive the completion or termination of this Agreement.

14.22 **COVENANTS AGAINST CONTINGENT FEES**

Contractor warrants that no person has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, and that no member of City Council, or any employee of City has any interest, financially, or otherwise, in the firm. For breach or violation of this warrant, City will have the right to annul the Contract without liability or at its discretion to deduct from the Contract Price or consideration, the full amount of such commission,

percentage, brokerage, or contingent fee.

14.23 **NO WAIVER**

The failure of either party to enforce any of the provisions of the Contract Documents or to require performance of the other party of any of the provisions hereof must not be construed to be a waiver of such provisions, nor will it affect the validity of the Contract Documents or any part thereof, or the right of either party to thereafter enforce each and every provision.

14.24 **NONEXCLUSIVE REMEDIES**

The remedies set forth in this Contract are cumulative and not exclusive, and failure to exercise any remedy (including, without limitation, any right to terminate) will not preclude any party from exercising any other right in seeking any other remedy available to it at law or in equity.

14.25 **PROJECT COMMUNICATIONS**

14.25.1 All communications concerning the performance of the Work or the Project will be provided to the designated Project Manager and Contractor's Representative set forth in Article 1 of the Contract. City may change the designated Project Manager and, subject to Section 4.4.20 of these General Conditions, Contractor may change Contractor Representative, by written notice to the other.

14.25.2 Project communications may be exchanged by e-mail, but email communications cannot change the terms of the Contract or the Scope of Work, or effectuate any change that requires a written Change Order.

14.25.3 When any provisions of the Contract Documents requires Contractor or the Design Professional to give written notice to City, it will be deemed to have been validly given if delivered in person or if delivered at or sent by registered or certified mail, postage prepaid, to the Parties indicated in Contract Article 1, incorporated by reference.

14.25.4 When any provisions of the Contract Documents requires City, Project Manager, or the Design Professional to give written notice to Contractor, it will be deemed to have been validly given if delivered in person to the person designated in the Contract Documents as Contractor's Resident Superintendent, or if delivered at or sent by registered or certified mail, postage prepaid, to Contractor at the last address in the Contract Documents or such substitute address which Contractor designates in writing, or to the business address known to the giver of notice.

14.26 **DRUG FREE WORKPLACE PROGRAM**

14.26.1 City has adopted a policy establishing a drug free workplace for itself and as a requirement for Contractors doing business with City, to ensure the safety and health of employees working on City projects.

14.26.2 Contractor must require a drug free workplace for all employees working under the Contract. Specifically, all employees of Contractor who are working under a Contract with City must be notified, in writing, by Contractor that they are prohibited from the manufacture, distribution, dispensation, possession or unlawful use of a controlled substance in the workplace.

14.27 Failure to require a drug free workplace in accordance with the City's policy may result in termination of the Contract and possible debarment form bidding on future City projects.

SECTION 15 - PROVISIONS APPLICABLE SOLELY TO GMP AND COST-BASED CONTRACTS, CHANGE ORDERS, AND JOB ORDERS

15.1 **ADDITIONAL DEFINITIONS**

The definitions set forth in Section 2 apply to GMP and Cost-Based Contracts, Change Orders, and Job Orders, together with the additional definitions set forth below.

Baseline Cost Model –
A breakdown and estimate of the scope of the Project developed by CM@Risk pursuant to Section 17.5 of these General Conditions.

CM@Risk or Construction Manager at Risk –
The person or firm selected by City to provide pre-construction and/or construction services as detailed in a Construction Manager at Risk Contract with City. In these General Conditions, the term "Contractor" includes CM@Risk under both Pre-Construction and Construction Services Contracts.

CM@Risk Fee or Contractor's Fee –
An agreed to percentage in an accepted GMP that represents the Contractor's fee for performance of the Work.

Contract Documents –
Where compensation under the Contract is based upon a GMP accepted by City, the term "Contract Documents" also includes the accepted GMP Proposal.

Contract Price –
Where compensation under the Contract based upon a GMP accepted by City, the term "Contract Price" refers to the GMP.

Cost-Based Contract, Change Order, or Job Order –
A Contract, Change Order, or Job Order where the Contract Price is based upon the actual cost of performing the Work, subject to the terms of the Contract Documents, including this Section 15. These would include those generally referred to as "Cost of the Work plus a Fee with a GMP," "Time and Materials," or "Cost Plus a Fee."

Cost of the Work –
The direct costs necessarily incurred by Contractor in the proper, timely, and complete performance on the Work. The Cost of the Work will include only those costs set forth in Section 15.2 of these General Conditions.

Deliverables –
The work products prepared by Contractor in performing the scope of work described in the Contract. Some of the major deliverables to be prepared and provided by Contractor during pre-construction may include but are not limited to: the Baseline Cost Model and Schedule that validate City's plan and budget, Construction Management Plan, Detailed Project Schedule, Schedule of Values, alternative system evaluations, procurement strategies and plans, Detailed Cost Estimates, construction market surveys, cash flow projections, GMP Proposals, Subcontractor procurement plan, Subcontractor agreements, Subcontractor bid packages, Supplier agreements, Constructability Review, Cost Control Log, Traffic control and phasing plans and others as indicated in this Contract or required by the Project Team.

Pre-Construction Services Contract –
The Contract entered into between City and the CM@Risk for Pre-Construction Services to be provided

by the CM@Risk, including, without limitation, the generation of a GMP Proposal. If the GMP Proposal is accepted by City and a Construction Contract is entered into between City and CM@Risk, the duties, obligations and warranties of the CM@Risk under the Pre-Construction Services Contract survive and are incorporated into the resulting Construction Contract.

Pre-Construction Services –
The services to be provided under the Pre-Construction Services Contract, including Section 17 of these General Conditions.

Detailed Project Schedule –
The Detailed Project Schedule developed by the CM@Risk for the review and approval of the Project Manager in accordance with Section 17.3 of these General Conditions, if applicable.

General Conditions Costs –
Those costs set forth in Section 4 of Appendix 9 to these General Conditions.

GMP Plans and Specifications –
The plan and specifications upon which the Guaranteed Maximum price Proposal is based.

GMP Proposal –
The proposal of Contractor submitted pursuant to Section 17.7 of these General Conditions for the entire Work and/or portion (phases) of the Work.

Guaranteed Maximum Price or GMP –
The Guaranteed Maximum Price set forth in the Contract, Change Order, or Job Order if applicable.

15.2 **CONTRACT PRICE**

15.2.1 The Contract Price for all Contracts, Change Orders, and Job Orders based upon payment of the Cost of the Work plus a Fee with a GMP, time and materials, or cost-plus a fee will be the Cost of the Work incurred plus the Fee agreed to in writing by City, limited to the amount of the GMP, if agreed to. Unless otherwise expressly provided in the Contract, Change Order, or Job Order, all Cost Based pricing will be subject to and limited to GMP.

15.2.2 The Contract Price may only be changed as set forth in Section 9 above.

15.2.3 Only costs specifically designated as reimbursable costs are eligible for payment by City or may be charged against the Contract Price. All other costs will not be paid by City and will not be chargeable against the Contract Price.

15.2.4 Cost-Based Contracts. For Contracts, Change Orders, or Job Orders, reimbursable costs must be determined pursuant to Appendix 9 to these General Conditions, Cost of the Work, and not by MAG Specifications §109.5.

15.3 **ALLOWANCES**

15.3.1 Contractor must include in the Contract Price all Allowances stated in the Contract Documents and agreed to in writing by City. Items covered by these Allowances must be supplied for such amounts and by such persons as City may direct, provided Contractor will not be required to employ persons against whom Contractor makes a reasonable objection. Materials, labor, and equipment under an Allowance will be selected by City in accordance with a schedule to be mutually agreed upon by City, Design Professional and Contractor or

otherwise in reasonably sufficient time to avoid delay in the Work.

15.3.2 Unless otherwise provided in the Contract Documents:

15.3.2.1 These Allowances must cover the cost to Contractor, less any applicable trade discount, of the materials, labor, and equipment required by the Allowances, delivered at the Site, and all applicable taxes;

15.3.2.2 Contractor's costs for unloading and handling on the Site, labor, installation costs, overhead, profit and other expenses relating to materials, labor, and equipment required by the Allowance must be included in the Contract Sum and not in the Allowance; and

15.3.2.3 Whenever the cost is more or less than the Allowance, the Contract Sum must be adjusted accordingly by Change Order, the amount of which will recognize the difference between actual costs for an Allowance item and the amount of the Allowance item and changes, if any, in handling costs on the Site, labor, installation costs, overhead, profit and other expenses.

15.4 **CONTINGENCY**

An agreed to amount in the GMP that may only be used in accordance with the terms set forth in these General Conditions and with prior written approval by the City.

15.4.1 Construction Contingency. This GMP includes a dollar amount listed as a Construction Contingency which will be readily available for increased costs for subcontractors, material, and equipment subject to prior approval of City, which approval will not be withheld unreasonably. The Construction Contingency may also be used, at the discretion of City, to reimburse CM@Risk for unexpected costs due to (a) scope gaps between trade subcontractors; (b) contract default by trade subcontractors; (c) unforeseen field conditions, but only as defined in Section 9.5 above; (d) work completed to meet the intent of the design, but which was not indicated on the plans; (e) costs overruns not covered by allowances; (f) costs of corrective work not provided for elsewhere; and (g) implementation of any Recovery Plan. Cost for which CM@Risk desires to be paid from the Construction Contingency must be documented by CM@Risk on a time and materials basis and are subject to verification by City. If agreed to by City, a "Use of Contingency" form will be executed by both parties authorizing the actual cost of the work to be paid and included in the Work Item Direct Costs. The Construction Contingency is not allocated to any particular item of the Project but may be used for any portion of the work as determined above. Any amount not used in the Construction Contingency will belong to City and will reduce the GMP.

15.4.2 Owner's Contingency. This GMP also includes a dollar amount listed as an Owner's Contingency which may be used only by the City (owner department) for upgrades and changes in scope or other changes not already included within the intent of the Project Program. City will provide CM@Risk with a Work Change Directive authorizing CM@Risk to perform the additional work and to transfer funds from the Owner's Contingency to the Work Item Direct Costs category to be paid with such direct costs. These additional costs will be in an amount mutually agreed upon by CM@Risk and City or will be documented by CM@Risk on a time and materials basis and are subject to verification by City. Any amount not used in the Owner's Contingency will belong to the City and will reduce the GMP.

15.5 **REDUCTION IN RETENTION**

If the Contract Price is based upon a GMP, in order to receive payment of one-half of the

retention as set forth in Section 8.1.5 above, Contractor must also submit to the Project Manager a complete accounting of the Actual Reimbursable Cost of the Work to date, including all such documentation (including, without limitation, invoices, subcontract, subcontractor change orders, purchase orders, records of payment, etc.) as City may require, to establish whether the payments made to Contractor equal, exceed, or are less than the actual reimbursable Cost of the Work to date. Any excess payments by City, as determined by the Project Manager, will be deducted from the one-half retention payment to be made to Contractor, and any additional excess amounts paid to Contractor will be refunded by Contractor to City. The Project Manager's determinations as to Actual Reimbursable Cost of the Work will be the basis of payment until final Project Closeout and Final Payment under the Contract.

15.6 **FINAL PAYMENT**

If the Contract Price is based upon a GMP, as a further condition precedent to Final Payment by City, Contractor must submit to the Project Manager a complete final accounting of the Actual Reimbursable Cost of the Work, including all such documentation (including, without limitation, invoices, subcontracts, subcontractor change orders, purchase orders, records of payment, etc.) as City may require, to establish whether the payments made to Contractor equal, exceed, or are less than the Actual Reimbursable Cost of the Work to date. Any excess payments by City, as determined by the Project Manager, will be deducted from the one-half retention payment to be made to Contractor, and any additional excess amounts paid to Contractor will be refunded by Contractor to City. Disputes relating to the Final Cost of the Work will be subject to City's audit rights under Sections 8.8 above and 15.7 below, and the dispute resolution process under Section 13 above.

15.7 **OPEN BOOK**

On any GMP-based or Cost-Based Contract, Job Order, or Change Order, City may attend any and all meetings or discussions pertaining to the Project, including bid openings, and must have access to all books, invoices, accounts, memoranda, correspondence, and written communications or records of any kind pertaining to the Project, including without limitation, those stored in electronic format.

15.8 **DIFFERING SITE CONDITIONS AND/OR CHANGE IN LAWS**

A Change Order for increased costs under Section 9.5 or 9.6 above will only be considered or granted by City to the extent such actual, documented costs are justified.

SECTION 16 - PROVISIONS APPLICABLE SOLELY TO JOB ORDER CONTRACTS (JOC)

16.1 **ADDITIONAL DEFINITIONS**

The definitions set forth in Sections 2 and below will apply to all Job Order Contracts and Job Orders. In addition, the definitions set forth in Section 15.1 above will apply to all Cost-Based Job Orders.

Contract –
Includes the Job Order Master Agreement and Job Order Project Agreements issued and agreed to by City and JOC Contractor.

JOC Contractor's Coefficient –
A numerical factor that represents JOC Contractor total costs (indirect and direct costs, sales tax, profit, etc.) and other adjustments for market conditions.

Job Order Request for Proposal (RFP) –

The Request for Proposals issued by City for each Job Order Project Agreement relating to a specific Project.

Job Order Cost Proposal –
The Proposal submitted by JOC Contractor in response to a Job Order Request for Proposal (RFP) issued by City to develop a Job Order Project Agreement for a specific Project.

Guaranteed Maximum Price (GMP) Job Order –
Job Order under which JOC Contractor is compensated for actual costs incurred.

Job Order Project Agreement (Job Order) –
The agreement for a specific project, as it may be modified by all Change Orders, executed by the Parties, which incorporates the terms and conditions of the Job Order Master Agreement.

16.2 **ORDERING AND PROCESSING PROCEDURES FOR JOB ORDERS**

16.2.1 The process for developing and issuing a Job Order for a particular Project consists of three (3) procedures: (1) issuance of a RFP by City; (2) JOC Contractor's response to the RFP in the form of JOC Contractor's Job Order Cost Proposal; and (3) Issuance of a Job Order by City, as set for below.

16.2.2 RFP's For Job Orders

16.2.2.1 City will provide to JOC Contractor RFP with a Scope of Work (SOW) describing the Work to be performed, which may include special instructions and conditions, material submittal requirements, and, if applicable, a complete set of sketches, construction drawings and specifications for the Job Order.

16.2.2.2 Some Job Order RFP's will be issued by City without detailed sketches, drawing and specifications and will rely on JOC Contractor to produce them for City review and approval and is considered to be Pre-Construction and incidental design services included in JOC Contractor's overhead for GMP Job Orders. In addition JOC Contractor will not be reimbursed for any Pre-Job Order costs, including proposal preparation, attendance during negotiations, or site visits.

16.2.3 JOC Contractor's Job Order Cost Proposal

16.2.3.1 JOC Contractor must respond within ten (10) calendar days of the RFP date or site visit, whichever is later or as otherwise indicated on a case-by-case basis, by submitting JOC Contractor's Job Order Cost Proposal to the City representative.

16.2.3.2 Unless otherwise required under the terms of the RFP, JOC Contractor's Job Order Cost Proposal must include the following.

a. JOC Contractor's Job Order Cost Proposal in PDF and electronic format;

b. A Project Schedule and schedule of values that reflects the costs of each work element on the schedule. The schedule must show all milestones (e.g., permits, submittals, ordering materials, demolition, work phases, closeout and completion date); and

c. Necessary documentation will be required to indicate that adequate scoping, layout, setup and planning to accomplish the Work has been done.

Examples of documentation that might reasonably be expected include sketches, drawings, calculations, catalog cuts and specifications produced to a level of detail and skill that could be expected of experienced, competent Project Managers with five or more periods experience in their respective trade.

16.2.3.3 JOC Contractor must select Subcontractors based on qualifications alone or on a combination of qualifications and price and must not select Subcontractors based on price alone. A qualifications and price selection may be a one-step selection based on a combination of qualifications and price or two-step selection. In a two-step selection, the first step must be based on qualifications alone and the second step may be based or a combination of qualifications and price or on price alone.

16.2.3.4 Upon request, JOC Contractor must provide City with copies of Subcontractor quotes and the basis for selection of each Subcontractor.

16.2.3.5 If City objects to a selected Subcontractor, City will make the objection and the reasons for the objection known to the JOC Contractor. JOC Contractor must then present an acceptable Subcontractor for the applicable discipline. City will not unreasonably object to or withhold approval of a Subcontractor.

16.2.3.6 For self-performed work, the City retains the right to have the JOC Contractor establish JOC Contractor's costs by bidding their costs against at least three (3) other interested trade Contractors. No self- performed work will be allowed to be performed on a lump sum basis.

16.2.4 Issuance of Job Order

16.2.4.1 City Representative will compare the JOC Contractor's Job Order Cost Proposal with the City's estimate, schedules and other requirements, and then, if the City Representative determines it is in the best interest of City, arrange a meeting with JOC Contractor, at which time the JOC Contractor's Job Order Cost Proposal will be discussed and negotiated.

16.2.4.2 If the City Representative determines that it is in the best interest of the City, City will then issue a Job Order to JOC Contractor for execution.

16.2.4.3 Specific Job Orders may vary, but unless agreed to by City in writing otherwise, the content of Job Orders under the Contract will generally be as follow, all of which will be signed and/or initialed by JOC Contractor's designated representative:

a. The description of the Scope of the Work and Project Schedule (attached as Exhibit A to the Job Order);

b. The address or location of the Work;

c. The Contract Price for Work (Construction) included in the Project (attached as Exhibit B to the Job Order);

d. The name of the JOC Contractor representative for the Project;

e. The Drawings and Specifications for the Project;

f. If any shop drawings, project date and/or samples are required for the Job Order, the date for delivery of each required item (included in the Project Schedule, Exhibit A to the Job order); and

g. Project Specific Provisions, if any, in Exhibit A to the Job Order,

including, without limitation, whether any of the following are required: Pre-Construction Conference, weekly progress meetings, field office, storage enclosure, materials and equipment handling facility, submittals, shop drawings, product data, equipment list, samples, project manual, schedule of values, Construction progress schedule, narrative reports, progress report, progress charts, progress photographs, materials status report, Construction diagram, Construction status report, operation and maintenance data, operating maintenance instructions and parts list, and as-build drawings.

16.2.5 Job Order Intent. Each Job Order will be interpreted to include all items reasonably necessary to complete the Project under that Job Order as described in the scope of the Work in that Job Order. All Work must be performed in a professional manner and all materials used must be new and of the highest quality and of the type best adapted to their purpose, unless otherwise specified. The Notice to Proceed date, and the award date established therein, will be deemed an integral part of the Job Order the same as if set forth therein.

16.3 **INCIDENTAL DESIGN SERVICES**

16.3.1 This effort includes all "extensions of design" for systems that are typically specified in a performance oriented manner by consultants and designers. Examples include: fire sprinkler systems, fire alarm and sprinkler systems, DDC controls, control systems, prefabricated metal building and similar situations. These designs are normally provided under submittals as a shop drawing with engineering backup and as appropriate, seals of registered engineers specializing in the particular system.

16.3.2 Incidental design includes all documents, sketches, schematic diagrams, floor plan layouts, equipment schedules and other documents produced by the JOC Contractor to define the work required for projects that the City does not develop formal or abbreviated designs requiring a seal by a registered engineer. Incidental design does not include preparation of designs requiring an architect or engineer seal.

16.3.3 JOC Contractor represents, covenants, and agrees, and contractually assumes the obligation to furnish, all of the required Design Services through properly licensed and experienced Design Professionals in complete accordance with all of the duties imposed on a Design Professional under the Contract Documents, Laws, Regulations, or Legal Requirements, and the common law.

16.3.4 All Design Documents (and all other Project-related documents, models, computer drawings and other electronic expression, photographs and other expressions CADD, and BIM files and images included) that JOC Contractor and/or JOC Contractor's Design Professional(s) prepare in connection with a Job Order and the copyrights therein (collectively, the "Instruments of Service") will be the property of City. JOC Contractor covenants and agrees to execute any additional document reasonably requested by City to confirm such assignment without any additional compensation.

16.4 **CONSTRUCTION SERVICES**

16.4.1 The following subsections of this Section 16.4 set forth requirements beyond those set forth in Section 4 above which apply to Construction Services performed under a Job Order.

16.4.2 JOC Contractor must perform the Work using only those firms, team members and individuals designated by JOC Contractor consistent with each Job Order or otherwise approved by City pursuant to the General Conditions. No other entities or individuals may be used without the prior written approval of the Project Manager.

16.4.3 Construction Phasing

16.4.3.1 City use of the facilities is anticipated while the Work is being performed. The Work must be planned and accomplished so that there will be a minimum of interference and inconvenience to occupants in the building and agencies in the vicinity and to other craftsmen who may have to do work in the affected facilities. Any blockage of building exits or driveways must be coordinated in advance.

16.4.3.2 If applicable, furniture, portable office equipment and wall appurtenances not rigidly fastened to the walls must be moved by JOC Contractor, protected from damage and replaced to the original position upon completion of the work. If the work required by the Job Order will not allow furniture and portable office equipment to be replaced to its original position, new locations will be designated by City. Incidental costs associated with moving one-piece furnishings up to approximately 150 pounds to perform such tasks as painting, carpet or tile replacement, etc., are considered a general cost of building renovation and must be included in the JOC Contractor's Coefficient. Costs for large scale or wholesale removal and replacement of large quantities of desks or modular workstations, copiers, multiple full file cabinets, etc. to another location or storage outside the work space, or disassembly and reassembly of modular furniture is not considered part of the JOC Contractor's Coefficient and will be priced separately.

16.4.3.3 The work must, so far as practicable, be done in definite sections or divisions and confined to limited areas which must be completed before work in other sections or divisions are begun.

16.4.4 Work Site Conflicts. In the event of a conflict between JOC Contractor and others in an occupied facility or where other Contractors are performing work on the same facility under other Contracts, City will decide to dispute and that decision will be final.

16.4.5 Ownership of Work Product. Work Product prepared or otherwise created in connection with the performance of this Contract, including the Work, are to be and remain the property of City. For purposes of this provision, "Work Product" will include all designs, drawings, plans, specifications, ideas, renderings and other information or matter, in whatever form created (e.g., electronic or printed) and in all media now known or hereinafter created. All Work Product will be considered Work Made for Hire as defined in the United States Copyright Act 17 U.S.C. §101 (Copyright Act). If for any reason any such Work is found not to be a work for hire, JOC Contractor hereby transfers and assigns ownership of the copyright in such Work to City. The rights in this Section are exclusive to City in perpetuity.

16.5 **OPTIONAL LIQUIDATED DAMAGES**

16.5.1 Specific Job Orders. City will have the right to assess liquidated damages in relation to any specific JOC Project Agreement as set forth below.

16.5.2 Substantial Completion Liquidated Damages. JOC Contractor acknowledges and agrees that if JOC Contractor fails to obtain Substantial Completion of the Work within the Contract

Time, City will sustain extensive damages and serious loss as a result of such failure. The exact amount of such damages will be extremely difficult to ascertain. Therefore, City and JOC Contractor agree that if JOC Contractor fails to achieve Substantial Completion of the Work within the Contract Time, City will be entitled to retain or recover from JOC Contractor, as liquidated damages and not as a penalty, the sum per calendar day as indicated in MAG § 108.9.

16.5.3 Final Acceptance Liquidated Damages. For the same reasons set forth in Section 16.5.2 above, City and JOC Contractor further agree that if JOC Contractor fails to achieve Final Acceptance of the Work within the Contract Time, City will be entitled to retain or recover from JOC Contractor, as liquidated damages and not as a penalty, the sum per calendar day as indicated in MAG § 108.9 commencing from the actual date of Substantial Completion or Final Acceptance as required under any specific JOC Project Agreement.

16.5.4 MAG Liquidated Damages. Liquidated damages provisions in MAG § 108.9 may apply to any specific JOC Project Agreement.

16.5.5 City may deduct liquidated damages assessed pursuant to this Section 16.5 from any unpaid amounts then or thereafter due JOC Contractor under the Contract or any specific JOC Project Agreement between JOC Contractor and City. Any liquidated damages not so deducted from any unpaid amounts due JOC Contractor must be payable to City at the demand of City, together with interest from the date of the demand at the highest lawful rate of interest payable to JOC Contractor.

16.6 **PERFORMANCE MEASUREMENT**

16.6.1 Performance Assessment. After the Final Acceptance of Work under each Job Order, City will complete a written evaluation of the performance of JOC Contractor on the Job Order.

16.6.2 Consideration in Assignment of Work. JOC Contractor's record of cost, schedule and quality performance and comparative assessments will be significant considerations in City's determination whether to award future Job Orders. JOC Contractor agrees that any determination by City not to not award future Job Orders or Option periods based on performance will be at the sole discretion of City.

SECTION 17 - PROVISIONS APPLICABLE SOLELY TO PRE-CONSTRUCTION SERVICES FOR CONSTRUCTION MANAGER AT RISK

17.1 **ADDITIONAL DEFINITIONS**

The definitions set forth in Section 2 and 15.1 above will apply to all Pre-Construction Services Contracts.

17.2 **GENERAL**

17.2.1 CM@Risk must perform the Services required by, and in accordance with the Contract Documents and as outlined in Exhibit A of the Contract to the satisfaction of the Project Manager, exercising the degree of care, skill, diligence and judgment a professional construction manager experienced in the performance of such services for construction and/or facilities of similar scope, function, size, quality, complexity and detail to the Project in urban areas throughout the United States, would exercise at such time, under similar conditions. CM@Risk must, at all times, perform the required services consistent with sound and generally accepted engineering principles and construction management

and construction contracting practices.

17.2.2 As a participating member of the Project Team, CM@Risk must provide to City and Design Professional a written evaluation of City's Project Program and budget, each in terms of the other, with recommendations as to the appropriateness of each. CM@Risk must prepare a Baseline Cost Model that validates City's budget. The Baseline Cost Model must include all assumptions and basis of estimates in enough detail so that the Project Team can compare future detail estimates to the Baseline Cost model for variances. City and Design Professional will provide all the reasonably required data that is available in order to reach agreement between the team members that the Baseline Cost Model is an accurate projection of the costs of the Project.

17.2.3 CM@Risk must attend Project Team meetings, which may include, but are not limited to, bi- weekly Project management meetings, Project workshops, special Project meetings, construction document rolling reviews, public meetings and partnering sessions. CM@Risk attendance at design or other meetings in which CM@Risk is provided the opportunity but does not actively participate and/or is not properly prepared is not acceptable. Repeated instances of non-participation and/or lack of preparedness will be grounds for termination of CM@Risk Contract for default.

17.2.4 CM@Risk must provide Pre-Construction Services, described herein, in a timely manner and consistent with the intent of the most current Drawings and Specifications. CM@Risk must promptly notify City in writing whenever CM@Risk determines any Drawings or Specifications are inappropriate for the Project and/or cause changes in the scope of Work that deviates more than the allowed contingencies within the Baseline Cost Model or requires an adjustment in the Baseline Cost Model, Detailed Cost Estimate, Detailed Project Schedule, GMP Proposals and/or in the Contract Time for the Work, to the extent such as established.

17.2.5 CM@Risk when requested by City, must attend, make presentations and participate as may be appropriate in public agency and or community meetings, relevant to the Project. CM@Risk must provide drawings, schedule diagrams, budget charges and other materials describing the Project when their use is required or appropriate in any such public agency meetings.

17.2.6 Ownership of Work Product. All Work Product prepared or otherwise created in connection with the performance of this Contract, including the Work, are to be and remain the property of City. For purposes of this provision, "Work Product" will include all designs, drawings, plans, specifications, ideas, renderings and other information or material, in whatever form created (e.g., electronic or printed) and in all media now know or hereinafter created. All Work Product will be considered Work Made for Hire as defined in the United States Copyright Act 17 U.S.C.
§101 (Copyright Act). If for any reason any such Work is found not to be a work for hire, Contractor hereby transfers and assigns ownership of the copyright in such Work to City. The rights in this Section are exclusive to City in perpetuity.

17.2.7 CM@Risk represents to City in completing Pre-Construction Services and providing the reports and analysis required thereunder, that Work can be properly and timely constructed within the GMP Proposal, if accepted. CM@Risk does not assume any design responsibilities unless specifically called for in the scope of work, but CM@Risk will be responsible for their errors, omissions or inconsistencies included in the Work.

17.3 **DETAILED PROJECT SCHEDULE**

17.3.1 The fundamental purpose of the Detailed Project Schedule is to identify, coordinate and record the tasks and activities to be performed by all of the Project Team members and then for the Project Team to utilize that Deliverable as a basis for managing and monitoring all member's compliance with the schedule requirements of the Project. Each Project Team member is responsible for its compliance with the Detailed Project Schedule requirements. CM@Risk must, however, develop and maintain the Detailed Project Schedule on behalf of and to be used by the Project Team based on input from the other Project Team members. The Baseline Project Schedule must be developed as part of the Baseline Cost Model. The Detailed Project Schedule must use the Critical Path method ("CPM") technique, unless required otherwise, in writing by City. CM@Risk must use scheduling software acceptable to City to develop the Detailed Project Schedule. The Detailed Project Schedule must be presented in graphical and tabular reports as agreed upon by the Project Team. If Project phasing as described below is required, the Detailed Project Schedule must indicate milestone dates for the phases once determined. As part of construction phase, City may require CM@Risk to prepare a "resource loaded" schedule for all work, including work performed by Subcontractors, detailing each of the project tasks and the required/anticipated number of personnel per day for each task. CM@Risk must also indicate on the schedule its ability to meet said required/anticipated personnel requirements.

17.3.2 CM@Risk must include and integrate in the Detailed Project Schedule the services and activities required of City, Design Professional and CM@Risk including all construction phase activities based on the input received from City and the Design Professional. The Detailed Project Schedule must define activities as determined by City to the extent required to show: (a) the coordination between preliminary design and various pre-construction documents, (b) any separate long-lead procurements, (c) any permitting issues, (d) any land, right-of-way, or easement acquisition, (e) bid packaging strategy and awards to Subcontractors and Suppliers, (f) major stages of construction, (g) start-up and commissioning, and (h) occupancy of the completed Work by City. The Detailed Project Schedule must include by example and not limitation, proposed activity sequences and durations for design, procurement, construction and testing activities, milestone dates for actions and decisions by the Project Team, preparation and processing of shop drawings and samples, delivery of materials or equipment requiring long-lead time procurement (if any), milestone dates for various construction phases, Total Float for all activities to the extent authorized by City, relationships between the activities, City's occupancy requirements showing portions of the Project having occupancy priority, and proposed dates for Final Acceptance.

17.3.3 A Baseline Project Schedule must be initiated with the project Baseline Cost Model and agreed to by the project team at the same time. CM@Risk must update and maintain a detailed Project Schedule throughout pre-construction such that it will not require major changes at the start of the construction phase to incorporate CM@Risk's plan for the performance of the construction phase Work. CM@Risk must provide updates and/or revisions to the Detailed Project Schedule for use by the Project Team, whenever required, but no less often than at the Project Team meetings. CM@Risk must include with such submittals a narrative describing its analysis of the progress achieved to-date vs. the Baseline Project Schedule, including any concerns regarding delays or potential delays, and any recommendations regarding mitigating actions.

17.3.4 If phased construction is deemed appropriate at the time of developing the Baseline Cost Model or during the development of the Detailed Project Schedule, and City approves, CM@Risk must review the design and make recommendations regarding the phased issuance of Construction Documents to facilitate phased construction of the Work, with the objective of reducing the Project Schedule and/or Cost of the Work. CM@Risk must take into consideration such factors as natural and practical lines of work severability, sequencing effectiveness, access and availability constraints, total time for completion, construction market conditions, labor and materials availability, and any other factors pertinent to saving time and cost.

17.3.5 Long Lead Time Items. As part of developing the Detailed Project Schedule, CM@Risk must identify all long lead time materials, fabrications, equipment, or other items which may impact the Project Schedule and may require early action on the part of the Project Team. Dates for selecting and ordering long lead time items will be included and highlighted in the Detailed Project Schedule

17.3.6 Equipment Plan. Contractor must develop an Equipment Plan that addresses all rental and owned equipment, regardless of whether such equipment will be provided by CM@Risk or subcontractor(s), that will be necessary to construct the Project and the cost of which will be included as a Cost of the Work in the GMP Proposal. The Equipment Plan will seek to minimize the cost of the equipment to City and maximize the efficient and coordinated use of the equipment for completion of the Project. The Equipment Plan will not only include the costs and allowable lease rates for the equipment, but will also include an equipment schedule that will be incorporated into the Detailed Project Schedule and the Schedule of Values submitted with the GMP Proposal.

17.4 **DESIGN DOCUMENT REVIEWS**

17.4.1 CM@Risk must evaluate periodically the availability of labor, materials/equipment, cost-sensitive aspects of the design; and other factors that may create an unacceptable variance to the Baseline Cost Model and/or Baseline Project Schedule.

17.4.2 CM@Risk must recommend, in conjunction with the Project Team, those additional surface and subsurface investigations that, in its professional opinion, are required to provide the necessary information for CM@Risk to construct the Project. These additional investigations, if agreed to be necessary by the Project Manager and the Design Professional, will be acquired by City and copies of the reports will be provided to CM@Risk.

17.4.3 CM@Risk must meet with the Project Team as required to review designs during their development. CM@Risk must familiarize itself with the evolving documents through pre- construction. CM@Risk must proactively advise the Project Team and make recommendations on factors related to construction costs, and concerns pertaining to the feasibility and practicality of any proposed means and methods, selected materials, equipment and building systems, and, labor and material availability. CM@Risk must furthermore advise the Project Team on proposed site improvements, excavation and foundation considerations, as well as, concerns that exist with respect to coordination of the Drawings and Specifications. CM@Risk must use established value analysis principles in recommending cost effective alternatives.

17.4.4 CM@Risk must routinely conduct constructability and bid-ability reviews of the Drawings and Specifications as necessary to satisfy the needs of the Project Team. The reviews must attempt to identify all discrepancies and inconsistencies in the Construction Documents

especially those related to clarity, consistency, completeness and coordination of Work of Subcontractors and Suppliers.

17.4.4.1 CM@Risk must evaluate whether: (a) the Drawings and Specifications are configured to enable efficient construction; (b) design elements are standardized; (c) construction efficiency is properly considered in the Drawings and Specifications; (d) module/preassembly design is prepared to facilitate fabrication, transport and installation; (e) sequences of Work required by or inferable from the Drawings and Specifications are practicable; (f) the design has taken into consideration efficiency issues concerning access and entrance to the site, laydown and storage of materials, staging of site facilities, construction parking, and other similar pertinent issues; and (g) the design maintains continued operation of the existing City systems and maintains traffic on adjacent roadways. CM@Risk must also review the Drawings and Specifications to ensure that what is depicted therein can be constructed as designed and must promptly inform the Project Team of any issues.

17.4.4.2 CM@Risk must check cross-reference and complementary Drawings and sections within the Specifications and in general evaluate whether: (a) the Drawings and Specifications are sufficiently clear and detailed to minimize ambiguity and to reduce scope interpretation discrepancies; (b) named materials and equipment are commercially available and are performing well, or otherwise, in similar installations; (c) Specifications include alternatives in the event a requirement cannot be met in the field; and (d) in its professional opinion, the Project is likely to be subject to Differing Site Conditions.

17.4.4.3 The results of the reviews must be provided to Project Team in formal, written reports clearly identifying all reviewed documents and the discovered discrepancies and inconsistencies in the Drawings and Specifications with notations and recommendations made on the Drawings, Specifications and other documents. CM@Risk must meet with Project Team to discuss any findings and review reports.

17.4.4.4 CM@Risk's reviews must be from a Contractor's perspective, and though it will serve to eliminate/reduce the number of RFIs) and changes during the construction phase, responsibility for the Drawings and Specifications will remain with the Design Professional and not CM@Risk.

17.4.5 It is CM@Risk's responsibility to assist the Design Professional in ascertaining that, in CM@Risk's professional opinion, the Construction Documents are in accordance with applicable Laws, Regulations, or Legal Requirements, building codes, sound engineering principle's rules and regulations. If CM@Risk recognizes that portions of the Construction Documents are at variance with applicable laws, statutes, ordinances, building codes, sound engineering principle's rules and regulations, it must promptly notify the Project Team in writing, describing the apparent variance of deficiency. However, the Design Professional is ultimately responsible for the compliance of the Drawings and Specifications with those laws, statutes, ordinances, building codes, rules and regulations.

17.4.6 The Project Team will routinely identify and evaluate using value analysis principles and alternate systems, approaches, design changes that have the potential to reduce Project costs while still delivering a high quality and fully functional Project consistent with the Project Program. If the Project Team agrees, CM@Risk in cooperation with the Design Professional, will perform a cost/benefit analysis of the alternatives and submit such in writing to the Project Team. City, through the Project Manager, will direct which alternatives

will be incorporated into the Project. The Design Professional will have full design responsibility for the review and incorporation of CM@Risk suggested alternatives into the Drawings and Specifications. CM@Risk must analyze the costs and schedule impacts of the alternatives against the Baseline Cost Model and Schedule and provide a recommendation for the Project Team's consideration and City's approval prior to the establishment of the GMP.

17.5 **BASELINE COSTS MODEL, DETAILED COST ESTIMATES, AND SCHEDULE OF VALUES**

17.5.1 At the conclusion of the Master Planning and Programming, if required, CM@Risk will review all available information regarding the design and scope of the Project using CM@Risk's experience in performing similar work, knowledge of similar projects and current and projected construction costs and, based upon that review, must develop a Baseline Cost Model for review by the Project Team and approval by City. Once approved by City, the Baseline Cost Model will be continually referenced as detailed estimates are created as the design progresses throughout Pre-Construction until the final GMP for the entire Project is established. A final GMP for the entire Project must be established and approved by City prior to the start of construction. It is the responsibility of CM@Risk to ensure City has sufficient information to evaluate and approve a final GMP prior to the time necessary to start construction so construction can be completed within the Contract Time. The Project Detailed Cost Estimate will be the best representation from CM@Risk of what the complete functional Project's construction costs will be as indicated by the most current available documents and will be constantly checked against the Baseline Cost Model. CM@Risk must communicate to the Project Team and assumptions made in preparing the Baseline Cost Model. The Baseline Cost Model must support CM@Risk's Detailed Cost Estimates and may be broken down initially as dictated by the available information, as required by City.

17.5.2 After receipt of the Design Professional's most current documents from certain specified pre- construction milestones, CM@Risk must provide a draft Detailed Cost Estimate including a detailed written report detailing any variances to the Baseline Cost Model and Baseline Project Schedule. The Design Professional and CM@Risk will reconcile any disagreements on the estimate to arrive at an agreed upon Detailed Cost Estimate for the construction costs based on the scope of the Project through that specified pre-construction milestone. Pre-Construction milestones applicable to this paragraph are: Master Planning and Programming, Schematic Design, 50% Design Development, 100% Design Development, and 50% Construction Drawings, If no consensus is reached, City will make the final determination. If the Project Team requires additional updates of the Detailed Cost Estimate beyond that specified in this paragraph, CM@Risk must provide the requested information in a timely manner.

17.5.3 If at any point the Detailed Cost Estimate submitted to City exceeds the previously accepted Baseline Cost Model or previously approved Detailed Cost Estimate agreed to as set forth in Section 17.5.2 above, CM@Risk must make appropriate recommendations to project Team on means/methods, materials, and or other design elements that it believes will reduce the estimated construction costs, such that it is equal to or less than the established Project Team's Baseline Cost Model.

17.5.4 Unless other levels of completion are agreed to in writing in the Construction Documents, at 50% Construction Drawings and included with the associated report, CM@Risk must also submit to the Project Team for review and approval a Schedule of Values that complies

with the following requirements. The Schedule of Values must be based on City standard bid schedule and highlight significant variances from any previously submitted Schedule of Values. The Schedule of Values must be directly related to the breakdowns reflected in the Detailed Project Schedule and CM@Risk's Detailed Cost Estimate. In addition, the Schedule of Values must: (a) detail unit prices and quantity take-offs, (b) detail all other contingencies and unit price Work shown and specified in the detailed design documents.

17.5.5 CM@Risk is to track, estimate/price and address the Project Team's overall project cost issues that arise outside of the Baseline Cost Model and the latest approved Detailed Cost Estimate such as: City generated changes, Project Team proposed changes, alternate system analysis, constructability items and value engineering analysis. The system used to implement this process will be referred to as the Design Evolution Log. This is to be addressed between the Baseline Cost Model and the Master Planning and Programming Detailed Cost Estimate, and then (unless other levels of completion are agreed to in writing in the Construction Documents) between the Detailed Cost Estimates for each of the pre-construction milestones thereafter, Schematic Design, 50% Design Development, 100% Design Development, and 50% Construction Documents, and the bid packages for all Phases.

17.5.6 Upon request by City, CM@Risk must submit to City a cash flow projection for the Project based on the current updated/revised Detailed Project Schedule and the anticipated level of payments for CM@Risk during the design and construction phases. In addition, if requested by City and based on information provided by City, CM@Risk must prepare a cash flow projection for the entire Project based on historical records for similar types of projects to assist City in the financing process.

17.5.7 Construction Water. CM@Risk must estimate the quantity of water to be used and include the cost thereof in each Detailed Cost Estimate and GMP Proposal provided by City.

17.6 **SUBCONTRACTOR AND MAJOR SUPPLIER SELECTIONS**

17.6.1 There are two ways to select Subcontractors and major Suppliers prior to submission of a GMP Proposal: (1) qualifications-based selection; or (2) a combination of qualifications and price. Except as noted below, the selection of Subcontractors/Suppliers is the sole responsibility of CM@Risk. In any case, CM@Risk is solely responsible for the performance of the selected Subcontractors/Suppliers, and for compliance with the requirements of Title 34 of the Arizona Revised Statutes in the selection of a Subcontractors/Suppliers, to the extent applicable. CM@Risk must comply with its Subcontractor Selection Plan submitted with its Statement of Qualifications.

17.6.2 City may approve the selection of a Subcontractor(s) or Suppliers(s) based only on their qualifications when CM@Risk can demonstrate it is in the best interest of the Project. All Work that is performed, after such a qualifications-based selection, for a price that is negotiated by CM@Risk will be billed in accordance with the GMP for actual costs and may be subject to audit by City.

17.6.2.1 Qualifications based selection of a Subcontractor(s)/Supplier(s) should only occur prior to the submittal of the GMP Proposal.

17.6.2.2 If a Subcontractor/Supplier selection plan was submitted and agreed to by City, CM@Risk must apply the plan in the evaluation of the qualifications of a Subcontractor(s) or Supplier(s) and provide City with its review and recommendations.

17.6.2.3 CM@Risk must receive written City approval for each selected Subcontractor(s) and Supplier(s).

17.6.2.4 CM@Risk must negotiate costs for services/supplies from each Subcontractor/Supplier selected under this method.

17.6.3 All Work must be competitively bid unless a Subcontractor or Supplier was selected pursuant to Section 17.6.2 above.

17.6.3.1 CM@Risk must develop Subcontractor and Supplier interest, submit the names of a minimum of three qualified Subcontractors or Suppliers for each trade in the Project for approval by City and solicit bids for the various Work categories. If there are not three qualified Subcontractors/Suppliers available for a specific trade or there are extenuating circumstances warranting such, CM@Risk may request approval by City to submit less than three names. Without prior written notice to City, no change in the recommended Subcontractors/Supplies will be allowed.

17.6.3.2 If City objects to any nominated Subcontractor/Supplier or to any self-performed Work for good reason, CM@Risk must nominate a substitute Subcontractor/Supplier that is acceptable to City.

17.6.3.3 CM@Risk must distribute Drawings and Specifications, and when appropriate, conduct a Pre- Bid Conference with prospective Subcontractors and Suppliers.

17.6.3.4 If CM@Risk desires to self-perform certain portions of the Work, it must request to be one of the approved Subcontractor bidders for those specific bid packages. CM@Risk's bid will be evaluated in accordance with the process identified below. If events warrant and City concurs that it is necessary in order to ensure compliance with the Project Schedule and/or the most recent Detailed Cost Estimate, CM@Risk may be authorized to self-perform Work without bidding or rebidding the Work. When CM@Risk self-performs work without bidding, only the actual costs associated with performing the Work in accordance with the approved GMP will be billed and may be subject to audit by City.

17.6.3.5 CM@Risk must receive, open, record and evaluate the bids; provided, however, that if CM@Risk or one of its affiliates is bidding to self-perform the Work that is the subject of the bid, then the bids must be received, opened, recorded and evaluated by Project Manager instead of CM@Risk. Bids for each category of Work must be opened and recorded at a pre-determined time. The apparent low bidders must be interviewed to determine the responsiveness of their proposals. In evaluating the responsiveness of bid proposals CM@Risk, in addition to bid price, may consider the following factors: past performance on similar projects, qualifications and experience of personnel assigned, quality management plan, approach or understanding of the Work to be performed, and performance schedule to complete the Work. The final evaluation of Subcontractor/Supplier bids must be done with Project Manager in attendance to observe and witness the process. CM@Risk must resolve any Subcontractor/Supplier bid withdrawal, protest or disqualification in connection with the award at no increase in the Cost of Work.

17.6.4 CM@Risk will be required to prepare two different reports on the subcontracting process.

17.6.4.1 Within fifteen days after each major Subcontractor/Supplier bid opening process; CM@Risk must prepare a report for City's review and approval identifying the recommended Subcontractors/Supplier for each category of Work. The report must detail:

(a) the name of the recommended Subcontractor/Supplier and the amount of the Subcontractor/Supplier bid for each sub-agreement; (b) the sum of all recommended Subcontractor/Supplier bids received; (c) and trade work and its cost that CM@Risk intends to self-perform, if any.

17.6.4.2 Upon completion of the Subcontractor/Supplier bidding process, CM@Risk must submit a summary report to City of the entire Subcontractor/Supplier selection process. The report must indicate, by bid process, all Subcontractors/Suppliers contacted to determine interest, the Subcontractors/Suppliers solicited, the bids received and costs negotiated, and the recommended Subcontractors/Suppliers for each category of Work.

17.6.5 The approved Subcontractors/Suppliers will provide a Schedule of Values with their bid proposals, which will be used to create the overall Project Schedule of Values.

17.6.6 If after receipt of sub-bids or after award to Subcontractors and Suppliers, City objects to any nominated Subcontractor/Supplier or to any self-performed Work without any reasonable basis, CM@Risk must nominate a substitute Subcontractor or Supplier, preferably if such option is still available, from those who submitted Subcontractor bids for the Work affected. Once such substitute Subcontractors and Suppliers are consented to by City, CM@Risk's proposed GMP for the Work or portion thereof must be correspondingly adjusted to reflect any higher or lower costs form any such substitution.

17.7 **GMP PROPOSAL**

17.7.1 When a GMP Proposal is submitted for a phase of the Work, the GMP will have a Detailed Cost Estimate of the Costs of the Work (as set forth in Section 15.2) in each phase of the Work that is being proposed plus the current estimate for all other Work. City will not approve the GMP for the phase of work without a total estimate for the complete Project. City may request a GMP Proposal for all or any portion of the Project and at any time during pre-construction. Any GMP Proposals submitted by CM@Risk must be based on and consistent with Baseline Cost Model and the current update/revised Detailed Cost Estimate at the time of the request and include any clarifications or assumptions upon which the GMP Proposal(s) are based.

17.7.2 A GMP Proposal for the entire Project will be the sum of the Cost of the Work, CM@Risk Fee, and General Conditions Cost. CM@Risk guarantees to complete the Project at or less than the final GMP Proposal amount plus approved Change Orders. CM@Risk will be responsible for any costs for expenses that would cause the Cost of the Work actually incurred, including the Construction Fee and General Conditions Costs, to exceed the GMP.

17.7.3 CM@Risk must prepare its GMP Proposal in accordance with City's request for GMP Proposal requirements based on the most current completed Drawings and Specifications at that time, which unless otherwise directed by City in writing, will be at 100% Construction Drawings. CM@Risk must mark the face of each document of each set upon which its GMP Proposal is based. These documents must be identified as the GMP Plans and Specifications. CM@Risk must send one set of those documents to the Project Manager, keep one set and return the third set to the Design Professional.

17.7.4 An updated/revised Detailed Project Schedule, Equipment Plan, and Schedule of Values must be included in any GMP Proposal(s), all of which must reflect the GMP Plans and Specifications the Detailed Project Schedule must be shown in relationship to the Project Schedule and identify any variance to the Baseline Project Schedule. Any such Detailed

Project Schedule updates/revisions must continue to comply with the requirements of Section 17.3.1 through 17.3.5.

17.7.5 GMP Proposals(s) Review and Approval

17.7.5.1 CM@Risk must meet with the Project Team to review the GMP Proposal(s) and the written statement of its basis. In the event the Project Team discovers inconsistencies or inaccuracies in the information presented, CM@Risk must make adjustments as necessary to the GMP Proposal.

17.7.5.2 If during the review and negotiation of GMP Proposals design changes are required, City may authorize and cause the Design Professional to revise the GMP Plans and Specifications to the extent necessary to reflect the agreed-upon assumptions and clarifications contained in the final approved GMP Proposal. Such revised GMP Plans and Specification will be furnished to CM@Risk. CM@Risk must promptly notify the Project Team in writing if any such revised GMP Plans and Specifications are inconsistent with the agreed upon assumptions and clarifications.

17.7.6 All portions of or items comprising the GMP Proposal are subject to audit by City, as deemed appropriate by City, including, without limitation, any based upon unit prices or Work to be self- performed by CM@Risk, or its affiliates.

17.8 **PAYMENT PROCEDURE FOR PRE-CONSTRUCTION SERVICES**

17.8.1 Requests for monthly payments by CM@Risk for Pre-Construction Services must be submitted monthly and must be accompanied by a progress report, detailed invoices and receipts, if applicable. Any requests for payment must include, as a minimum, a narrative description of the tasks accomplished during the billing period, a listing of any Deliverables submitted, and copies of any Subconsultants' requests for payment, plus similar narrative and listings of Deliverables associated with their Work. Payment for services negotiated as a lump sum will be made in accordance with the percentage of work completed during the preceding month.

17.8.2 In no event will City pay more than seventy-five (75%) of the Contract Price until acceptance of ALL Pre-Construction Services and award of the final approved Construction Services Contract for the entire Project by City Council. If CM@Risk does not prepare a GMP Proposal that is acceptable to City, or the GMP Proposal exceeds the City's Construction Budget, then CM@Risk understands and acknowledges that it will forfeit any right to receive the 25% of the Contract Price being retained by City.

17.8.3 CM@Risk agrees that no charges or claims for costs or damages of any type will be made by it for any delays or hindrances beyond the reasonable control of City during the progress of any portion of Pre-Construction Services specified in this Contract. Such delays or hindrances, if any, will be solely compensated for by an extension of time for such reasonable period and may be mutually agreed between the parties. It is understood and agreed, however, that permitting CM@Risk to proceed to complete any such Services, in whole or in part after the date to which the time of completion may have been extended, will in no way act as a waiver on the part of City of any of their respective legal rights herein.

17.8.4 No compensation to CM@Risk will be allowed contrary to Article I, Chapter I, Title 34 of the Arizona Revised Statutes.

17.8.5 If any service(s) executed by CM@Risk is abandoned or suspended in whole or in part, for a period of more than 180 days through no fault of CM@Risk, CM@Risk is to be paid for the services performed prior to the abandonment or suspension.

17.9 **SURVIVAL OF THE DESIGN SERVICES CONTRACT, DUTIES, OBLIGATIONS AND WARRANTIES**

If the GMP Proposal is accepted by City and a Construction Contract is entered into between City and CM@Risk, the duties, obligations and warranties of CM@Risk under the Pre- Construction Services Contract survive and are incorporated into the resulting Construction Contract.

SECTION 15 – APPENDICES

The following Appendices attached hereto are referenced in the General Conditions and are incorporated herein.

Appendix 1 – Policy Statement for Calculating Delays and Damages
Appendix 2 – Cost Reduction Incentive Proposals for Design Bid Build Contracts
Appendix 3 – Contractor's Affidavit Regarding Settlement of Claims
Appendix 4 – Forms of Performance Bond
Appendix 5 – Forms of Payment Bond
Appendix 6 – Dispute Resolution
Appendix 7 – Certificate of Completion
Appendix 8 – Construction Sign Detail
Appendix 9 – Cost of the Work (Applicable solely to Construction Manager at Risk and Job Order Contracting)
Appendix 10 Landscape Establishment Period

CALCULATING DELAYS AND DAMAGES

The purpose of this policy statement is to establish guidelines and procedures for negotiation between the Contractor and City of Chandler relating to compensation for delays pursuant to Arizona Revised Statutes (A.R.S.) 34-221(F). This policy statement contains notice requirements in addition to those set forth in the Contractor Documents, and will be the Contract Provision contemplated by that statute.

NOTE: As used herein, the term "Engineer" will refer to the City of Chandler City Engineer or his/her designated representative. Nothing in this Policy Statement will be construed to void any provision in the Contract which requires timely notice of delays or provides for arbitration or any other procedure for settlement or provides for liquidated damages.

I. TYPES OF DELAYS:

For the purposes of this document, there are essentially four types of delays encountered by City of Chandler Construction Contractors; excusable/compensable, excusable/non-compensable, non- excusable, and concurrent. Only delays that extend Contract Completion Time set forth in the Contract Document will be considered for issues relating to Contract extensions or additional compensation. All other delays are considered to be activity delays and do not entitle the Contractor to either time extensions or additional compensation. Contract Completion Time will be defined as the date set forth in Maricopa Association of Governments (MAG) Uniform Standard Specification Section 101 and as may be modified by the Contract Documents.

A. Excusable/Compensable:

These are delays caused solely by the City's actions or inactions, are unreasonable under the circumstances, and which were not within the contemplation of the parties to the Contract at or prior to the time of execution of the Contract. Since the Contractor presumably has no control over the events causing the delay, he may be entitled to both contract time extensions and additional compensation for delay damages. Further, he/she may be entitled to additional compensation from the impact of that delay on other work. Examples of excusable/compensable (E/C) delays include: failure to properly locate an underground City-owned utility within 2 feet of the actual location; failure to relocate City-owned utilities far enough in advance of construction in an area where the Contractor is scheduled to work that it delays start or completion of the Contractor's regularly scheduled work; failure to provide City-furnished equipment or materials in a timely manner if required by the Contract; failure to acquire necessary Right-of-Way or Public Utility Easements prior to the Contractor beginning Work in the area; failure to timely return Shop Drawings or other Contract Submittals in accordance with the Contract; unreasonable delay by the City in making decisions which affect critical activities; surveying errors when the City is contractually responsible for providing Project Surveying. This list is not meant to be all inclusive, but is intended merely as examples of the type of City action or inaction which can result in a Contractor's claim for additional time and compensation.

B. Excusable/Non-compensable:

These are delays over which neither the City nor the Contractor had control. Since both parties to the Contract have been potentially damaged by the delay, but neither have caused it, only Time Extensions are warranted. Examples of excusable, non-compensable (E/N) delays include: unusually severe weather; fire; acts of God; failure of non-City owned utilities (SRP, CenturyLink, Cable TV, Southern Pacific Railroad, and Southwest Gas, etc.) to properly or timely locate accurately; failure of non-City owned utilities to relocate in advance of construction; the voluntary or involuntary filing for Bankruptcy protection by a Supplier or Subcontractor which causes the Supplier/Subcontractor to fail to meet a contractual deadline provided the Contractor can provide documentation that he/she executed the required Purchase Orders/Subcontract Agreements and received delivery schedules which, if met, would have eliminated the delay; delays as a result of an incomplete shutdown of a City or non-City owned utility main (the City does not guarantee a complete shutdown). This list also is not necessarily all inclusive but merely indicative of type and class of E/N delays.

C. Non-excusable/Non-compensable:

These are delays caused by the actions or inactions of Contractor or an officer, employee, agent, Subcontractor, Supplier or any other party for whom the Contractor is responsible. Since the Contractor has assumed responsibility for the risks associated with the events that caused the delay, he/she are not entitled to either time extensions or monetary delay damages. All non-excusable delays are also non-compensable. Examples of non- excusable, non-compensable (N/N) delays include: failure to perform by the Contractor, its Subcontractors and/or Suppliers (except as noted in section I.B above); failure to provide adequate labor, materials, and/or equipment on the Project; failure to perform contractually-required coordination with utilities, agencies and other Contractors; failure to notify the Engineer, in writing, of delay impacts within two working days, as required by MAG 104.2.3, or the next work day, as required by MAG 109.8.2; failure to timely submit Shop Drawings; failure to pothole or otherwise visually locate utilities sufficiently ahead of the Work to allow the Engineer to direct corrective action when necessary; delays due to retesting of previously failed work, re-inspection, and/or restaking resulting from faulty workmanship, poor quality control, or lack of compliance with Contract Specifications. Again, this list is not necessarily all inclusive.

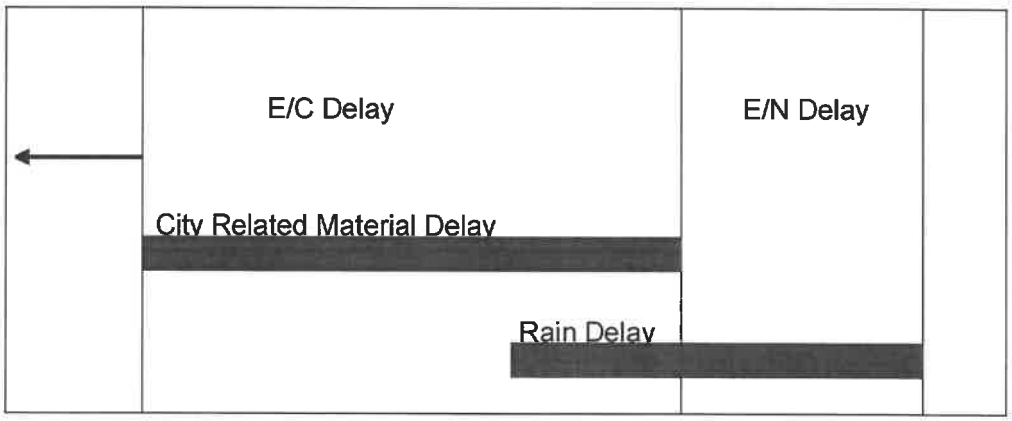
D. Concurrent:

When two or more delays occur simultaneously or overlap, each delay is analyzed separately to determine its impact on the overall project completion date based on when that delay started. Once again, only those delays which actually extend the contract completion time are considered as delays. The concurrent delay is considered an additional delay only to the extent it prolongs the delay to the Contract Completion Time beyond the date that the one it is concurrent with had already delayed that date. For example, if two delays are concurrent, and one is five days long and the second is seven days long, the second concurrent delay will

only extend the Contract Completion Time by two days. The same method of analysis is used when there are multiple concurrent delays. Only those extending the Project Completion Date are considered to be delays for the purposes of this policy. The portion of each concurrent delay that delays the completion of the work is classified in the same manner as described previously for individual delays and being either E/C, E/N or N/N.

An example of a concurrent delay is where the City delays furnishing material, but the Contractor could not have installed it anyway due to unusually severe weather. The effect of the first delaying activity will extend for the full duration and will be considered controlling on the Contractor's schedule. A subsequent, concurrent delay will thereafter only be considered to effect the project completion (if at all) once the first delaying activity has ceased to impact the project completion. In this case, if the unusually severe weather continued and delayed the work after the material was delivered, the first portion of the delay would be classified E/C (delay for material) and the second as E/N (delay due to unusually severe weather). Using the procedure set forth above, the entire concurrent portion would be considered E/C as shown in the chart which follows.

Example of a Concurrent Delay:



II. ANALYZING THE DELAY:

The Contractor must provide all documents required or requested by the Engineer to analyze the delay(s). It is important to understand that, prior to the delay analysis, delays and their impacts are alleged issues. The information the Contractor provides will be compared with the Inspector's Daily Log, Schedules and other available Project information and together they will support or refute that delays occurred and, if so, how they impact other work and the overall project completion. The Contractor's delay in providing these documents will be considered prima facie evidence that either the delay did not occur or it did not impact the Project Completion Date and any claim for time extension or damages will be denied.

The Engineer will accept delay analyses in CPM format, as these may demonstrate to his/her satisfaction whether or not Project Completion has been impacted by a specific event. If the Contractor chooses not to use CPM scheduling procedures, then the burden will be on the Contractor to prove to the Engineer's satisfaction that the Project Completion has been impacted. The procedures below assume that the Contractor is using CPM scheduling methods.

As a minimum the Contractor must provide the following materials to the Engineer:

A. As-Planned Schedule. The initial construction schedule, required by the Contract Documents, will be considered the baseline schedule. It is to the Contractor's advantage that the As-Planned (baseline) Schedule be as detailed as possible in order for delays, as they occur, to be incorporated into the schedule in representative locations. It is also to the Contractor's advantage to use a computer software program to generate the schedule since updated schedules are required monthly by the Contract Documents and since updated schedules are required to support delays and requests for additional compensation for delays. The As-Planned (baseline) Schedule must be presented in network format which clearly shows the interrelationships of the activities. The Contractor must also provide a printout of the activities showing early start, early finish, late start, late finish, duration and float. The activity list printout must also indicate predecessor and successor activities.

B. As-Built Schedules. The as planned (baseline) schedule must be updated with complete progress-to-date information (actualized) up to the date of the start of the alleged delay. Each updated schedule will serve as the as-built schedule for analyzing the alleged delay and provide a new baseline as-planned schedule for the next delay. This process must be repeated for each alleged delay as it occurs. In updating the baseline schedule, the alleged delay must be treated as an activity and inserted into the schedule as a predecessor to the impacted activity (ies). When an activity that has already started is impacted, it is preferable to divide this activity into two parts and show the impact affecting the second part. For schedules which incorporate a time line (or data date), the delay activity must be inserted at the time it actually occurred. Some software scheduling programs have a PAUSE-RESUME feature that can be used to facilitate the requirements. The updated schedule must also be accompanied by a listing of activities as with the baseline schedule. This activities list must contain the alleged delay as an activity showing the duration and the activities which are predecessors and successors to it. When computer generated schedules are used, the Contractor must provide, in electronic media format, the complete data files for the updated schedule that included the delay activity, preferably either in Suretrak or in Microsoft Project. Each electronic media must contain a label identifying the Project name, Contractor's name, program name and version number, data date and project finish date.

C. Other Documents: In order to determine the amount of the alleged delay and if it is compensable, the Contractor must provide all backup documentation relevant to the issue and as required by the Engineer. This documentation must include copies of such items as: purchase orders; delivery schedules; correspondence; memoranda of telephone calls; force account daily worksheets (initialed by the Inspector); payroll data; estimating (bid) worksheets; and any other materials which may be requested by the Engineer.

D. Procedure: Only after receipt of sufficient documentation will the Engineer analyze each alleged delay and determine if it is supported or refuted. If supported, the Engineer will determine if it is excusable or non-excusable, compensable or non-compensable. If the Engineer determines that the delay did not affect the Project Completion, the as-planned schedule, which has been updated to the date of the alleged delay, must be revised to indicate this. If the Engineer determines the delay

did occur but was N/N, then no time extension will be granted. It is imperative that an actualized schedule be submitted as soon as the occurrence of the alleged delay is known. In no event will the Contractor submit an actualized updated schedule later than 60 days after the occurrence of the alleged delay becomes known.

If the Engineer determines the delay did occur and was excusable but, due to a reason listed in section I.B. is non-compensable, he/she will determine the length of the E/N delay and prepare a Change Order to add that time to the Contract. The Engineer's decision will be final.

If the Engineer determines the delay was excusable and compensable, he/she will determine the length of the E/C delay and proceed to review the Contractor's damage calculations in accordance with Section III. The Engineer will check the Contractor's calculations, review the backup documentation provided, and prepare a Change Order to cover both the additional compensation and the time extension. The Engineer's decision on both the time extension and additional compensation for the delay will be final.

If the issue involves a concurrent delay, the Engineer will analyze available data to determine the portions which are E/C, E/N, and/or N/N as described above. The Engineer will proceed to determine the length of E/C delay and verify the Contractor's delay damage calculations, if any are provided. Upon completion of this review, the Engineer will prepare a Change Order for the Contractor's review and signature. The Engineer's decision regarding excusable delay and additional compensation for the delay is final.

The amount of time the Engineer will require to analyze the alleged delay(s) will depend upon the Engineer's workload, the complexity of the delay analysis, availability of supporting data, extent of cooperation by the Contractor, and other factors beyond the Engineer's control. It is entirely possible other delay(s) may occur while the Engineer is analyzing particular claim for delay(s). The Engineer's failure to respond to the Contractor in a set period of time will not be used as the basis for a further delay claim or as justification for extending and existing delay claim. The time required for delay analysis by the Engineer will not be counted against the time allotted for processing Final Payment as required by (MAG Section 109.7(B)) or the release of retention and Final Payment as prescribed by A.R.S. Arizona Revised Statutes §34-221.

III. CALCULATING MONETARY DELAY DAMAGES:

Additional compensation for delay, when authorized by the Engineer, will be calculated in accordance with MAG Section 109.5 ACTUAL COST WORK with the following exceptions:

A. No additional compensation or other monetary damages will be awarded or paid for any loss of anticipated profits by the Contractor, Subcontractors or Suppliers.

B. No additional compensation or other monetary damages will be awarded for home office overhead or non-project general conditions of the Contractor, Subcontractors or Suppliers.

C. Equipment:

1. Contractor-owned equipment rate calculations must be computed in accordance with Section 109.04(D)(3), Arizona Department of Transportation "Standard Specifications for Road and Bridge Construction," 2008 or latest edition and as modified herein. Year and regional adjustment factors must be based on the most recent publications of the Rental Rate Blue Book for Construction Equipment, published by the Equipment Guide-Book Company, San Jose, CA, same as provided by ADOT and in print as of the date of alleged delay. In no event will the compensation for Contractor-owned equipment exceed the purchase price, including tax, paid by the Contractor for the equipment. Compensation will not be allowed for small tools or equipment that show a daily equipment rental rate of less than $5.00 per day or for unlisted equipment that has a value of less than for hundred dollars ($400.00).
2. For leased and rented equipment or equipment not otherwise listed in the Blue Book, rental contracts, or other supporting data will be used to establish the hourly rate. No hourly operating expense will be allowed for delay on standby equipment. In no case will equipment be considered for rental which exceeds the hourly rate for the first eight hours and the daily rate divided by eight for all additional hours as compared with similar equipment listed in the Blue Book. The hourly standby rate must be computed as the lesser of:

    a. Dividing the monthly invoice or rental value by 176 hours per month when the equipment is utilized by the Contractor for more than three weeks;

    b. Dividing the monthly invoice or rental value by 40 hours per week when the equipment is utilized by the Contractor for more than three days.

    In no event will compensation be paid for delay at more than 8 hours per day or 40 hours per week.

3. Except for vehicles used by supervisory personnel, all equipment will be paid at the "standby" rate during the delay period.

4. Equipment brought solely to mitigate the delay (such as pumps, light plants, etc.) may be paid in accordance with ADOT section 109.04(D) (3).

5. The Blue Book regional adjustment will apply in determining rental rates.

D. Material:

Allowable material charges may include, in addition to material incorporated in the work material used to mitigate the delay such as barricades, plates, shoring, cold mix, etc. Except in emergencies the Contractor will not employ such material without the prior written approval of the Engineer.

E. Labor:

1. Except for Supervisory Personnel (Superintendent, Project Engineer, and Foremen), labor wages will not be paid after the first one-half day of

claimed delay or impact. It is expected the Contractor will reassign or layoff unneeded employees.

2. For Foreman wages to be included, that Foreman must have been actively employed on the project prior to the commencement of the delay and be directly responsible for the activity being delayed.

3. Labor burden must be actual amounts incurred but must not exceed the ADOT approved rate.

F. All costs (equipment, material, and labor) must be substantiated by the City of Chandler's Daily Work Reports.

IV. DOCUMENT REQUIRED FOR CLAIM ANALYSIS:

For purposes of reviewing the Contractor's request for additional compensation, it will be required that the Contractor submit the following listed information. Information requested must be prepared on forms which are substantially similar to the City of Chandler's Daily Work Report form, a copy of which is attached as an exhibit.

A. Labor:

For each employee, laborer, and foreman, for which compensation is requested: Name, classification, dates of work performed, daily hours worked, total hours worked, labor rates, labor burden rates, overtime or premium time charges. Further, the Contractor must make available for inspection and copying to the Engineer the following listed documentation.

1. Certified payroll reports for the period of work claimed.
2. Accounting of Fringe Benefits – certified by a CPA.
3. Contractor's and Subcontractor's daily field reports and daily diaries.

B. Materials:

For all materials for which compensation is requested, if any, total quantities of materials, prices, extensions and transportation costs must be provided on a daily basis. Further, the Contractor must make available for inspection and copying to the Engineer the following listed documentation.

1. Invoices for all materials incorporated.
2. Weigh tickets.
3. Purchase orders.
4. Delivery schedules.
5. Quotes or proposals from manufacturers or supplier.
6. Freight bills, Bills of Lading, or other documentation to show transportation costs.
7. Restocking charges-invoices from vendor.

C. Equipment:

For all equipment, the Contractor must provide the Engineer with the designation, dates and hours of usage, dates and hours of standby, if any, daily hours, total hours,

rental rates and extension for each unit of equipment and machinery. Rental rates will be as established in Section III. Further, the Contractor must make available for inspection and copying to the Engineer the following listed documentation.

1. Owned:
   a. Purchase contracts(s).
   b. Depreciation schedule(s).
   c. Invoices for fuel, lube, repairs and other operating costs.

2. Leased:
   a. Lease agreement with hourly rate, overtime rate, double shift rate, etc.
   b. Invoices or other documentation showing hours worked on a daily basis.

D. Subcontractors/Owner-Operators:

In the event the Contractor submits a claim which includes requests for compensation for Subcontractors of Owner-Operators, the same information requested of the Contractor must be provided by the Subcontractor/Owner-Operator. Further, the Contractor must make available for inspection and copying to the Engineer the following listed documentation.

1. Bid/Estimate work sheets and/or spreadsheets.
2. Subcontract Agreements or Agreements with Owner-Operator.
3. All invoices and billing statements received from the Subcontractor/Owner-Operator which relates to the amount requested.

E. Miscellaneous:

Further, the Contractor must make available for inspection and copying to the Engineer the following listed documentation.

1. Evidence of payment for bonds and insurance premiums (MAG 109.5.6).
2. Taxes – unless the Contractor can show otherwise, taxes are reimbursable at 65% of the total cost (less bonds and insurance).

V. TIME LIMIT ON SUBMISSIONS OF CLAIM FOR DELAY OR IMPACT DAMAGES:

No claims for delay or impact damages will be considered or allowed more than 45 days after the event or occurrence which the Contractor claims gives rise to the delay or impact. In no event will a claim for delay or impact damages be considered after submission by the Contractor of the Final Payment Request.

COST REDUCTION INCENTIVE PROPOSALS FOR DESIGN BID BUILD CONTRACTS

The Contractor may submit to the Engineer proposals for modifying the Plans, Specifications, or other requirements of the Contract for the sole purpose of reducing the total cost of Project construction. The proposals must not impair in any manner the essential functions or characteristics of the project; including but not limited to service life, economy of operations, ease of maintenance, desired appearance, compatibility with existing or planned equipment, standardization of systems, or design and safety standards.

It must not be inferred from this Policy that the Engineer is required to consider any proposal submitted.

Submissions that propose changes in the basic design of a bridge, propose changes in pipe line size, materials, bedding conditions, pipe specifications; or that propose any change in pavement design will not be considered.

Proposals submitted pursuant to this Policy will be identified as Cost Reduction Incentive Proposals. They must be submitted in writing and, at a minimum, contain the following.

1. Complete the attached or similar cost reduction incentive proposal form.

2. A description of both the existing Contract Requirements for performing the work and the proposed changes.

3. All Engineering Drawings and computations necessary for the thorough and expeditious evaluation.

4. An itemization of the existing Contract Requirements that must be changed if the Proposal is adopted and a recommendation as to the manner in which the change should be made.

5. A detailed estimate of the cost of performing the Work under the existing Contract and under the proposed changes, including the cost of developing and implementing the changes.

6. The Contract items affected by the proposed changes and any variations in quantities resulting from the changes.

7. An objective estimate of any effects the proposal will have on collateral cost to the City, costs of related items, and cost of maintenance and operation.

8. A statement as to the effect that the Proposal will have on the time for the completion of the Project.

9. A statement as to the time by which a Change Order adopting the Proposal must be executed or when the Engineer must have given verbal approval.

Proposals will be processed expeditiously; however, the City will not be liable for any delay in acting upon any Proposal nor for any failure to accept any Proposal pursuant to this Special Provision.

The Engineer will be the sole judge of the acceptability of a Proposal and of the estimated net savings in construction costs from the adoption of all or any part of the Proposal. The Contractor will be notified in writing by the Engineer as to whether his/her Proposal has been accepted. The decision by the Engineer is final.

When the City deems such action to be appropriate, it reserves the right to require the Contractor to share equally in the cost to the City of investigating, evaluating, and processing the proposal as a condition for the consideration of such Proposal. Such cost must be shared whether the Proposal is accepted or rejected. When such a condition is imposed, the City will estimate these costs and the Contractor must indicate his acceptance thereof in writing. Such acceptance will authorize the City to deduct the Contractor's share of the costs from any monies due or that may become due to the Contractor under the Contract.

If the Contractor's Proposal is accepted in whole or in part, the necessary Contract Modifications and Contract Price Adjustments will be affected by the execution of a Change Order which will specifically state that it is executed pursuant to this Special Provision.

The Contractor must continue to perform the work in accordance with the requirements of the Contract until a Change Order incorporating the Proposal has been executed or until he/she has been given verbal approval by the Engineer that his/her Proposal has been accepted. If the Change Order has not been executed or he/she has not been given verbal approval on or before the date specified on the attached cost reduction incentive proposal form or on or before such other date as the Contractor may have subsequently specified in writing, the Proposal may be deemed to be rejected.

The executed Change Order will incorporate the changes in the Plans, Specifications, or other requirements of the Contract which are necessary to permit the Proposal, or such part of it which has been accepted, to be put into effect, and will include any condition – upon which the City's approval thereof is based, if such approval is conditional. The executed Change Order may also extend the time for the completion of the Contract if such an extension has been deemed to be warranted by the Engineer as a result of his evaluation of the Proposal.

The executed Change Order will also establish the estimated net savings in the cost of performing the Work attributable to the Proposal effectuated by the Change Order. In determining the net savings, the right is reserved to the Engineer to disregard the Contract bid prices if, in his/her judgment, such prices do not represent a fair measure of the value of the Work to be performed or to be deleted. The net savings will be established by determining the Contractor's cost of performing the Work, taking into account his/her cost of developing the Proposal and implementing the change, and reducing this amount by any ascertainable collateral costs to the City. The executed Change Order may provide that the Contractor be paid 50 percent of the estimated net savings amount.

The executed Change Order may also provide for the adjustment in Contract prices. Contract prices may be adjusted by subtracting the City's share of the accrued net savings.

The amount specified to be paid to the Contractor in the executed Change Order which effectuates a Cost Reduction Proposal will constitute full compensation to the Contractor for the Cost Reduction Proposal and the performance of the work thereof pursuant to the said Change Order.

Upon acceptance of a Cost Reduction Incentive Proposal, any restrictions imposed by the

Contractor on its use or on disclosure of the information will become void, and the City thereafter will have the right to use all or any part of the Proposal without obligation or compensation of any kind to the Contractor.

COST REDUCTION INCENTIVE PROPOSAL FORM

TO: CIP City Engineer

FROM:

PROJECT NAME: VETERAN'S MEMORIAL PHASE II

PROJECT NUMBER: PR2004.401

DATE:

Summary of Change (Brief description of proposed change including advantages and disadvantages):

ESTIMATED COST SUMMARY (Attached detailed estimate):

A.	Original Cost:	$
B.	Proposed Cost:	$
C.	Construction Savings (A-B):	$
D.	Gross Savings (Included OH %, Bond %)	$
E.	Contractor Implementing	$
F.	City Implementing Cost:	$
	Reduction in Contract Price (C+D-E-F) x 50%:	$

Date by which a Change Order must be issued so as to obtain maximum cost reduction:

CITY OF CHANDLER, ARIZONA
PUBLIC WORKS & UTILITIES DEPARTMENT

CONTRACTOR'S AFFIDAVIT REGARDING SETTLEMENT OF CLAIMS

_____, Arizona
Date _____

Project Name: VETERAN'S MEMORIAL PHASE II
City Project No.: PR2004.401

To the City of Chandler, Arizona

Gentlemen:

This is to certify that all lawful claims for materials, rental of equipment and labor used in connection with the construction of the above project, whether by subcontractor or claimant in person, have been duly discharged.

The undersigned, for the consideration of $_____, as set out in the final pay estimate, as full and complete payment under the terms of the contract, hereby waives and relinquishes any and all further claims or right of lien under, in connection with, or as a result of the above described project. The undersigned further agrees to indemnify and save harmless the City of Chandler against any and all liens, claims or liens, suits, actions, damages, charges and expenses whatsoever, which said City may suffer arising out of the failure of the undersigned to pay for all labor performances and materials furnished for the performance of said installation.

Signed and dated at _____, this _____ day of _____ 20____.

_____
CONTRACTOR

By _____

STATE OF ARIZONA)
) SS
COUNTY OF MARICOPA)

The foregoing instrument was subscribed and sworn to before me this _____ day of _____ 20 _____.

_____
Notary Public

_____
My Commission Expires

PERFORMANCE BOND

ARIZONA STATUTORY PERFORMANCE BOND
PURSUANT TO TITLES 28, 34, AND 41, ARIZONA REVISED STATUTES
(Penalty of this bond must be 100% of the Contract amount)

KNOW ALL MEN BY THESE PRESENTS THAT:_____

(hereinafter "Principal"), and _____ (hereinafter "Surety"), a corporation organized and existing under the laws of the State of _____ with its principal office in the City of _____, holding a certificate of authority to transact surety business in Arizona issued by the Director of Insurance pursuant to Title 20, Chapter 2, Article 1, as Surety, are held and firmly bound unto _____(hereinafter "Obligee") in the amount of _____ (Dollars) ($_____), for the payment whereof, Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Obligee, dated

the _____ day of _____, 20___ for construction of **VETERAN'S MEMORIAL PHASE II, PR2004.401** which contract is hereby referred to and made a part hereof as fully and to the same extent as if copies at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal faithfully performs and fulfills all the undertakings, covenants, terms, conditions and agreements of the contract during the original term of the contract and any extension of the contract, with or without notice of the Surety, and during the life of any guaranty required under the contract, and also performs and fulfills all the undertakings, covenants, terms, conditions, and agreements of all duly authorized modifications of the contract that may hereafter be made, notice of which modifications to the Surety being hereby waived, the above obligation is void. Otherwise it remains in full force and effect.

PROVIDED, HOWEVER that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, and all liabilities on this bond will be determined in accordance with the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the same extent as if it were copied at length in this Contract.

The prevailing party in a suit on this bond may recover as part of the judgment reasonable attorney fees that may be fixed by a judge of the court.

Witness our hands this _____ day of _____, 20__.

_____
PRINCIPAL SEAL

_____
AGENT OF RECORD

By _____

_____
SURETY SEAL

_____
AGENT ADDRESS

PAYMENT BOND

ARIZONA STATUTORY PAYMENT BOND
PURSUANT TO TITLES 28, 34, AND 41, OF THE ARIZONA REVISED STATUTES
(Penalty of this Bond must be 100% of the Contract amount)

KNOW ALL MEN BY THESE PRESENTS THAT:_____

(hereinafter "Principal"), as Principal, and _____(hereinafter "Surety"), a corporation organized and existing under the laws of the State of _____ with its principal office in the City of _____, holding a certificate of authority to transact surety business in Arizona issued by the Director of the Department of Insurance pursuant to Title 20, Chapter 2, Article 1, as Surety, are held and firmly bound unto _____ (hereinafter "Obligee") in the amount of _____ (Dollars) ($_____), for the payment whereof, the Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Obligee, dated the _____ day of _____, 20___ for construction of **VETERAN'S MEMORIAL PHASE II, PR2004.401** which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal promptly pays all moneys due to all persons supplying labor or materials to the Principal or the Principal's subcontractors in the prosecution of the work provided for in said contract, this obligation is void. Otherwise it remains in full force and effect.

PROVIDED, HOWEVER that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2 Arizona Revised Statutes, and all liabilities on this bond will be determined in accordance with the provisions, conditions and limitations of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the same extent as if it were copied at length in this Contract.

The prevailing party in a suit on this bond may recover as part of the judgment reasonable attorney fees that may be fixed by a judge of the court.

Witness our hands this _____ day of _____, 20__.

_____
PRINCIPAL SEAL

_____
AGENT OF RECORD

By _____

_____
SURETY SEAL

_____
AGENT ADDRESS

DISPUTE RESOLUTION

A. INFORMAL DISPUTE RESOLUTION

The parties to the Contract agree that time is of the essence in relation to performance of the Contract and completion of the Project, therefore any and all disputes in relation to the Contract will initially be referred to the Project Manager, the Design Professional Representative and/or the Contractor Representative as applicable to the dispute, for immediate resolution. If, after good faith efforts to reach a resolution, none is reached, any party to the dispute may submit the dispute to the Dispute Resolution Representative ("DRR") process set forth below, which is intended to be an expedited process.

B. DISPUTE RESOLUTION REPRESENTATIVE ("DRR") PROCESS

1. The Parties under the Contract agree that all claims and disputes in relation to the Project which are not resolved in the ordinary course of the Project ("Claim" or "Claims") will, as a prerequisite to any mediation, or litigation of the Claim, first be submitted for resolution between the designated Dispute Resolution Representatives of the Parties as set forth herein (the "DRR Process").

2. The DRR Process will be initiated through service of a DRR Notice as set forth below:

   a. For claims by the Contractor or the Design Professional, the DRR Process will be initiated by the party asserting the claim serving written notice on the City setting forth in detail: (i) the basis for the claim; (ii) the effect of the Claim upon the construction of, and/or Project Schedule for, the Project;
   (iii) the specific relief requested, the amount thereof, and how such was calculated; (iv) the parties involved in the Claim, and how they are involved; (v) the specific contract provisions in the Contract Documents (including, if applicable, drawings and specifications) which apply; and (vi) efforts made to date to resolve the Claim.

   b. For claims by the City, the DRR process will be initiated by the City providing written notice to the other parties of the basis and amount of its claim, the parties involved in the Claim, and how they are involved, the provisions in the Contract Documents that apply, and the relief requested.

   c. The DRR Notice will be hand-delivered and e-mailed to the other parties' designated Dispute Resolution Representatives.

3. The other parties will respond in writing to the DRR Notice ("DRR Response") within ten (10) calendar days of receipt of the DRR Notice, setting forth those items set forth in the DRR Notice that they agree with, dispute, and/or have questions concerning. The DRR Response will be hand-delivered and e-mailed to the other parties' Dispute Resolution Representatives.

4. The designated Dispute Resolution Representatives for the Parties to the claim will then meet as soon as possible and in any event within twenty (20) calendar days of submission of the DRR Notice (regardless of whether a DRR Response has been submitted by all parties involved in the dispute), at a mutually agreed upon time and place, to attempt to resolve the Claim based upon the DRR Notice and DRR Response.

5. At any time after the first meeting required above, either party may terminate the DRR Process by written notice to the other party.

6. The parties may agree, in writing, to extend or modify the time limits or other provisions of the DRR process in relation to a specific pending Claim.

7. Unless otherwise designated in a written notice to the other parties, the City and the representatives of the Contractor and of the Design Professional will act as the parties' designated Dispute Resolution Representatives.

8. If a resolution of the Claim is reached, that resolution must be set forth in writing and must be signed by the Parties' designated Dispute Resolution Representative. If the resolution involves a change in any Contract Documents, the Contract Price, the Project Schedule, or any other change requiring a written Change Order or Amendment, the parties must execute an appropriate written Change Order or Amendment pursuant to the terms of the Contract Documents.

C. MEDIATION

1. Unless extended by written agreement of the parties involved in the dispute, any Claim not resolved through the DRR process set forth above within five (5) calendar days after the meeting required under B (4) above, or after the DRR is terminated pursuant to ¶ B (5) above, whichever is earlier, will be submitted to mediation as a condition precedent to litigation by either party.

2. The mediation will be commenced by written demand upon the other party for mediation. If the parties cannot agree upon a mediator within ten (10) calendar days of the written demand, either party may make a request to the Civil Presiding Judge of the Maricopa County Superior Court to appoint a mediator. The mediation will occur within forth (40) calendar days of the written demand for mediation, unless the parties agree, in writing, to a longer period of time.

3. The qualifications for the mediator will be that he/she be: (a) an experienced mediator, arbitrator or litigator of construction disputes; and (b) having engaged a significant portion of his/her time involving and/or resolving construction disputes for at least the past five (5) years.

4. Each party will provide to the other party and the mediator all of the information and documentation required under B(1) and (2) above, together with any additional information and documentation which the party believes relevant. In addition, the parties will exchange, and provide to the mediator such additional memoranda, information and/or documentation, as the

mediator may request, and in the form and at such times, as the mediator may direct.

5. The parties will share the mediator's fee and any filing fees equally. The mediation will be held in Chandler, Arizona, unless another location is mutually agreed upon. Agreements reached in mediation will be specifically enforceable in any court having jurisdiction thereof.

D. LITIGATION

Any claim arising out of or related to the Contract, except Claims relating to aesthetic effect and except those claims waived as provided for in the Contract Documents, must be resolved through litigation in the Maricopa County, Arizona Superior Court.

Chandler • Arizona

CITY OF CHANDLER, ARIZONA
PUBLIC WORKS & UTILITIES DEPARTMENT

CERTIFICATE OF COMPLETION

PROJECT NAME:	**VETERAN'S MEMORIAL PHASE II**		
CITY PROJECT NO.:	**PR2004.401**		
If Federally Funded:			
FEDERAL NO.:	**PR2004.401**	**TRACS NO:**	**PR2004.401**

(This section to be completed by Prime)
I HEREBY CERTIFY THAT ALL GOODS AND/OR SERVICES REQUIRED BY CITY OF CHANDLER FOR THIS PROJECT HAVE BEEN DELIVERED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND BID SPECIFICATIONS AND ALL ACTIVITIES REQUIRED BY THE CONTRACTOR UNDER THE CONTRACT HAVE BEEN COMPLETED AS OF THE COMPLETION DATE LISTED HERE:

COMPLETION DATE:	

PRIME

FIRM NAME:			
PRINCIPAL:			
TITLE:			
SIGNATURE:		DATE:	

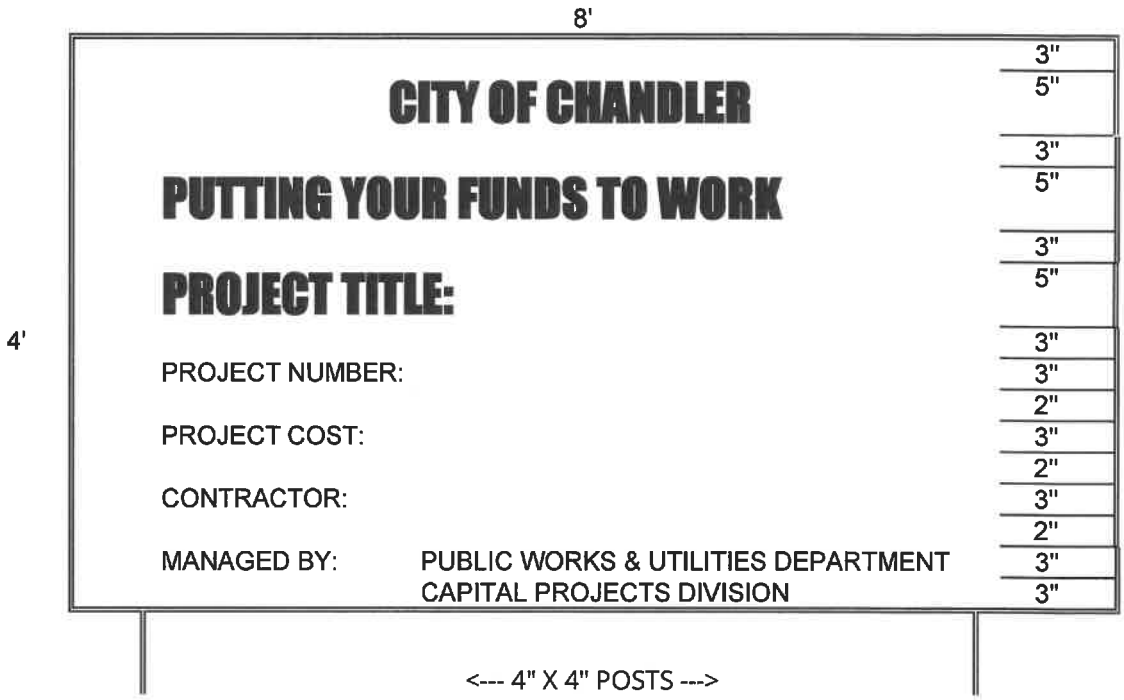
CERTIFIED BY ENGINEER/CONSULTANT:

FIRM NAME:			
SIGNATURE:		DATE:	

PROJECT ACCEPTED BY CITY OF CHANDLER:

FIRM NAME:			
SIGNATURE:		DATE:	

CONSTRUCTION SIGN DETAIL



NOTES:

SIGN(S) MUST BE FURNISHED AND ERECTED PRIOR TO COMMENCEMENT OF CONSTRUCTION. POSTS MUST BE ANCHORED A MINIMUM OF TWO FEET INTO THE GROUND. BOTTOM OF SIGN MUST BE A MINIMUM OF FOUR FEET ABOVE THE GROUND.

TYPICAL PROJECT IDENTIFICATION SIGN FOR GENERAL PROJECTS MUST BE NON-REFLECTORIZED GREEN BACKGROUND, AND NON-REFLECTORIZED WHITE LETTERS AND NUMERALS.

ONE SIGN MUST BE ERECTED FOR BUILDINGS AND OTHER LIMITED AREA SINGLE SITES. FOR MULTIPLE SITES, ONE SIGN MUST BE ERECTED AT EACH SITE.

FOR LINEAR PROJECTS ONE HALF MILE OR LONGER, PLACE ONE SIGN AT EACH END OF THE PROJECT.

COST OF THE WORK

(APPLICABLE SOLELY TO CONSTRUCTION MANAGER AT RISK AND JOB ORDER CONTRACTING)

SECTION 1 – COSTS TO BE REIMBURSED

1.1 Cost of the Work

The term Cost of the Work will mean costs necessarily incurred by Contractor in the proper performance of the Work. Such costs must be at rates not higher than the standard paid at the place of the Project except with prior consent of City. The Cost of the Work will include only the items set forth in this Section 1.

1.2 Labor Costs

1.2.1 Wages of construction workers directly employed by the Contractor to perform the construction of the Work at the site or, with City's approval, at off-site workshops. Cost to be reimbursed will be the actual wages paid to the individuals performing the work.

1.2.2 Wages or salaries of the Contractor's supervisory and administrative personnel when stationed at the site with City's approval. No Contractor personnel stationed at the Contractor's home or branch offices will be charged to the Cost of the Work. Non-field office based Contractor management and support personnel are expected to provide service and advice from time to time throughout the job and his/her time devoted to Project matters is considered to be covered by the Contractor's Fee.

1.2.3 Wages and salaries of Contractor's supervisory or administrative personnel who would normally be stationed at the field office in accordance with Section 1.2.2 but who become engaged, at factories, workshops or on the road, in expediting the production or transportation of materials or equipment required for the Work, but only for that portion of his/her time required for the Work. Employee bonuses and/or costs associated with Employee Stock Ownership Plans ("ESOP") will not be considered reimbursable labor or labor burden costs and will be considered non-reimbursable costs considered to be covered by the Contractor's Fee.

1.2.4 Costs paid or incurred by Contractor for taxes, insurance, contributions, assessments and benefits required by law or collective bargaining agreements and, for personnel not covered by such agreements, customary benefits such as sick leave, medical and health benefits, holiday, vacations and pensions, provided such costs are based on wages and salaries included in the Cost of the Work under Subparagraphs 1.2.1 through 1.2.3.

1.2.4.1 Cost of the Work will include the actual net cost to Contractor for worker's compensation insurance attributable to the wages chargeable to the Cost of Work per this Agreement. The actual net cost of worker's compensation must take into consideration all cost adjustments due to experience modifiers, premium discounts, policy dividends, retrospective rating plan premium adjustments, assigned risk pool rebates, any applicable weekly maximums, etc. Contractor may charge an estimated amount for worker's compensation insurance costs, but will make appropriate cost adjustments to actual costs within 45 days of receipt of actual cost adjustments from the insurance carrier.

1.2.4.3 Overtime wages paid to salaried personnel (if approved in advance in writing by City) will be reimbursed at the actual rate of overtime pay paid to the individual. No time charges for overtime hours worked on the Project will be allowed if the individual is not paid for the overtime worked.

1.2.4.4 Any overtime premium or shift differential expense to be incurred by Contractor for hourly workers will require City's advance written approval before the incremental cost of the overtime premium or shift differential will be considered a reimbursable cost. If the Contractor is required to work overtime as a result of an inexcusable delay or other coordination problems caused by the Contractor or anyone he/she is responsible for, the overtime premium and/or shift differential expense portion of the payroll expense and related labor burden costs will be considered as cost not to be reimbursed.

1.2.4.5 Reimbursable labor burden costs will be limited to payroll taxes, worker's compensation insurance, the employer's portion of union benefit costs for union employees working on the Project, and the actual verifiable fringe benefit costs incurred by Contractor for non-union individuals working on the Project subject to the following maximum percentages for the following reimbursable non-union fringe benefit costs. The following maximums (as a percentage of reimbursable actual wages by individual) will apply for each of the following types of fringe benefit costs specifically attributable to each of the non-union personnel working on the Project:

• Medical Insurance, Dental, Life & AD&D Insurance:	12.00%
• Holiday, vacation and other paid time not worked:	10.00%
• Pension Plan Contributions to Vested Employee Account, Simplified Employee Pension Plans, or 401K matching plans (Note: ESOP related costs are covered by the Contractor Fee)	10.00%

For non-union personnel, no other fringe benefit costs (other than the three specific categories listed immediately above, will be considered reimbursable Cost of Work. Any labor burden costs that are in excess of the amounts considered reimbursable or are otherwise not considered reimbursable under the terms of this agreement are intended to be covered by the Contractor Fee.

1.3 Subcontract Costs

1.3.1 Payments made by Contractor to Subcontractors in accordance with the requirements of the subcontracts.

1.3.2 For Scope of Work Bid Packages typically performed by Subcontractors, Contractor may "self- perform" such work on an actual cost basis subject to an agreed upon Guaranteed Maximum Price for the "self-performed work". The Contractor must, unless agreed to by City in writing, bid his/her proposed guaranteed Maximum Price for the work to be "self-performed" against at least three other interested trade Contractors. All savings under any such Subcontract for "self-performed work" must be applied to reduce the Cost of Work under the Contract and the Guaranteed Maximum Price. For purposes of defining "self-performed work" subject to this provision, any division of Contractor, or any separate Contractor or Subcontractor that is partially owned or wholly owned by the Contractor or any of his/her employees or employee's relatives will be considered a related party entity

and will be subject to this provision regarding "self-performed work". No self-performed work will be allowed to be performed on a Fixed Price basis.

1.3.3 Contractor (with respect to its Suppliers, Subcontractors and all lower tier Subcontractors) must provide City advance written notice and must obtain City's approval for any proposed Subcontract Change Order, Material Purchase Order, or other financial commitment in an amount in excess of $5,000 prior to placing such order or entering into such agreement (regardless of whether or not any such commitment will affect the prime contract Guaranteed Maximum Cost). It is agreed that sums applicable to any Subcontract Change Order, Purchase Order or other financial commitment entered into in violation of the above notice and approval requirement will not be included in the amounts owning to Contractor, Subcontractors or Suppliers whether as Costs of the Work or as reasonable termination costs in the event of termination.

1.4 Costs of Material and Equipment Incorporated in the Completed Construction

1.4.1 Costs, including transportation and storage, of materials and equipment incorporated or to be incorporated in the completed construction.

1.4.2 Costs of materials described in the preceding Subparagraph 1.4.1 in excess of those actually installed to allow for reasonable waste and spoilage. Unused excess materials, in any, will become City's property at the completion of the Work or, at City's option, may be sold by the Contractor. Any amounts realized from such sales must be credited to City as a deduction from the Cost of Work.

1.4.3 Proceeds from the sale of recyclable materials, scrap, waste, etc. will be credited to job cost.

1.5 Costs of Other materials and Equipment, Temporary Facilities and Related Items

1.5.1 Costs, including transportation and storage, installation, maintenance, dismantling and removal of materials, supplies, temporary facilities, machinery, equipment and hand tools not customarily owned by construction workers, that are provided by the Contractor at the site and fully consumed in the performance of the Work; and cost (less salvage value) of such items if not fully consumed, whether sold to others or retained by Contractor. Cost for items previously used by Contractor will mean fair market value.

1.5.2 Rental charges for temporary facilities, machinery, equipment, and hand tools not customarily owned by construction workers that are provided by Contractor at the site, whether rented from Contractor or others, and costs of transportation, installation, minor repairs and replacements, dismantling and removal thereof. Rates and quantities of equipment rented will be subject to City's prior written approval.

1.5.2.1 The Projected usage for each piece of equipment to be rented for use on the Project and the estimated total rentals must be considered by Contractor before the piece of equipment is rented so that an appropriate rent versus buy decision can be made. Purchased equipment must be considered "job owned". At the completion of the Project, Contractor must transfer title and possession of all remaining job-owned equipment to City, or Contractor may keep any such equipment for an appropriate fair market value credit to job cost, which will be mutually agreed to by City and Contractor.

1.5.2.2 Each piece of equipment to be rented must have hourly, daily, weekly and monthly rates and the most economical rate available will be reimbursed based on the circumstances of actual need and usage of the piece of equipment while it is stationed at the jobsite. When the piece of equipment is no longer needed for the work, no rental charges will be reimbursed if the piece of equipment remains at the jobsite for the convenience of Contractor.

1.5.2.3 Equipment Rental Rates

1.5.2.3.1 Compensation for equipment used on the Project will be paid in accordance with the Equipment Plan submitted by Contractor in the accepted GMP Proposal and no payments will be made in excess of the rates set forth in the Equipment Plan, or actual documented costs, whichever is less.

1.5.2.3.2 All equipment rental rates and costs are subject to City's right to audit when submitted as part of Equipment Plan and/or at any time during the Project.

1.5.2.4 The aggregate rentals chargeable for each piece of Contractor owned tools or equipment must not exceed 50% of the fair market value of such equipment at the time of its commitment to the Work. The original purchase price and date of purchase of the equipment will be documented with a copy of the purchase invoice for the piece of equipment. Such aggregate limitations will apply and no further rentals will be charged even if a piece of equipment is taken off the job and is later replaced by a similar piece of equipment. For purposes of computing the aggregate rentals applicable to aggregate rental limitations, rental charges for similar pieces of equipment will be combined if the pieces of equipment were not used at the same time.

1.5.2.5 Fair market value for used material and equipment as referred to in the Contract Documents will mean the estimated price a reasonable purchaser would pay to purchase the used material or equipment at the time it was initially needed for the job. Note: This is usually lower than the price a reasonable purchaser would pay for similar new construction material or construction equipment.

1.5.2.6 All losses resulting from lost, damaged or stolen tools and equipment will be the sole responsibility of Contractor, and not City, and the cost of such losses will not be reimbursable under the Contract.

1.5.2.7 Contractor will be required to maintain a detailed equipment inventory of all job-owned equipment (either purchased and charged to job cost or job-owned through aggregate rentals) and such inventory must be submitted to City each month. For each piece of equipment, such inventory should contain at a minimum (1) original purchase price or acquisition cost (2) acquisition date (3) approved Fair Market Value at the time the piece of equipment was first used on the job and (4) final disposition.

1.5.2.8 All costs incurred for minor maintenance and repairs will be reimbursed at actual cost. Such costs include routine and preventative maintenance, minor repairs and other incidental costs. Repairs and/or replacement of a capital nature are considered to be covered by the rental rates. Major repairs and overhauls are not considered routine and ordinary; consequently such costs are not reimbursable and are intended to be covered by the rental

rates.

1.5.3 Costs of removal of debris from the Site.

1.5.4 Costs of document reproductions, facsimile transmissions and long-distance telephone calls, postage and parcel delivery charges, telephone service at the site and reasonable petty cash expenses of the site office.

1.5.5 That portion of the reasonable expenses of Contractor's personnel incurred while traveling in discharge of duties connected with the Work.

1.5.5.1 No travel expenses will be reimbursed to Contractor's representatives unless Project related travel required them to travel to a destination more than 100 miles from the Project location. Any travel involving airfare will require advance written approval by an authorized City's representative.

1.5.6 Costs of materials and equipment suitably stored off the site at a mutually acceptable location, if approved in advance by the City.

1.5.7 Reproduction costs will be the actual costs of reproduction subject to a maximum of five cents ($.05) per square foot for prints and a maximum of five cents ($.05) per 8 ½ by 11-inch page for offset print or photo copied contract documents, specifications, etc. Telephone costs will be the actual costs paid to the third party telephone company for the field office telephone.

1.6 Miscellaneous Costs

1.6.1 That portion of insurance and bond premiums that can be directly attributed to the Contract. The City will reimburse Contractor for contractually required bond at time of first pay application for GMP and Cost-Based contracts upon receipt of proof of payment from the Contractor. If the Contractor completes Work for less than the Contract Price, Contractor must credit the City a pro- rated amount for the unused portion of the bond payment

1.6.1.1 Contractor's actual cost for insurance will be considered to be included within the Maximum limit for General Conditions Costs. All premiums for any insurance and bonds required for the Project must reflect the net actual costs to Contractor after taking into consideration cost adjustments due to experience modifiers, premium discounts, policy dividends, retrospective rating plan premium adjustments, assigned risk pool rebates, refunds, etc.

1.6.1.2 The amount to be reimbursed to Contractor for all contractually required insurance will be actual costs not to exceed a total of 2% of the Contract Value, unless Contractor establishes to City's satisfaction that the actual cost is higher and City agrees to such actual higher cost in writing. If Contractor's cost of contractually required insurance is greater than the amount agreed to be reimbursed per this Contract Provision, the difference will be considered to be covered by the Contractor's Fee. The City will reimburse Contractor for contractually required insurance on a monthly basis for GMP and Cost-Based contracts. If Contractor can demonstrate substantial savings by paying for all insurance in advance, the City may agree to reimburse all insurance costs at time of first pay application

for GMP and Cost-Based contracts with proof of payment from Contractor.

1.6.2 Sales, use or similar taxes imposed by a governmental authority that are related to the Work.

1.6.3 Fees and assessments for the building permit and for other permits, licenses and inspections for which Contractor is required by the Contract Documents to pay.

1.6.4 Fees of laboratories for tests required by the Contract Documents, except those related to defective or nonconforming Work and which do not fall within the scope of ¶ 1.7.3 below.

1.6.5 Royalties and license fees paid for the use of a particular design, process or product required by the Contract Documents; the cost of defending suites or claims for infringement of patent rights arising from such requirement of the Contract Documents; and payments made in accordance with legal judgments against Contractor resulting from such suites or claims and payments of settlements made with City's consent. However, such costs of legal defenses, judgments and settlements must not be included in the calculation of the Contractor's Fee or subject to the Guaranteed Maximum Price.

1.6.6 Data processing costs related to the Work. However, any such data processing costs will be limited to the cost of personal computer hardware used at the field office in the normal day to day administration, management and control of the Project. The aggregate charges for any such hardware must not exceed the Fair Market Value of the hardware at the time it was brought to the field office. If the total charges for any particular piece of hardware reach an amount equal to the Fair Market Value, that particular piece of hardware must be turned over to City whenever it is no longer needed for the Project. If Contractor elects to keep the particular piece of hardware, the job costs must be credited with a mutually agreeable amount which will represent the Fair Market Value of the particular piece of hardware at the time it was no longer needed for the job. Software or other costs associated with the use of computer programs will not be considered to be a reimbursable cost and will be considered to be covered by the Contractor's Fee.

1.6.7 Deposits lost for causes other than Contractor's negligence or failure to fulfill a specific responsibility to City as set forth in the Contract Documents.

1.6.8 Legal, mediation and arbitration costs, including attorneys' fees, other than those arising from disputes between City and Contractor, reasonably incurred by Contractor in the performance of the Work and with City's prior written approval; which approval will not be unreasonably withheld.

1.6.9 Expenses incurred in accordance with Contractor's standard personnel policy for relocation and temporary living allowances of personnel required for the Work, if pre-approved by City in writing. If City authorizes the reimbursement of relocation costs, the reimbursable relocation expenses will be limited to a maximum of $50,000 per person. Any relocation cost incurred by Contractor in excess of the amount reimbursed by City will be considered to be covered by the Contractor's Fee.

1.7 Other Costs and Emergencies

1.7.1 Other costs incurred in the performance of the Work if and to the extent approved in

advance in writing by City.

1.7.2 Costs due to emergencies incurred in taking action to prevent threatened damage, injury or loss in case of an emergency affecting the safety of persons and property.

1.7.3 Costs of repairing or correcting damaged or nonconforming Work executed by Contractor, Subcontractors or Suppliers, provided that such damaged or nonconforming Work was not caused by negligence or failure to fulfill a specific responsibility of Contractor and only to the extent that the cost of repair or correction is not recoverable by Contractor from insurance, sureties, Subcontractors or Suppliers.

1.8 Related Party Transactions

1.8.1 The term "related party" will mean a parent, subsidiary, affiliate or other entity having common ownership or management with Contractor; any entity in which any stockholder in, or management employee of, Contractor owns any interest in excess of ten percent in the aggregate; or any person or entity which has the right to control the business or affairs of Contractor. The term "related party" includes any member of the immediate family of any person identified above.

1.8.2 If any of the costs to be reimbursed arise from a transaction between Contractor and a related party, Contractor must notify City in writing of the specific nature of the contemplated transaction, including the identity of the related party and the anticipated cost to be incurred, before any such transaction is consummated or cost incurred. If City, after such notification, authorizes in writing the proposed transaction, then the cost incurred will be included as a cost to be reimbursed, and Contractor must procure the Work, equipment, goods or service from the related party, as a Subcontractor. If City fails to authorize the transaction, Contractor must procure the Work, equipment, goods or service from some person or entity other than a related party.

SECTION 2 – COSTS NOT TO BE REIMBURSED

2.1 The Cost of Work must not include:

2.1.1 Salaries and other compensation of Contractor's personnel stationed at Contractor's principal office or offices other than the site office, except as specifically provided in Subparagraphs 1.2.2 and 1.2.3.

2.1.2 Expenses of Contractors' principal office and offices other than the site office.

2.1.3 Overhead and general expenses, except as may be expressly included in Section 1.

2.1.3.1 Costs of Contractor's home office computer services or other outside computer processing services will be considered overhead and general expense. Accordingly, Contractor should not plan to perform any such computer related services or alternatives at the field office when such services or functions can be performed at Contractor's home or branch offices, or other outside service locations.

2.1.4 Contractor's capital expenses, including interest on Contractor's capital employed for the Work.

2.1.5 Rental costs of machinery and equipment, except as specifically provided in subparagraph 1.5.2.

2.1.6 Except as provided in Subparagraph 1.7.3 of the Agreement, costs due to the negligence or failure to fulfill a specific responsibility of Contractor, Subcontractors and Suppliers or anyone directly or indirectly employed by any of them or for whose acts of them may be liable.

2.1.7 Any cost not specifically and expressly described in Section 1.

2.1.8 Costs, other than costs included in Change Orders approved by City that would cause the GMP to be exceeded.

SECTION 3 - DISCOUNTS, REBATES, REFUNDS AND SAVINGS

3.1 Cash discounts obtained on payments made by Contractor will accrue to City if (1) before making the payment, Contractor included them in an Application for Payment and received payment therefore from City, or (2) City has deposited funds with Contractor with which to make payments; otherwise, cash discounts will accrue to Contractor. Trade discounts, rebates, refunds and amounts received from sales or surplus materials and equipment will accrue to City, and Contractor must make provisions so that they can be secured.

3.1.1 Cost of the Work will be credited with all insurance policy discounts, performance and payment bond rebates or refunds, refunds or return premiums from any Subcontractor default insurance, refunds or rebates from any Contractor controlled insurance programs applicable to the Project, merchandise rebates of any nature, refunds of any nature, insurance dividends; and a portion of any volume rebates or free material credits earned with purchase of material or other goods and services charged to the job.

3.1.2 "Cash" discounts which may accrue to Contractor will be limited to a maximum of 1.5% of invoice cost. Any portion of "Cash" discounts greater than 1.5% will automatically accrue to City if Contractor is eligible to take advantage of the discounts.

3.2 Amounts that accrue to City in accordance with the provisions of Paragraph 3.1 will be credited to City as a deduction from the Cost of the Work.

3.3 Any and all savings on the GMP, or any separately guaranteed items comprising the GMP, will belong to City, subject to any express right in the Contract for Contractor to share in savings. Savings are subject to City's right to audit, and may be audited separately.

SECTION 4 - GENERAL CONDITIONS COSTS

4.1 General Conditions Costs may include, but are not limited to, the following types of costs incurred by Contractor during construction of the Work to the extent they are reimbursable Costs of the Work as delineated above: payroll costs for Work conducted at the site, payroll costs for the superintendent and full-time general foremen, payroll costs for management

personnel resident and working on the site workers not included as direct labor costs engaged in support (e.g. loading/unloading, clean-up, etc.), administrative office personnel, costs of offices and temporary facilities including office materials, office supplies, office equipment, minor expenses, utilities, fuel, sanitary facilities and telephone services at the site, costs of liability insurance premiums not included in labor burdens for direct labor costs, costs of bond premiums, costs of consultants not in the direct employ of Contractor or Subcontractors, fees for permits and licenses.

4.2 General Conditions Costs may be paid on a percentage of the Contract Price or on a lump/stipulate sum basis as set forth in the Contract. All costs included in the General Conditions Costs will not be separately invoiced to or paid by City.

4.3 The total amount of General Conditions Costs for the Work may be divided by the number of days allowed for performance of the Work, to determine a fixed daily rate for General Conditions Costs that may be used in computing the General Conditions Costs allocated to any period of time, or for any adjustments in the General Conditions Costs agreed to in writing by City.

LANDSCAPE ESTABLISHMENT PERIOD

Section 1 – Description and General

Contractor is in direct control of work performed under the Landscape Establishment Period. If work is subcontracted, a representative of the Contractor will be present at the site of the work for all hours that the subcontractor works. Subcontracting of Landscape Establishment work will be permitted for weed eradication with herbicides, because of special licensing. A licensed temporary service may be used to supply labor to Contractor if Contractor has received approval from City Representatives. Contractor will submit the required subcontract documentation.

Contractor must provide adequate personnel to accomplish the required maintenance of the plant materials at intervals acceptable to City Representatives.

If not healthy at the end of the maintenance period, the maintenance must be continued until the plant material is approved by City.

1.1 Time and Schedule

Unless otherwise expressly agreed to in writing by City, the Landscape Establishment Period will be per General Conditions Section 6.5.4.

1.2 Planted Stock and Seeding Establishment

1.2.1 Tree planting and staking must be per City of Chandler Standard Detail C-801.

1.2.2 All trees will stand erect on their own without stakes when brought to this site. If the tree cannot stand on its own when nursery stakes are removed, the tree will be removed and replaced.

1.3 Pre-Emergent Herbicide and Weed Control

1.3.1 Contractor will provide three applications of an approved pre-emergent herbicide on all unpaved areas of the project, as directed by City Representatives, to control weed growth in all areas of the project. The number of applications may be increased as directed by the City Representative, and at no additional cost to City, if the City Representative deems additional applications are required to control weed growth.

1.3.2 Application sequence will be approved in advance by City. The first application of pre-emergent will be completed prior to the application of Decomposed Granite and will be included with the cost of the Decomposed Granite as specified and part of the Construction Phase portion of work. The second application of pre-emergent will be completed after installation of the Decomposed Granit and no later than half-way through the Landscape Establishment Period. The third and final application of pre-emergent will be applied 15 days prior to completion of the Landscape Establishment portion of the project. The second and third pre-emergent applications will be included with the cost of Landscape Establishment. Watering will be completed in accordance with the manufacturer's recommendations, as included and as related to each application.

1.3.3 The pre-emergent herbicide will be applied in accordance with the Technical Specifications and the recommendations of the pre-emergent herbicide manufacturer, as approved by City Representatives.

1.3.4 The control of weeds will be accomplished by the use of herbicides. Manual removal of weeds will be required, after herbicides have taken affect.

1.3.5 Contractor is responsible for the removal and disposal of all trash and debris that during the Landscape Establishment Period. Contractor will keep the project in a neat and orderly manner during the duration of the Landscape Establishment Period.

1.4 Water

The water used during Landscape Establishment to properly maintain the plant material will be furnished by City, at designated sources from within the project limits, at no charge to Contractor. Contractor will be responsible for all equipment, materials and labor necessary to load, transport and unload water for watering purposes.

1.5 Plant Material Replacements

The plant material replacement will be considered as included in the work for Landscape Establishment, and will be made at no charge to the City.

1.5.1 Shrub and Plant Replacement - During the second half of the Landscaping Establishment period, Contractor will provide, where required, plant replacements as follows:

Original Size	Replacement Size
1 gallon	5 gallon
5 gallon	15 gallon
15 gallon	24-inch box
36-inch box	48-inch box

1.5.2 Tree Replacement – During the second half of the Landscape Establishment Period, Contractor will provide plant material replacements for existing plants that die as follows:

Existing Plant Material Sizes	Replacement Size
Trees:	
2-inch Caliper	24-inch box
4-inch Caliper	36-inch box
6-inch Caliper and greater	54-inch box
Shrubs:	
All Existing Shrubs	15 gallon

1.6 Measurement and Payment

See Technical Specifications for Measurement Payment provisions.

EXHIBIT C

TECHNICAL SPECIFICATIONS

FIELD OF HONOR – PHASE 2

4050 E CHANDLER HEIGHTS ROAD CHANDLER, AZ 85225

CITY OF CHANDLER PROJECT NO. PR2004

TECHNICAL SPECIFICATIONS

PREPARED FOR:

CITY OF CHANDLER
PUBLIC WORKS & UTILITES
CAPITAL PROJECTS

PREPARED BY:

Kimley-Horn
7740 North 16th Street
Suite 300
Phoenix, AZ 85020

DATE: April 1, 2021

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APPENDIX A – GEOTECHNICAL / SOILS REPORT

LANDSCAPE ARCHITECT
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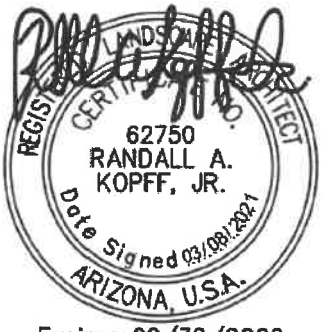
Phoenix, AZ 85020
602-944-5500
Randall Kopff, PLA



Expires: 09/30/2022

CIVIL ENGINEER
Kimley-Horn & Associates
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Phoenix, AZ 85020
602-944-5500
Sean Wozny, PE, PLA



ELECTRICAL ENGINEER
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602-944-5500
Michael Colombo, PE



Expires 12/31/21

PART A: BID ITEMS

The following items, though not a comprehensive list, are non-payment items being considered incidental to the project, the costs of which are to be included within other bid items:

Saw cutting
Locating (or pothole) of new or existing utilities
Concrete curb and gutter transition, MAG Std. Det. 221
Curb transition, MAG Det. 220-2 and 221
SWPPP preparation and document maintenance
Contractor's site office or yard.
Roadway sweeping
Any and all permits - preparation costs and permit fees
Protective fencing or plating for open trenches
Photographing and videotaping of the project
Preparation of record drawings
Crown line
Temporary pavement as required for all pipeline and underground work
Removal of existing landscape irrigation pipe, tubing, and equipment

ITEM NO. 1 CONSTRUCTION SURVEYING AND LAYOUT

Description:

The Contractor will furnish all labor, materials, and equipment necessary to perform all surveying, staking, laying out of control lines, and verifications of the accuracy of all existing control points that are delineated in the Contract Documents. The work will be done under the direction of a Registered Land Surveyor (RLS) licensed to practice in the State of Arizona.

Construction Requirements:

Staking Outline: Prior to beginning any survey operations, the Contractor will furnish to the Engineer, for approval, a written outline detailing the method of staking, interval of stakes, marking of stakes, grade control for various courses of materials, referencing, structure control, and any other procedures and controls necessary for survey completion. A part of this outline will also be a schedule that will show the sequencing of the survey and layout work, throughout the course of the contract, listing a percentage of completion for each month.

Field Books: The Contractor will furnish field books to be used for recording survey data and field notes. These books will be available for inspection by the City at any time and will become the property of the City upon completion of the work.

Survey Control Verification: Control Points (horizontal and vertical) -The existence and location of all survey monuments, bench marks, and control points will be verified prior to demolition or construction activity. Immediately notify the City of Chandler Project Manager when location discrepancies greater than 0.02 foot horizontal or 0.01 foot vertical are found. All datum will be based upon the City of Chandler datum.

Control Lines: Construction control lines with grade breaks, transition points, horizontal and vertical curves, etc., will be established and referenced prior to construction.

Temporary Bench Marks: Temporary bench marks will be established prior to construction, maintained and periodically verified for accuracy throughout the construction phase.

Pre-Construction Location Survey: All existing features will be located prior to construction, referenced to survey monuments along control lines by stationing in accordance with the construction documents and by offset distance from the control lines. All features will be re-locatable after construction. Distances measured will be within 0.01 foot.

Survey monuments: The land surveyor will follow the requirements of A.R.S. § 33-103 when establishing, replacing or setting Public Land System Survey monuments at Section or Quarter Section corners and will follow the requirement in Section 9(C) of the Arizona Boundary Survey Minimum Standards when establishing new or replacement boundary monuments and witness corner monuments. Finally, land surveyors will also comply with the requirements of A.R.S. § 104 through 106 when establishing, replacing or setting any type of boundary monument. Whenever any monuments are established, including those set to replace missing or damaged monuments of a previous survey, those actions require the surveyor to create and record a survey drawing documenting the new monumentation as established.

Water and Sewer Line Appurtenances: Water and sewer line surface appurtenances such as manholes, valves, and cleanouts that lie within the construction area will be located and noted on the Contractor's approved construction documents prior to any demolition or excavation.

Match Points and Removals: Verify the location (horizontal and vertical) of existing facilities to which the project connects. Immediately notify City Representatives when location discrepancies of connecting facilities greater than 0.10 foot horizontal or 0.02 foot vertical are found.

Construction Stakes: The Contractor will set construction stakes and marks establishing lines and grades for road work, curbs, gutters, sidewalks, structures, buildings, centerlines for utilities and necessary appurtenances, and other work as indicated in the Contract Documents and will be responsible for their conformance with the Project Plans and Technical Specifications.

The stakes will be established in accordance with the following guidelines which

represent the minimum standard and the Contractor will provide additional stakes and controls necessary to perform the work. The Contractor will be held responsible for the preservation of all stakes and marks and will replace, at no additional cost to the City, any construction stakes or marks which have been carelessly or willfully destroyed by any party.

(a) Roadway: Subgrade stakes will be set to subgrade elevation at 50 foot intervals on straight sections, 25 foot intervals through vertical curves, on horizontal curves with radius of 600 feet or less, and/or slopes of less than 0.4%, and the beginning and end of horizontal and vertical curves and grade breaks. Stakes will be set at crown lines, at grade break lines, and at edges of pavement which do not abut concrete curb and gutter or at the edge of pavement abutting vertical curbs or other structures whose surface grade will not be flush with the finished pavement grade. Quarter lines will be staked where the distance between the crown line stakes and the curb and gutter face exceeds 20 feet. ABC stakes will be set to ABC elevation at 33 foot intervals on straight sections, 25 foot intervals through vertical curves, on horizontal curves with radius of 600 feet or less, and/or slopes of less than 0.4%, and the beginning and end of horizontal and vertical curves, and grade breaks. Stakes will be set at crown lines, at grade breaks, and at edges of pavement which do not abut concrete curb and gutter or at the edge of pavement abutting vertical curbs or other structures whose surface grade will not be flush with the finished pavement grade. Quarter lines will be staked where the distance between the crown line stakes and the curb and gutter face exceeds 20 feet.

(1) Where the existing pavement will be milled and inlayed, the Contractor will provide 10-foot grid interval surface control horizontally and vertically.

(2) Pavement edges will be controlled by utilizing a wire control mechanism or screeding along a concrete gutter or other structure whose surface grade is flush with the finished pavement grade. Stakes will be set to finished elevation at 33 foot intervals on straight sections, 25 foot intervals on curves with radius of 600 feet or less, and/or slopes of less than 0.4%, and the beginning and end of horizontal and vertical curves, and grade breaks.

(b) Sidewalk and Bike Paths: Stakes are not required for sidewalks five feet or less in width which are adjoining existing curb and gutter.

(1) Sidewalk stakes will be set to grade on an offset and tacked for line at 25 foot intervals at the beginning and end of horizontal and vertical curves and grade breaks.

(c) Storm Sewer and Drainage: All cuts will be to the invert of the pipe, given to the nearest 0.01 of a foot.

(1) Stakes for storm sewer will be driven flush with the existing ground, set on an offset at 50 foot intervals. Stakes will be marked with the offset and indicated cut.

(2) Wyes for laterals will be marked with a line only stake.

(3) Manholes will be marked with the offset and indicated cut to top of manhole grade and inverts.
(4) Stakes for storm water inlets, two per inlet, will be set on a line normal to the roadway at the center line of the inlet five and ten feet from the face of curb. The stakes will be marked with the offset to the face of curb and the cut or fill to the top of curb and inverts.
(5) Cut sheets will be supplied to the Contractor and City of Chandler Inspector.

(d) **Water:** All cuts will be to the invert of the pipe, given to the nearest 0.10 of a foot.
(1) Stakes for water will be driven flush with the existing ground, set on an offset at 50 foot intervals and specified grade breaks. Stakes will be marked with the offset and indicated cut.
(2) Fittings or other critical points such as tees will be marked with a line only stake.
(3) Fire hydrants will be located with two stakes per hydrant set parallel with the roadway five feet from the centerline of the hydrant. The stakes will be marked with the offset to the hydrant and indicated cut to the top of curb at the centerline of the hydrant.
(4) Water meters will be located with two stakes per meter set parallel with the roadway five feet from the centerline of the meter. The stakes will be marked with the offset to the meter and indicated cut to the top of curb at the centerline of the meter.
(5) Cut sheets will be supplied to the Contractor and City of Chandler Inspector.

(e) **Traffic Signing, Striping and Detector Loops:** The Contractor will delineate the procedures and controls to be utilized in the Staking Outline.

(f) **Inspection and Acceptance of Work:** The City reserves the right to make inspections and random checks of any portion of the staking and layout work. If, in the City's opinion, the work is not being performed in a manner that will assure proper control and accuracy of the work, the City may order any or all of the staking and layout work redone at no additional cost.

Measurement and Payment:

Construction Surveying and Layout will be measured as a single complete unit of work and paid at the contract lump sum price, which price will be full compensation for the work as described herein and required to provide all necessary survey stakes and control. The approved schedule showing the sequencing and percentage of the survey and layout work will be the basis on which monthly progress payments will be made. This schedule will be subject to periodic review, at the request of either party, if the survey and layout work lags or accelerates. If necessary, the schedule will be revised to reflect changes in survey and layout progress. When approved, the revised schedule will become the basis for payment.

ITEM NO. 2 GPS DATA COLLECTION (ESRI – ARCGIS GEODATABASE FORMAT)

Description:

This work under this item will consist of furnishing all labor, materials, and equipment necessary to provide survey grade GPS / GIS data meeting the following requirements for all facilities to be owned and/or operated by the City of Chandler.

Construction Requirements:

(a) ESRI File Geodatabase format:

All GPS point data, along with corresponding GIS Attribute data, must be submitted in ESRI File Geodatabase format. The City of Chandler will provide an electronic copy of the File Geodatabase in ESRI ArcGIS format upon submitting the "Request for Public Records" form in Appendix D. Please submit the data request form to Kristy.Noelson@Chandleraz.gov.

(b) Data dictionary and Attribute data:

Attribute data should be provided for each of the GPS'd Utility Feature listed in section 'd' below. All Attribute data should conform to the ESRI File Geodatabase format provided in Appendix E.

(c) Coordinate System:

Horizontal Datum: Arizona State Plane Coordinates, Central Zone NAD83 (HARN) Vertical Datum: NAVD88.

(d) Point Data for GPS:

(1) Water System Features:
(2) Water main location (top of pipe), size and material (one coordinate provided every 100 feet minimum) and at fittings.
(3) Water fitting location (top of feature), size, material and type including: Bend (22.5, 45, or 90), Tee, Tapping Sleeve, Cross, Coupling, End Cap, Line Stop, Reducer, Saddle, Other.
(4) Water valve location (center of valve box cover), size and type.
(5) Fire hydrant location (top of hydrant), manufacturer and year.
(6) Water service line location (at connection to main, any bends, and termination at meter box or meter vault or at the edge of easement or ROW), size and material.
(7) Water blow-off and air release valve location (center of cover), size, type and manufacturer.
(8) Water manhole or vault location (center of cover), size and type.
(9) Waste Water System Features:
(10) Sewer manhole and cleanout location (center of cover), size, material, and cover type.
(11) Sewer gravity main location (invert of pipe), size, material and flow direction (from) at all manholes, cleanouts and structures.

(12) Sewer service line location, size and material (at connection to main, and termination at cleanout, or stub out at edge of the easement or ROW).
(13) Sewer force main location (top of pipe), size, and material (one coordinate provided every 100 feet minimum) and at fittings.
(14) Sewer force main (and gravity) fitting location (top of feature), size, material and type including: Bend (22.5, 45, or 90), Tee, Tapping Sleeve, Cross, Coupling, End Cap, Line Stop, Reducer, Saddle, Wye, Other.
(15) Sewer force main valve location (center of valve box cover), size and type.
(16) Sewer force main air release valve location (center of cover), size, type and manufacturer.
(17) Sewer force main manhole or vault location (center of cover), size and material.
(18) Sewer structure (center of structure), type (diversion, junction box)
(19) Reclaimed Water System Features:
(20) Reclaimed main location (top of pipe), size, and material (one coordinate provided every 100 feet minimum) and at fittings.
(21) Reclaimed fitting location (top of feature), size, material and type including: Bend (22.5, 45, or 90), Tee, Tapping Sleeve, Cross, Coupling, End Cap, Line Stop, Reducer, Saddle, Other.
(22) Reclaimed valve location (center of valve box cover), size and type.
(23) Reclaimed service line location (at connection to main, any bends, and termination at meter box or meter vault or at the edge of easement or ROW), size and material.
(24) Reclaimed blow-off and air release valve location (center of cover), size, type and manufacturer.
(25) Reclaimed manhole or vault location (center of cover), size and type.
(26) Storm Water System Features:
(27) Storm manhole and cleanout location (center of cover), size, material, and cover type.
(28) Storm gravity main location (invert of pipe), size, material, and flow direction (from) at all manholes, cleanouts, and structures.
(29) Storm structure location (center of structure), type and category including:
(30) Drywell, Catch Basin, Scupper, Bubbler Box, Collection Vault.
(31) Standard GPS Metadata on all points collected: Date, Time, Height, Horiz_Precision, Vert_Precision, Northing, Easting, Surveyor, Datafile, and Comments

(e) Electronic Data Submittal:

Each submittal must consist of
(1) ESRI – ArcGIS Geodatabase with cumulative data and attribute, and
(2) Construction plans with collected utilities clearly redlined
(3) The frequency of data submittal will be every two weeks after water, sewer, reclaim or storm assets go into the ground. Submittals can be emailed to: GPS@Chandleraz.gov

Measurement and Payment:

GPS Data Collection (ESRI – ArcGIS Geodatabase Format) will be measured as a

single complete unit of work and paid at the contract lump sum price, which price will be full compensation for the work as described herein, including submittal and acceptance by City of Chandler.
No payment will be made for rejected GPS Point Data.
MAG Standard Detail 130.

Construction Requirements:
The work under this item will conform to MAG Standard Detail 130.

Measurement and Payment:
Barricade, Type B, MAG Detail 130 will be measured per linear foot of barricade installed and will be paid for at the contract unit price per linear foot, which price will be full compensation for the work, complete in place.

ITEM NO. 3 EROSION CONTROL (SWPPP PREPERATION, INSTALLATION, MAINTENANCE, AND REMOVAL)

Description:

The work under this item will consist of furnishing all materials, labor, and equipment necessary to prepare the SWPPP plan, furnish, install, maintain and remove (if applicable) erosion control best management practices as specified in the Project Plans and directed by City Representatives.

Materials:

All materials will conform to the requirements of ADOT Standard Specifications. Section 810-2.

Construction Requirements:

All work under this item will be completed in conformance with the Project Plans and all applicable City, County, State, and Federal regulations.

Measurement and Payment:

Erosion Control (SWPPP Preparation, Installation, Maintenance, and Removal) will be measured as a single complete unit of work and paid at the contract lump sum price, which price will be full compensation for the work described herein and complete in place.

No payment will be made for rejected best management practices, for maintenance after a storm event, or for damage by the Contractor. No allowance will be made for extra material used in overlapping at splice joints.

ITEM NO. 4 MOBILIZATION/DEMOBILIZATION

Description:

The work under this item will consist of furnishing all materials, labor, and equipment necessary to conform to MAG Uniform Standard Specifications Section 109.10.

Measurement and Payment:

Mobilization/Demobilization will be measured as a single complete unit of work and paid at the contact lump sum price, which price will be full compensation for the work, complete in place.

ITEM NO. 5 CLEARING AND GRUBBING

Description:

The work under this item will consist of furnishing all materials, labor, and equipment necessary to conform to MAG Uniform Standard Specifications Section 201. The Contractor should review the landscape plans to identify trees to be protected in place. The Contractor will clear and grub only the areas required to construct the project improvements.

Construction Requirements:

All work under this item will be completed in conformance with MAG Uniform Standard Specifications Section 201 in its entirety except as modified herein.

Burning of trash, debris, plant material, wood, or any other waste material will not be allowed.

Construction Water required for 180-day duration shall be incidental to clearing and grubbing work.

Measurement and Payment:

Clearing and Grubbing will be measured as a lump sum and paid at the contact lump sum price, which price will be full compensation for the work, complete in place. No separate measurement will be made for trees 12 inches or less in diameter at 1-foot above the original ground surface or for additional construction water required for dust control or other purposes.

ITEM NO. 6 TEMPORARY CONSTRUCTION FENCE

Description: Furnish and construct temporary fencing required to fence off excavation, storage, and operating areas. Erect suitably constructed temporary fences, neat in appearance, in the size, shape, and strength suitable for use intended and meeting the Project Manager's approval

Wherever required, erect and maintain signs, barricades, and pedestrian bridges, and supply guards and flagmen for protection of public.

Take positive measures to prevent entry of children, animals, and unauthorized adults to work site and storage areas at all times.

Obtain Contract Manager's approval before transporting or locating temporary facilities within construction site.

Unless otherwise indicated, erect fences 6 feet high.

Measurement and Payment:

Temporary Construction Fence will be measured by the linear foot and will be paid for at the contract unit price per linear foot, which price will be full compensation for the work complete in place.

ITEM NO. 7 EARTHWORK (INC GRADING, LANDSCAPE PREP AND SUBGRADE PREP, COMPLETE)

Description:
The work under this item will consist of furnishing all materials, labor, and equipment necessary for the excavation (or fill) to construct the site grading as depicted by the contours and elevations shown within the details of the Plans. The work will also include adjustments for any structures or landscaping in existing retention basins as specified in the Project Plans.

Materials:
Soil Materials
General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

Satisfactory Soils: ASTM D 2487 Soil Classification Groups GW, CL, GP, GM, SC, SW, SP, and SM; AASHTO M 145 Soil Classification Groups A-1, A-2-4, A-2-5, and A-3; or a combination of these groups; free of large rocks, debris, waste, vegetation, and other deleterious matter.

Unsatisfactory Soils: Soil Classification Groups GC, ML, OL, CH, MH, OH, and PT according to ASTM D 2487; A-2-6, A-2-7, A-4, A-5, A-6, and A-7 according to AASHTO M 145; or a combination of these groups.

Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1- 1/2-inch sieve and not more than 8 percent passing a No. 200 sieve or as described in the geotechnical report.

Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940 and as described in the geotechnical report.

Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940 and as described in the geotechnical report.

Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve.

Accessories
Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility.

Construction Requirements:
All grading for Earthwork will be constructed in accordance with the requirements of with ADOT Standard Specifications Section 203.4, except as modified herein.

All basins constructed will be percolation tested in accordance with the double-ring infiltrometer test ASTM D3385. The results of the tests will be submitted to the City for evaluation prior to the acceptance of the basin grading.

Retention basin slopes will not exceed 4:1 horizontal to vertical.

Preparation
Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards

created by earthwork operations.

Preparation of subgrade for earthwork operations including removal of vegetation, topsoil, debris, obstructions, and deleterious materials from ground surface is specified in the Specifications.

Protect and maintain erosion and sedimentation controls, which are specified in the Specifications during earthwork operations.

A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions without approval from the City.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

Excavation for Structures
Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.

Excavation for Walks And Pavements
Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades. See geotechnical report for requirements.

Excavation for Utility Trenches
Excavate trenches to indicated gradients, lines, depths, and elevations.

Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit, unless otherwise indicated.

Clearance: As indicated.

Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material, 4 inches deeper elsewhere, to allow for bedding course.

Subgrade Inspection
Proof-roll subgrade below the building slabs and pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the Chandler Representative, without additional compensation.

Unauthorized Excavation
Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by the Chandler Representative.

Fill unauthorized excavations under other construction or utility pipe as directed by the Chandler Representative.

Storage of Soil Materials
Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water and not adversely alter existing drainage flows. Cover to prevent windblown dust.

Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

Utility Trench Backfill
Place backfill on subgrades free of mud.

Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

Backfill trenches excavated under footings and within 18 inches of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings.

Provide 4-inch thick, concrete-base slab support for piping or conduit less than 30 inches below surface of roadways. After installing and testing, completely encase piping or conduit in a minimum of 4 inches of concrete before backfilling or placing roadway subbase.

Place and compact initial backfill of satisfactory soil, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the utility pipe or conduit.

Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.

Place and compact final backfill of satisfactory soil to final subgrade elevation. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

Soil Fill

Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
Place and compact fill material in layers to required elevations as follows:

- Under grass and planted areas, use satisfactory soil material.
- Under walks and pavements, use satisfactory soil material.
- Under building slabs, see geotechnical report.
- Under footings and foundations, see geotechnical report.

Soil Moisture Control

Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to optimum moisture content as identified in the geotechnical report.

Do not place backfill or fill soil material on surfaces that are muddy.

Remove and replace, or scarify and air dry otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

Compaction of Soil Backfills and Fills

Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers or as described in the geotechnical report.

Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698 or ASTM D 1557:

Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.

Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 95 percent as per soils report.

Under lawn or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.

For utility trenches, compact each layer of initial and final backfill soil material at 95 percent. Under lawn or unpaved areas, scarify the final surface depth and compact as indicated above.

Grading
General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

- Lawn or Unpaved Areas: Plus or minus 1 inch.
- Walks: Plus or minus 1 inch.
- Pavements: Plus or minus 1/2 inch.

Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

Subbase and Base Courses
Place subbase and base course on subgrades free of mud.

On prepared subgrade, place subbase and base course under pavements and walks as follows:

Shape subbase and base course to required crown elevations and cross-slope grades.

Compact subbase and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 698 or ASTM D 1557.

Drainage Course
Place drainage course on subgrades free of mud.
On prepared subgrade, place and compact drainage course under cast-in-place concrete slabs-on-grade as follows:

- Place drainage course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.

- Compact each layer of drainage course to required cross sections and thicknesses to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

Protection
Protecting Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris.

Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

Disposal of Surplus and Waste Materials
Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory

- soil, trash, and debris, and legally dispose of it off Chandler Representative's property.

Measurement and Payment:
Earthwork will be measured per cubic yard, including percolation tests. The Chandler Representative will compute the quantities of material excavated by a method which in his opinion is best suited to obtain an accurate determination.

The accepted quantity of Earthwork, measured as provided above, will be paid for at the contract unit price per cubic yard, which price will be full compensation for the work, complete in place. Payment will include adjustments and grading around existing structures and landscaping. No additional payment will be made for grading beyond the "match points" or extent of the new drainage contour lines, as specified in the Project Plans or as a result of disturbance by the Contractor.

No additional payment will be made for the percolation tests, the cost being considered incidental to this item.

ITEM NO. 8 DUAL CHAMBER DRYWELL SYSTEM (INC INSTALLATION DOCUMENTATION

Description:

The work under this item will consist of furnishing all labor, materials and equipment

necessary to construct drywells in locations shown on the Project Plans.

Materials:

The drywell will conform COC Detail 501 in its entirety.

Construction Requirements:

Infiltration results will be taken by the drywell manufacturer and will be provided to the City Representatives and Contractor as soon as possible. The Contractor not/construct any drywell systems without direction and approval by City Representatives.

The drywells will be constructed per the detail in the Project Plans and COC Detail 501. The ADEQ drywell registration numbers are: [INSERT ALL REGISTRATION NUMBERS HERE].

Measurement and Payment:

Drywalls will be measured as unit for each and will be made at the contract unit price each for each accepted drywell installed in place and fully operational with post-construction performance testing accepted by City Representatives.

ITEM NO. 9 1 IN PVC SCH 40 DOMESTIC WATER LINE W/ ALL NECESSARY FITTINGS

Description:

The work under these items will consist of furnishing all materials, labor and equipment necessary to install 4 inch, 1.5 inch and 1 inch pipe as specified in the Project Plans, or at locations determined on site at the time of installation in accordance with the requirements of Chandler TDM8 these Technical Specifications, and approved by the City Representative.

The work will also include all barricades, warning tape, potholing, locating of buried utilities during excavation and shoring required or specified by City Representatives.

Materials:

Pipe will be PVC Schedule 40, belled ends, solvent weld. Pipe and fittings will conform to the requirements of Subsection 808-2.01 (I) (1) of the ADOT Standard Specifications.

Construction Requirements:

All pipe installation will conform to the plan detail when crossing paved roadways and 18 inches minimum when placed beneath a sidewalk.

Pipe will be installed through the use of open trench.

The Contractor will locate all existing utilities prior to the installation of all pipe.

The Contractor will repair any existing utilities damaged during the pipe installation at no cost to the City.

Measurement and Payment:

All Pipe will be measured per linear foot of pipe furnished and installed and will be paid for at the contract unit price per linear foot, which price will be full compensation for the item, complete in place, as described herein and/or on the Project Plans including pipe, and all trenching, bedding, backfill, compaction, trench shoring, potholing, utility locating and incidentals as specified herein and as shown on the Project Plans.

No additional payment will be made for trench shoring, supplying the bedding material or in coordinating the efforts with City Representatives in verifying all pipe locations, the cost being considered incidental to this item.

ITEM NO. 10 ANGULAR RIPRAP D50= 6 IN AT 18 IN DEPTH

Description:
The work under this item will include furnishing of all materials, labor, and equipment necessary to install riprap at locations and dimensions as specified in on the Project Plans including filter fabric.

Materials:
Riprap stone will comply with MAG Uniform Standard Specifications Sections 701.2 and 703 in their entirety. All riprap will have a D50 size of six inches and T of 18 inches. Riprap will be constructed 18 inches thick. Filter Fabric will comply with MAG Uniform Standard Specification Section 796 in its entirety.

Construction Requirements:
Riprap will be constructed in accordance with MAG Uniform Standard Specification Section 220.

Measurement and Payment:
Riprap, D50=6 In, T=18 In will be measured per cubic yard and will be paid for at the contract unit price per cubic yard, which price will be full compensation for the item, complete in place, including filter fabric.

ITEM NO. 11 SECTION 02490 TREE – 36 IN BOX
ITEM NO. 12 SECTION 02490 SHRUB – 5 GAL
ITEM NO. 13 SECTION 02490 SHRUB – 1 GAL
ITEM NO. 14 SECTION 02490 DECOMPOSED GRANITE (2 IN DEPTH)

MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND CITY OF CHANDLER ENGINEERING DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS ARE HEREBY AMENDED TO INCLUDE THE FOLLOWING:

PART 1 - GENERAL

1.01 QUALITY ASSURAINCE

A The landscape contractor shall have performed similar work as required in this specification for a period of five years previous to the award of this contract.

1.02 SCOPE OF WORK

A Contractor shall provide all labor, materials, including water, equipment and incidentals as shown, specified and required to perform landscaping work. The extent of the landscaping work is shown on the drawings and in schedules. The types of landscaping required include the following:

1. Landscape grading
2. Ground cover areas
3. Trees, shrubs and other nursery stock
4. Stakes and guys, mulches, and all other material necessary to complete the planting job as specified.
5. Maintenance work as specified until completion of the Contract
6. Soil amendments
7. Decomposed granite
8. Inert Groundcovers
9. Fertilizers
10. Miscellaneous landscape materials
11. Guarantees

Contractor shall not begin planting operations until landscape grading and irrigation system has been installed and is fully operable.

1.03 SUBMITTALS

A. General: Submit the following according to the conditions of the Contract and Division 1 of the Specifications.

B. Plant palette and procurement logs of plant materials required.

C. Decomposed Granite: (1) One quart bag(s) filled ¾ full with each type of inert groundcover to be used.

1.04 COORDINATION

A. Review installation procedures under other sections and coordinate the installation of items that must be installed with the landscaping.

1.05 OBSTRUCTIONS BELOW GROUND AND UTILITIES

A. Contractor shall call for "blue stake" as required. Exercise extreme caution in all planting operations, as there are underground electric and telephone cables, sewer lines and water lines throughout the entire area. Contractor shall study and be familiar with the location of these obstructions and underground utilities. Place plantings where shown on the plans. If there are obstructions or underground utilities, relocate plants clear of any interference at the direction of the City inspector. Landscape Contractor shall repair all damages caused by him to obstructions and underground utilities at no expense to Owner.

PART 2 - INSTALLATION

2.01 GENERAL

A. Determine location of under-ground utilities and perform work in a manner which will avoid possible damage. Hand excavate, as required, to minimize possibility of damage to underground utilities. Maintain grade stakes until removal is mutually agreed upon by all parties concerned. The Contractor shall layout plant material using stakes or flags to indicate the location of all plant materials. Spacing of shrub and groundcover material shall be as specified in schedule on plans. Location and spacing of trees shall be determined by the plan scale and located as accurately as the scale permits. Preliminary adjustments to conform to actual site conditions shall be accomplished at this time. The Owner's representative or his authorized representative shall approve the stakeout of plant material prior to planting.

2.02 LANDSCAPE GRADING

A. The work under this section shall consist of grading, contouring, smoothing, and otherwise shaping areas at the locations designated on the project plans.

2.03 EXCAVATION FOR PLANTING

A. Planting pit width for trees and shrubs shall be excavated to a volume 3 times the size of the root ball of the plant to be planted. Contractor shall stockpile native soil excavated. The native soil will be used for backfilling planting soil. Scarify the walls of the planting pit.

B. Tree pit drainage shall be spot tested by the Contractor prior to planting by filling the pit with water twice in succession. Tree pits that result in the retention of water for more than 24 hours shall be over-excavated to three (3) times the rootball and backfilled with planting mix.

C. Payment for drainage pit tests shall be included in the line item for trees or shrubs. Payment for over-excavation, increased backfill mix and labor will be paid for as an extra work item when authorized by the Engineer.

2.04 FIRST BACKFILL

A. Planting pits shall be backfilled with native soil and be watered settled to a grade sufficient, that in the setting of the plant, the finish grade level after settlement will be the same as that at which the plants were grown (see details in landscape plans)

2.05 SETTING PLANTS

A. Container Removal: Remove container by turning plant upside down, supporting root ball with hand and tapping container gently to dislodge plant. Support root ball with both hands until planted in pit. Do not injure root ball, or hold plant by the stem.

B. Box Removal: Remove bottom of plant boxes before planting. Remove sides of box
without damage to root ball after positioning plant.

1. Set container and boxed stock on undisturbed native soil, plumb, and hold rigidly in center of pit or trench with top of ball at elevation as shown on planting details. When set, place additional soil backfill around base and sides of ball, and work each layer to settle planting soil backfill to eliminate voids and air pockets. When excavation is approximately 1/2 full, water thoroughly before placing remainder of planting soil backfill.
2. After removal of plant from container or sides from box, superficially cut edge-roots with a sharp knife on one side and tease out feeder roots to assure positive contact and embedment into planting soil.
3. After watering, any settlement within basins shall be refilled to required grade with native soil.

4. Prune, thin out and shape trees and shrubs in accordance with standard horticultural practice. Prune trees to retain required height and spread. Unless otherwise directed by the City Inspector, do not cut tree leaders, and remove only injured or dead branches.
5. Excessively pruned or misformed stock resulting from improper pruning shall be removed from site and replaced at no additional cost to the Owner.
6. Stake trees if necessary immediately after planting. See Part 6, Section 6.03, "Tree Staking."

PART 3 - MATERIALS: TREES, SHRUBS AND GROUNDCOVERS

3.01 GENERAL

A The Contractor shall coordinate pre-approval of plant material and delivery with the Owner and applicable nurseries as required.

3.02 PROTECTION AFTER DELIVERY

A Upon delivery to the site, all nursery stock shall be planted as soon as possible. Until planting, plants shall not be exposed to excessive sun or drying winds. Stock, which is not satisfactory in the opinion of the City Inspector or Owner's representative, shall be immediately replaced with acceptable stock at no expense to the Owner.

3.03 PLANTING SEASON

A The planting of all trees shall be performed during favorable weather conditions, during the season or seasons that are normal for such work, as determined by acceptable local practice.

3.04 OBSTRUCTION BELOW GROUND

A. Any rock or other underground obstructions shall be removed, if possible, to the depth necessary to permit proper planting, according to plans and specifications. If underground construction obstructions, or rock are encountered in the excavation of planting areas, other locations of the planting may be selected by the Contractor only upon approval of the City Inspector or Owner's Representative. The Contractor is responsible for determining the locations of existing underground installations prior to starting work and protecting the installations in place. Damage will be corrected at the expense of the Contractor to the satisfaction of the City Inspector. Coordinate work with other trades so conflicts will not exist or delay the work. Coordinate grades with earthwork and with placement of irrigation systems.

PART 4 - SOIL PREPARATION

4.01 PLANTING PIT SOIL

A. Topsoil, existing on site, or imported, shall be screened, fertile, friable soil free from nut grass, refuse, roots, heavy clay, noxious weeds or any material toxic to plant growth. Contractor shall test for pH, and pH shall not be lower than 5.5 nor exceed 8.3, and soluble salts shall not exceed 1,500 ppm. Contractor shall add amendments as required to meet the above specification. See soils report for additional amendments.

B. Prepared soil mix shall consist of one part nitrogen stabilized organic soil conditioner, four parts topsoil. To this mix add 1 lb. soil sulfur, .5 lb. Ammonium phosphate (11-52-0) and .25 lb zinc sulfate per cubic yard of prepared soil mix. Agriform 21 gram tablets with a 20-20-5 (plus iron) analysis shall be added in the following quantities:

For a one-gallon container:	1 tablet
For a five-gallon container:	2 tablets
For a 24" box and larger:	6 tablets

4.02 FINE GRADING

A. Topsoil shall conform to Section 4.01.

B. Fine grade by hand raking or dragging with an approved drift, removing all debris and rocks ½ inch diameter and greater. True surface to finished grade, even and firm at all points. Generally, finished grade shall be 1 ½ inches below tops of adjacent curbs, walks and slabs.

4.03 SPRINKLER HEADS

A. Heads shall be raised to the proper heights as detailed prior to planting.

PART 5 – DECOMPOSED GRANITE

5.01 MATERIALS

A. Decomposed granite shall be native, local, desert, decomposed granite stone. Fines shall be kept to a maximum of 25 percent of the total volume. The decomposed granite shall be from a single source, free from coating, clay, caliche or organic matter. Contractor shall provide Owner's representative with a sample of material showing color and gradation for approval before installation.

B. Decomposed granite color and size shall be per plan.

C. Chemical herbicide shall be Dachtol or Surflan pre-emergent or equal. Refer to City notes for rates of application.

5.02 SUBGRADE PREPARATION

A. Contractor shall examine the subgrade, verify the elevations, and observe the conditions under which the work is to be performed. The existing grade shall be fine graded and raked free of organic matter and other debris one-inch diameter and larger. Contractor shall apply one application of pre-emergent herbicide as per manufacturer's directions prior to installing granite and one application after granite has been installed, compacted and raked level. A third application of pre-emergent is to take place prior to Final Acceptance. Refer to the City of Chandler Notes for the rate of application. The Owner's representative is to be notified prior to pre-emergent applications.

5.03 DECOMPOSED GRANITE INSTALLATION

A. Landscape Planter Areas

1. Installed granite shall be raked to remove any irregularities. Installation shall provide a two-inch depth of decomposed granite after compacting. Methods of compacting shall be approved by the City Inspector. Unless otherwise specified in the drawings, granite finish grade shall be one and one-half inches below top of curb or sidewalk surfaces.

PART 6 - MISCELLANEOUS LANDSCAPE MATERIALS

6.01 PLANT MATERIAL FERTILIZER

A. Fertilizer shall be a slow release sulphur coated fertilizer with a guaranteed analysis of 16-6-8 applied at the rate of 10-lbs./1000 sq. ft.

6.02 TREE STAKING

A. 15-gallon and larger trees shall be staked in line with prevailing winds. Stakes shall be 2-inch round knot-free pine, length as required and installed as follows: Stakes shall be placed immediately adjacent to, but in no case through, the root ball, and penetrate at least 6 inches into undisturbed soil, be aligned vertically, be pointed at one end, and be

aligned so as not to interfere with the existing branch structure of the tree, extending 5 to 6 feet above grade. Vinyl for fastening trees to stakes shall be stapled to the wood stakes, or otherwise attached to prevent removal of the vinyl. Provide not less than two (2) stakes spaced equally around trees (see tree staking details).

PART 7 - CLEAN UP

7.01 CLEAN UP

A During landscape work, store materials and equipment where directed. Keep pavements and sidewalks clean and work area in an orderly condition. Protect landscape work and materials from damage due to landscape operations, operations by other contractors and trades and trespassers. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged landscape work as directed.

B. Remove all rubbish, equipment and rejected material daily from the site.

B. Protection includes all temporary fences, barriers and signs and other work incidental to proper maintenance.

PART 8 - INSPECTIONS

8.01 INSPECTIONS

A. When the landscape work is completed, including maintenance, the Engineer and Owner's Representative will make a pre-final and final inspection to determine acceptability. Where inspected landscape work does not comply with the requirements, replace rejected work and continue specified maintenance until re-inspected by the Engineer and found to be acceptable. Remove rejected plants and materials promptly from the project site.

PART 9 - MAINTENANCE, GUARANTEE AND REPLACEMENT

9.01 MAINTENANCE

A. Contractor shall begin maintenance immediately after entire plantings have been accepted by the Engineer.

B. Contractor shall maintain landscape work until final acceptance, but in no case less than 90 days after the work has been accepted by the Engineer.

C. NOTE: Instruct City/Park Maintenance personnel in the proper maintenance of landscape work.

9.02 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, equipment, tools, services, skill, etc., required to maintain the landscape in an attractive condition throughout the contract period. Maintenance of plant materials shall include, but not be limited to, pruning, weeding, mowing, fertilizing, irrigation programming, pest control, and landscaped areas debris clean up, per specifications. Maintenance shall be performed a minimum of once a week throughout the maintenance period.

9.03 WORK FORCE

A. Contractor Supervisor shall be responsible for the training and supervision of the maintenance personnel's performance of their duties during the maintenance period.

9.04 MATERIALS

A. All materials as noted (but not limited to this list) shall conform to the bid specifications:
1. Pre-emergent
2. Fertilizer
3. Plant material
4. Decomposed granite

9.05 TREE AND SHRUB CARE

A. Maintain trees and shrubs in a healthy, growing condition by performing necessary operations, including the following:
1 Pruning: Prune and shape only as necessary to maintain the usual form of the plant, to stimulate growth, to maintain growth within space limitations, and to maintain a natural appearance.
2 Staking: Stakes are to be inspected weekly and adjusted or removed as necessary.
3 Weed Control: In groundcover area, keep areas between plants free of weeds. Use recommended, legally approved, herbicides whenever possible. Avoid frequent soil cultivation.

9.06 GROUNDCOVER CARE

A. Foster attractiveness at all times by following these practices:

1 Granite Areas: Landscape granite shall be inspected weekly. Man-made debris shall be removed and weeds and grass controlled with chemicals.

2 Weed Control: Keep all landscape areas free of broadleaf or grassy weeds, with pre-emergent and/or selective contact herbicides. Cultivating or hoeing weeds is not a recommended practice. Project shall not be accepted until all noxious weeds are eradicated.

9.07 IRRIGATION SYSTEM

A. Watering shall be scheduled by supervising horticulturist and shall be at intervals and quantities consistent with seasonal requirements of the plant materials in the landscape.

B. Where practical, watering shall be done at night or early morning. Watering times shall be coordinated with the Owner.

PART 10 – GUARANTEE

10.01 GUARANTEE AND REPLACEMENT

A. Guarantee plant materials under this contract to be in good, healthy and flourishing condition of active growth at end of guarantee period. Replace dead plants and plants not in vigorous, thriving condition without cost to Owner immediately during maintenance period, and as soon as weather conditions permit during normal growing season during the guarantee period. Replace contract plantings that die back and lose form and size originally specified even if they have re-sprouted. Frost kill or damage caused by other than inadequate staking not covered by this guarantee. However, Contractor shall, if requested, make replacement at reasonable cost and include replaced plants within maintenance and guarantee of project. Except for failures beyond control of Contractor, such as neglect, damage by others, vandalism, and floods, make replacements of comparable quality, type, and size. Continue replacements until each plant has successfully established itself for required guarantee time period. A sum sufficient to cover estimated cost of possible replacement, but not exceeding 5 percent of contract price including materials and labor may be retained by Owner until replacement obligations are complete.

10.02 GUARANTEE AND MAINTENANCE TIME SCHEDULE

	Guarantee Period	Maintenance Period
Trees	One year	90 days

Shrubs	One year	90 days
Plants in Flats	One year	90 days

10.03 LANDSCAPE GUARANTEE AND MAINTENANCE PERIOD

A. Upon acceptance after maintenance period, furnish a written guarantee on all plant material agreeing to guarantee the continued growth of active plant material growth for the specified guarantee periods.

B. The Contractor shall inspect the landscape materials periodically during the guarantee period and shall notify the Engineer and Owner in writing, if, in the Contractor's opinion, the landscape materials are not receiving proper care.

10.04 LANDSCAPE ACCEPTANCE

A. Contractor shall notify Owner in writing when Contractor believes that the landscaping is substantially complete to begin the maintenance period. Notification shall be submitted in writing, through the General Contractor, and received by the Owner at least seven (7) days prior to the requested maintenance period observation. Upon subsequent observation and acceptance of landscaping by the Owner, the maintenance period start date shall be established. At completion of the maintenance period, the condition of work will again be observed by the Owner to determine acceptance and the start date of the guarantee period. There shall be no relationship of landscape acceptances and general project final acceptance.

Measurement and Payment:
Shrubs and trees will be measured as a unit for each item planted and will be paid for at the contract unit price each, which price will be full compensation for the work, complete in place. No payment will be made for shrubs and trees selected for inspection and not planted or for the care and protection of trees and shrubs prior to the beginning of the landscaping maintenance period, the costs being considered as included in the prices paid for trees accepted and paid for under this bid item.

Decomposed Granite will be measured by the square foot and will be paid for at the contract unit price per square foot, which price will be full compensation for the item, complete in place. Payment will include all required or requested samples, grading, compaction, pre-emergent herbicide, all erosion repair work and other related activities as described and specified herein, and as specified in the Project Plans or as required by City Representatives. No additional payment will be made for all erosion repair work or compaction of soil, as specified herein, the cost being considered incidental to this item.

ITEM NO. 15 SECTION 02511 CRUSHED AGGREGATE WITH STABILIZER

MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND CITY OF CHANDLER ENGINEERING DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS ARE HEREBY AMENDED TO INCLUDE THE FOLLOWING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes provisions for Crushed Aggregate with Stabilizer over prepared sub-base or sub-grade.

B. Prepared sub-base is specified in another Division 2 section.

C. Rolling of prepared sub-base and stabilized granite is included in this Section.

1.3 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division I Specification Sections.

1. Material Certificates signed by material producer and Contractor, certifying that each material complies with or exceeds specified requirements.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Use locally available materials and gradations that exhibit a satisfactory record of previous installations.

B. Aggregate: Shall be 1/8" minus decomposed granite, color to be 'Express Gold' or approved equal and meet all requirements as specified in Section 702 of MAG with the following additions. The decomposed granite shall

not contain lumps or balls of clay, caliche, organic matter or calcareous coating. The Contractor shall ensure that sufficient quantity is available from a single source to complete the project. Landscape Architect shall approve 1/2 cubic foot sample prior to ordering.

C. The screening requirements for the Crushed Aggregate with Stabilizer shall be as follows:

Sieve Size	Range of % Passing
3/8"	100
No. 4	95-100
No. 8	75-80
No. 16	55-65
No. 30	40-50
No. 50	25-35
No. 100	20-25
No. 200	5-15

D. Stabilizer for Aggregate: Shall be a non-toxic, organic binder available from Stabilizer Solutions, Phoenix, Arizona. Stabilizer shall be incorporated into the granite at a rate specified by the manufacturer or approved equal.

PART 3 - EXECUTION

3.1 SUBSURFACE PREPARATION

A. General: Remove loose material from compacted sub-base surface immediately before applying.

B. Roll prepared sub-base surface as approved by the manufacturer's representative. Vibratory tampers or compaction equipment is not permitted for rolling the granite.

C. Do not begin granite work until deficient sub-base areas have been corrected and are approved by the manufacturer's representative.

3.2 BLENDING STABILIZER

A. Blend stabilizer with aggregate as per manufacturer's recommendations

3.3 ROLLING

A. General: Begin rolling when mixture will bear roller weight without excessive displacement.

B. Compact mixture with rollers per the manufacturers specifications and as directed by the manufacturer's representative.

C. Protection: After final rolling, do not permit vehicular or pedestrian traffic or trail until it is approved by the Owner's representative.

D. Erect barricades to protect granite from traffic until mixture has cured.

3.4 AGGREGATE (DECOMPOSED GRANITE)

A. Granite shall be mixed with stabilizer In accordance with stabilizer manufacturer's instructions.

B. The granite shall be placed in 3" lifts over the subgrade per the manufacturer's recommendations. Each lift shall be rolled to eliminate collapsible pockets of granite. The granite shall not be mixed with and shall be protected from contamination by on-site soil materials and other undesirable materials prior to installation any time during the installation operation. Granite which, in the opinion of the Landscape Architect, has undesirable contaminants shall be removed from the project. When completed, the granite shall be at the maximum level of compaction (100% min.) and shall match the proposed grades, elevations and typical sections shown on the plans.

3.5 FIELD QUALITY CONTROL

A. A manufacturer's representative shall be present on site at all times during the granite installation operations. The representative shall advise the Landscape Architect on matters relating to the quality and performance of the Contractor.

B General: Testing for compliance with requirements for thickness and surface smoothness will be done by manufacturer's representative and/or the Owner's testing laboratory. Repair, remove or replace unacceptable surface as directed by Landscape Architect.

C. A sample area selected by the Landscape Architect, approximately 8' x 8' in size shall be prepared for approval. This area, once approved will become the test panel for granite installations on the project. The approved section may remain as part of the completed work.

D. Thickness: In-place compacted thickness tested in accordance with manufacturer's specifications will not be acceptable if exceeding the following allowable variations:
   1. Finish Surface: Plus or minus 1/4 Inch.

E. Surface Smoothness: Test finished surface course for smoothness, using 10-foot straightedge applied parallel with and at right angles to centerline of trail. Surfaces will not be acceptable if exceeding the following tolerances for smoothness:
   1. Finish Surface: 1/8 inch.

F. Check surface areas at intervals as directed by Landscape Architect.

Measurement and Payment:
Crushed Aggregate with Stabilizer shall be measured by the square foot in place within the limits shown on the Plans as measured in the field.

Payment for Crushed Aggregate with Stabilizer shall be made on the basis of the price bid per square foot. This price shall be considered full compensation for the item complete including labor, materials, equipment, and other items necessary and incidental to the construction of stabilized granite including excavation to account for finished grade, subbase material and compaction, placement of the stabilized decomposed granite, other labor and materials required to construct the work, and maintenance.

ITEM NO. 16 SECTION 321813 SYNTHETIC TURF (INC PREPARATION AND BASE)

PART 1 – PRODUCT

186SG Bermuda Rugged by Shaw Sports Turf or approved equal, Manufacturer's Synthetic Turf Specification and Materials.

PART 2 – OVERVIEW

A. Made in the USA with high quality components to replicate natural grass
B. UV resilient
C. 8-Year warranty
D. 30 inches per hour drainage capacity
E. Heavy metal free

PART 3 - TURF DETAIL

A. Pile/Face Weight: 40 ounces
B. Pile Height: 1.5 inches
C. Tuft Gauge: 1/2 inch
D. Total Weight: 67 ounces
E. Colors: Field Green/ Field Olive with Field Green/ Jute Hatch

PART 4 - FIBER DETAIL

The fiber shall be 100% non-abrasive polyethylene designed specifically for outdoor use and treated with UV inhibitor and stabilizers to resist the effects of ultraviolet degradation, heat, foot traffic, water and airborne pollutants. The fiber shall contain no toxic substances or heavy metals. The fiber shall meet the following requirements:

A. Primary Yarn Type: Polyethylene Monofilament
B. Denier: 8,100
C. Thickness/Shape: 240 micron star
D. Thatch Yarn Type: Texturized Polyethylene Monofilament
E. Denier: 6,300
F. Thickness/Shape: 120 micron rectangle

PART 5 - BACKING DETAIL

The primary backing shall be a heat and UV resistant product. The primary backing shall provide dimensional stability in all directions to prevent stretching, and distortion upon installation. The secondary coating shall saturate the primary backing and effectively lock the fiber tufts in place. The backing shall meet the following requirements:

A. Primary Backing: 13 pic & 13 pic poly back
B. Weight: 7 ounces per square yard
C. Secondary Coating: Urethane 20 ounces per square yard
D. Drainage Perforations: 3/16 inch diameter at four inches or less on-center on both axis

PART 6 - ROLL DETAIL

A. Width: 15 feet

B. Length: 100 feet (also available by the lineal foot)

C. Shipping Weight: Approximately 1/2 pound per square foot

D. Roll Diameter: Approximately 2 feet

PART 7 - INFILL DETAIL

A. Type: Crumb Rubber

B. Application Rate: 1-2 pounds per square foot

Measurement and Payment:
Synthetic Turf will be measured as a unit for be per square foot as measured in the field by survey. Payment for turf shall be based on the price bid per square foot and shall be full compensation for site preparation including subgrade preparation, purchase and delivery, placement, maintenance and warranty, including materials, equipment, and labor needed to complete the work as shown on the plans.

ITEM NO. 17	**SECTION 03000 STANDARD GRAY CONCRETE SIDEWALK/ RAMP - 4"THICK (INC QC TESTING PER MAG)**
ITEM NO. 18	**SECTION 03000 INTEGRALLY COLORED CONCRETE STEPS (INC QC TESTING PER MAG)**
ITEM NO. 19	**SECTION 03000 CONCRETE THEME WALL**
ITEM NO. 20	**SECTION 03000 CONCRETE PERMITER WALL**
ITEM NO. 21	**SECTION 03000 SLOPED GRADE/ RETAINING WALL**
ITEM NO. 22	**SECTION 03000 INTERPRETIVE/ DONOR COLUMN**
ITEM NO. 23	**SECTION 03000 JET SUPPORT COLUMN**
ITEM NO. 24	**SECTION 03000 SEAT WALL**
ITEM NO. 25	**SECTION 03000 CONCRETE HEADER (INC QC TESTING PER MAG)**

SECTION 03001

CONCRETE (Sidewalks, Ramps, Site Details and Walls)

MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND CITY OF CHANDLER ENGINEERING DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS ARE HEREBY AMENDED TO INCLUDE THE FOLLOWING:

PART 505 - CONCRETE STRUCTURES

505.3 FORMS

The Contractor shall use the following references: ACI 347 - Recommended Practice for Concrete Formwork, where not in conflict with MAG Uniform Standard Specifications, requirements of Project, or requirements of Contractor, is suggested as generally acceptable. ACI 301 - Specification Structural Concrete for Buildings. ACI 506 - Application of Shotcrete. Have publications available.

All flatwork grades shall be as shown on the Drawings and shall drain surface water toward the bowl drains and the floor outlet ramp.

505.5 PLACING REINFORCEMENT

Fabrication, placement, splicing and welding in accordance with CRSI standards, ACI 318 and Drawings. Clear concrete coverage unless otherwise noted shall be as follows:

Cast against earth: 3" Exposed to weather: Typical 2"; No. 5 and smaller, 1.5"

505.6.1 JOINTS

Construction joint (C.J.) or keyed joint (K.J.) may be required for construction convenience or concrete placement. C.J. or K.J. may not be shown on Drawings, but may be directed or requested by Contractor. Location must be approved. Provide form, key, dowels, continuous reinforcing, water stop, thickened slabs as required.

Expansion joint filler shall have a typical thickness of 1/2" exterior, 1/4" interior. Typical exposed joint shall have ASTM 1752 Type III self-expanding cork. Typical concealed joints shall be ASTM 1751 preformed. Typical with sealants required shall be ASTM 1752 Type II cork or Type I sponge rubber used only at the basketball court. No asphalt sealants shall be used. Expansion joint shall be located as shown on Drawings.

Shrinkage joints (control joints) required for contraction or shrinkage crack control may be sawn when plan and location approved or as shown on the Drawings.

PART 505 - CONCRETE STRUCTURES AND PART 525 - PNEUMATICALLY PLACED MORTAR

The following CSI format Specification Sections 03100 - FORMWORK, 03200 - REINFORCEMENT, and 03300 - CAST-IN-PLACE CONCRETE, shall be added to the MAG Uniform Standard Specification for Public Works Construction and be incorporated as part of Section 505 and Section 525.

SECTION 03100

FORMWORK (Sidewalks, Site Details, and Walls)

MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND CITY OF CHANDLER ENGINEERING DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS ARE HEREBY AMENDED TO INCLUDE THE FOLLOWING:

PART 1 - GENERAL

1.01 REFERENCES: ACI 347 Recommended Practice for Concrete Formwork, where not in conflict with Specifications, requirements of Project, or requirements of Contractor, is suggested as generally acceptable. ACI 301 Specification Structural Concrete for Buildings. ACI 506 Application of Shotcrete. Have publications available.

1.02 NOTICE: This specification establishes minimum requirements for reasons of appearance, construction means and methods. Construction safety, means, methods, loads, shoring, reshoring or Contractor's responsibility to design, install, inspect, use, and remove are not part of this Specification. Provide engineering necessary to achieve Work and protect Project. Architectural approval or observation is not required.

1.03 COORDINATION:

a. Contractor's safety and structural requirements which exceed requirements of engineering notations on Drawings or this Section govern.

b. Engineering notations on Drawings which exceed requirements of this Section govern.

1.04 SUBMITTALS: Submit product data for all leave-in materials.

PART 2 - PRODUCTS

2.01 GENERAL: Non-staining, non-corrosive, compatible with concrete and finishes strengths, and bonds.

2.02 FORMWORK:

a. Material and Design: Adequately rigid for forming concrete and holding embedded Work in shape and location required. Stop major leakage of forms, decks, or other construction by taping or similar means. Removable forms remain property of Contractor. Remove from Project when need is satisfied.

b. Appearance: Where concrete is exposed, form effect on appearance as approved. Control joint marks, surface texture, shapes as shown.

c. Coordination: Coordinate with concrete and embedded materials and provide as they are required for cleanliness, dimension, stability, absorption, tightness, and compatibility

d. Up to (2) samples shall be poured to verify the vertical finish form work. Rough exposed joints shall be ½" wide and extrude a minimum of ¼". Wood grain shall be visible with relief of approximately 1/16". Samples shall be approved prior to installation of final construction. The samples remain in place until final construction is approved. Samples will be removed at contractor's expense

2.03 CONSTRUCTION JOINT (C.J.) OR KEYED JOINT (K.J.): Joint required for construction convenience or concrete placement. May not be shown on Drawings. May be directed. May be requested by Contractor. Location must be approved. Provide form, key, dowels, continuous reinforcing, water stop, thickened slabs as required.

2.04 SIDEWALK EXPANSION JOINTS: ASPHALT IMPREGNATED FIBERBOARD with Contie removable joint caps and polyurethane sealant.

2.05 EXPANSION JOINT (E.J. OR EXP. JT.) FILLER: Typical thickness ½" exterior, ¼" interior with#1020 Expansion Joint Cap by BoMetals, Inc., 3033 Springs Industrial Drive, Powder Springs, GA 30127, 1-800-862-4835. Typical exposed, asphalt impregnated fiberboard (compressible) with back rod and polyurethane sealant (sealant and basketball courts only). Typical concealed on interior, ASTM 1751 preformed fiberboard (compressible).

2.06 SHRINKAGE JOINT (S.J.) (Control Joint): Joint required for contraction or shrinkage crack control, no form required. Removable if formed. Exterior flatwork paving may be sawn when plan and location approved.

2.07 FORM RELEASE AGENT: Contractor's choice subject to appearance and compatibility.

2.08 MEMBRANE (VAPOR BARRIER): Polyethylene film, conforming to ASTM C-171. Color, clear. Minimum thickness is 6mil. Maximum moisture loss 0.055 g./cm. sq. in accordance with ASTM C-156. Provide maximum widths giving consideration to installation conditions.

2.09 MISCELLANEOUS ACCESSORIES: As shown or required.

PART 3 - EXECUTION

3.01 FABRICATION: Sufficiently leak resistant, sufficiently movement resistant and true to shape elevations and dimensions. Complete. Slope to Drains.

3.02 JOINTS:

a. Construction:

1. Use only when necessary or as shown on Drawings.

2. Structural, horizontal members: Locate at mid-span.

3. Keyed: Slabs at structural.

b. Expansion Joint (E.J.) in Slabs-on-Grade and Columns:

1. Where required for thermal expansion.

2. Where butts another solid.

3. At stress locations.

4. As detailed or shown.

5. Slightly edge tool at exposed locations.

6. At sealant, design as required for sealant (i.e., width, depth, shape).

c. Shrinkage Joint (S.J.): Refer to Cast-In-Place Concrete Section.

d. Sawn Joint: Refer to Cast-In-Place Concrete Section.

PART 4 - FLATWORK

4.01 GRADE: As shown on Drawings, to drain surface water toward bowl drain.

4.02 SLAB ON GRADE: Form with flat bottom and joints in manner to allow unrestricted shrinkage toward centroid. Joint to provide near square dimensions.

1. Recesses, Drains: Slope floors to drain, drain trenches, away from Skate Track.

2. Membrane (Vapor Barrier) Curing Sheet.

2.1 Curing Sheet: Coordinate with concrete curing. Membrane may be placed at Contractor's option under slab-on-grade for balancing concrete curing to protect against curling and delayed shrinkage cracks.

2.2 Installation: Use largest practical width. Seam by lapping 6" and taping continuously, or by folding over twice similar to sheet metal standing seam, wire stapling, and laying flat. Turn up full depth at terminations. Turn up and seal with tape at penetrations. Allow fullness to prevent ruptures. Replace where construction operations perforate excessively.

4.03 ACCESSORIES: Install all accessories placed under this Section in accordance with manufacturer's recommendations. Cooperate with other trades placing Work in or beneath concrete.

4.04 REMOVAL: When approved by Contractor's Engineer or when full design strength is established by approved tests.

SECTION 03200

REINFORCEMENT (Site Details and Walls)

MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND CITY OF CHANDLER ENGINEERING DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS ARE HEREBY AMENDED TO INCLUDE THE FOLLOWING:

PART 1 - GENERAL

1.01 REFERENCES: Work noted in accordance with following basic reference specifications and standards unless otherwise specified. Have available on-site.

A. ACI-301, "Specification for Structural Concrete for Buildings."

B. ACI-315, "Details and Detailing of Concrete Reinforcing."

C. ACI-315R, "Manual of Engineering and Placing Drawings for Reinforced Concrete Structures."

D. ACI-318, "Building Code Requirements for Reinforced Concrete."

E. CRSI, "Manual of Standard Practice."

1.02 COORDINATION:

A. Contractor's safety and structural requirements which exceed requirements of engineering notations on Drawings or this Section govern.

B. Engineering notations on Drawings which exceed requirements of this Section govern.

1.03 SUBMITTALS: Submit reinforcing plans, elevations, schedules, and bonding diagrams showing fabricator's complete details and erector's complete placement plans. Submit independent laboratory certification of tensile strengths of non-domestic material. Welding only permitted when submitted in advance.

PART 2 - PRODUCTS

2.01 REINFORCEMENT BARS AND FABRIC:

A. Bars: As noted on plans. Typical, ASTM A615. Typical, Fy=40 KSI; No. 6 and larger, Fy=60 KSI. Welded reinforcing ASTM A706. Deformed with supplementary bend requirements.

B. Bar Mats: ASTM A614. Typical, Grade 40, deformed, clipped. Size, spacing, and other types as noted on Drawings.

C. Wire: ASTM A82.

2.02 BAR SUPPORTS AND ACCESSORIES: As required to complete Work in accordance with CRSI Manual. Non-stain types where subject to staining exposed Work. Reinforcement supported from the ground shall rest on precast concrete blocks not less than 4 inches square, and having a compressive strength equal to the specified compressive strength of concrete being placed. No leave-in wood supports.

PART 3 - EXECUTION

3.01 GENERAL: Fabrication, placement, splicing and welding in accordance with CRSI standards, ACI 318 and Drawings. Clear concrete coverage unless otherwise noted.

A. Cast against earth: 3"

B. Exposed to weather: Typical 3"; No. 5 and smaller, 1.5"

C. Column Ties: 1.5"

3.02 MARKING: Tag all elements to coordinate placement Drawings with materials.

3.03 CLEANING: Before placing, clean free of mill and rust scale and any material reducing bond.

3.04 PLACEMENT: Secure and support against displacement and sag, including footing reinforcing and fabric.

3.05 SPLICING: Minimum not less than noted on Drawings, in accordance with referenced documents, locations subject to approval, and not less than following:

A. BARS: 40 diameter unless otherwise noted. Place in contact and tie with 16 ga. steel wire. Stagger, none at maximum stress point. Bars continuous unless noted or location approved. Provide bent bars around corners. Dowel verticals of concrete into foundation. Dowel verticals of masonry into concrete.

B. FABRIC: Lap one full wire space plus 2"; minimum 9" total. Tie minimum 24" o.c. with 16 gage steel wire.

C. WELDING: Use only as noted on Drawings and only when approved. Low hydrogen electrodes in accordance with AWS. No tack welding without prior review of procedure by Engineer.

SECTION 03301

CAST-IN-PLACE CONCRETE (SITE AND SITE STRUCTURES)

MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND CITY OF CHANDLER ENGINEERING DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS ARE HEREBY AMENDED TO INCLUDE THE FOLLOWING:

PART I – GENERAL

1.01 WORK SPECIFIED HEREIN

A. Cast-in-place concrete as indicated on the Drawings and as specified including, but not limited to, the following:

1. Sidewalks, curbs and gutters.
2. Site structures including, but not limited to, site lighting supports, electrical and mechanical equipment support pads, and other site furnishing and equipment requiring cast-in-place concrete items.
3. Seat Walls and Dedication Plaque Column

1.02 SUBMITTALS

A. Mix Design: Submit mix design for each class of concrete to the Owner's Representative for review.

B. Product Data: Submit Manufacturer's Specifications and performance data for accessory products.

C. Shop Drawing: Submit shop drawings showing proposed location of construction joints, control joints and expansion joints. Obtain approval of same prior to construction.

D. Samples: Submit 12-inch long sample of expansion joint material.

1.03 QUALITY ASSURANCE

A. Standards:

1. Standard for measuring, mixing, transporting and placing of concrete shall be ACI-301 and ACI-304.
2. Standard for measuring, mixing and delivery of ready mixed shall be ASTM C94, except that time in mixer after water has been added at batch plant is limited to 1-1/2 hours.
3. Job-mixed concrete shall be subject to Landscape Architect's review of design, mixing and handling procedures.

B. Field Samples

1. Provide on-site sample(s) of each type of exposed flatwork and vertical seatwall concrete finish showing texture and color before proceeding with finish to be used on this Project.
2. Sample(s) for flatwork concrete shall be minimum 4' x 4' square and have at least one longitudinal and one transverse joint. Contractor shall provide up to three (3) sample panels of flatwork. The mock up may not be considered part of the final construction. Contractor will be required to remove and properly dispose of the mock-up at the completion of construction as directed by the Engineer / Landscape Architect.
3. Construct sample panels in ample time to allow for finishing and curing before requesting Owner's representative to review.
4. Construct where directed and prepare successive sample panels as required until finish acceptable to Owner's representative is produced.
5. Since sample panels will constitute a basis of acceptance or rejection of the completed Work, do not remove sample panels until

authorized in writing by the Landscape Architect. Dispose of sample panels in a legal manner when authorized.

1.04 PROJECT CONDITIONS

A. Rain protection: Do not place concrete during rain unless adequate protection has been provided.

B. Cold weather protection:
1. Comply with ACI-306R.
2. Provide sufficient protection material in advance of the time when daily mean temperatures are expected to drop below 40°F (4°C).
3. Provide strong and secure weather protection around the building for at least one story above and one store below the floor being concreted to prevent infiltration of wind.
4. Distribute unit heaters throughout the floor to maintain temperatures between 50°F (10°C) and 70°F (2l°C).
5. Obtain one temperature reading of air at floor level for each 600 square feet of floor area just prior concreting and provide additional heat should the measured temperature be less than 50°F (10°C).
6. Record and submit temperature readings for Owner's representative's review no later than 24 hours after concreting.

C. Hot weather protection:
1. Comply with ACI-305R.
2. When air temperature or form temperature exceed 100°F (38°C), control concreting as follows.
a. Cool forms to a maximum 80°F (27°C).
b. Cool concrete to a maxi mum 70°F (21°C) leaving the mixer;
c. Adjust concrete mix to retard set with retarding admixture if included in design mix and adequately tested; and
d. Take additional measures as directed by concrete supplier.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Portland Cement: ASTM C150, Type 11, alkali content not to exceed 0.6 percent. Use one brand and type of cement throughout Project unless otherwise specified.

B. Admixtures:
1. Air entraining admixture: ASTM C260.

2. Use of calcium chloride is not permitted.
3. Use of fly ash is not permitted.
4. Use set-retarding admixtures during hot weather only when approved by Landscape Architect.
5. Water: Potable

D. Integral Color: Davis Colors

1. Wire Brush Finish Concrete– Davis Color No. 677 – "Kailua"
2. Wire Brush Finish Concrete– Davis Color No. 5447 – "Palomino"
3. Wire Brush Finish Concrete– Davis Color No. 5084 – "Spanish Gold"
4. Wire Brush Finish Concrete– Davis Color No. 61078 – "Adobe"

2.02 ACCESSORIES

A. Bonding Agent: Sikastix 300 series; as manufactured by Sika, EucoWeld or EucoBond as manufactured by Euclid.

B. Non-Shrink Grout:

1. Premixed or prepackaged, non-metallic, non-gaseous, bleed free compound; non-shrink when tested in accordance with ASTM C 1107, Grade B at a fluid (flow cone) consistency of 20 to 30 seconds.
2. Attain minimum compressive strength of 7,500 psi (51 Mpa) in 28 days at above fluid consistency.
3. Fluid grouts: Remain workable, flow through flow cone after 30 minutes with slight agitation, in temperatures from 40 to 90 degrees F (4 to 32 degrees C).
4. Crystex as manufactured by L&M Construction Chemicals, Inc. shall be an acceptable product.

C. Formed Construction Joint: Standard design plastikey, tongue and groove key joint; 3-1/2 inch vertical dimension for 4 inch slabs.

D. Preformed Expansion Joint Filler: ASTM D994.

E. Liquid Curing Compound:

1. VOC compliant, ASTM C309, Type 1, Class B; acrylic type.
2. W.R. Meadows Sealtight VOCOMP-20, L&M Construction Chemicals Dress & Seal WB or Dayton Superior J-1 8 are acceptable products.
3. Verify that specified curing compound is compatible with floor finish material(s), integral color(s) and adhesive(s) that will be applied to floor surface prior to delivery of curing compound to jobsite. If it is

determined that the curing compound is not compatible with the floor finish material(s), integral colors(s) and adhesive(s) that will be applied to floor surface, Contractor shall immediately notify Architect.

F. Sealer: VOC compliant, acrylic copolymer type.
1. Interior: W.R. Meadows Sealtight VOCOMP-25, Euclid Flor Seal VOX,
2. L&M Construction Chemicals Dress & Seal WB #30 or Dayton Superior J-24 are acceptable products.
3. Exterior: Euclid Diamond Seal VOX, or L&M Construction Chemicals Lumiseal WB are acceptable products.

G. Leveling Agent: Sonneborn Sonoflow, Euclid Flo-Top, Ardex K-15, L&M Construction Chemicals Levelex or Dayton-Superior Levelayer 1 are acceptable products.

H. Abrasive Aggregate: Sonneborn Frictex NS, Euclid Non-Slip, L&M Construction Chemicals Grip-it, or Dayton-Superior Emery Non-Slip are acceptable products.

I. Concrete Accessories: Gateway Engineering Company, Dayton-Superior Corporation, or Burke Concrete Accessories.

J. Monomolecular film: L&M Construction Chemicals or Master Builders Confilm.

2.03 MIXES

A. Design of Mixes: ACI 301 and ACI 304, except as otherwise specified.

B. Selection of proportions for normal weight concrete: ACI 301.

C. Mix and deliver ready-mix concrete in accordance with requirements of ASTM C94, Option A.
1. Not more than 90 minutes shall elapse from time water is introduced into the concrete mixture until completion of placement.
2. Do not add water to mix that has stiffened to increase its workability.
3. At no time shall concrete mix exceed a bulb thermometer reading of 90 degrees F. (32 degrees C) or over.
4. Use ice or other method as reviewed by Owner's Representative, to keep concrete below 90 degrees F. (32 degrees C) temperature.

D. Use of water reducing admixture if needed in concrete shall be submitted for approval. Proportion in accordance with Manufacturer's recommendations. Delivery tickets shall state the amount and kind of admixture.

E. Air Entraining Admixture: Concrete such as exterior slabs, perimeter foundations, and exterior curbs and gutters which will be subject to freezing temperatures while wet during the life of the structure, shall have a water cement ratio not exceeding 0.53 and contain entrained air in accordance with ACI 212.3R.

F. Compressive strength (28 days); As shown in Grading and Drainage Drawings.

G. Slump:
1. For consolidation by vibration: As shown on Drawings.

H. Mix coloring agent for integrally colored concrete in strict compliance with the Manufacturer's printed instructions.

PART 3 - EXECUTION

3.01 PREPARATION

A. Prior to placing concrete:

1. Clean equipment involved.
2. Remove debris and foreign material from forms.
3. Remove concrete laitance from reinforcing steel.
4. Wet wood forms and masonry units in contact with concrete.

B. No wood other than built-in bucks or nailing blocks will be permitted to remain permanently inside the forms.

C. Coordinate the necessary Trades as required to provide the sleeves, bolts, anchors, holes, etc., to be built in.

3.02 PLACING OF CONCRETE

A. Concrete Work shall be performed in accordance with ACI-301 except as amended by this Section.

B. Convey concrete from the mixer to place of final deposit by methods, which will prevent segregation of aggregate or loss of material. Place

concrete at such a rate that concrete is at all times plastic and to insure a practically continuous flow of concrete. Concrete not in place 1 1/2 hours after water has been added at batch plant may be rejected by Landscape Architect.

C. Place concrete as nearly as practicable in its final position to avoid segregation due to re-handling or flowing. Do not deposit concrete that has partially hardened or been re-tempered.

D. Do not place concrete during rain unless adequate protection has been provided.

E. Thoroughly compact concrete by suitable means during the placing, and work around the reinforcement and embedded items into the corners of the forms.
   1. Use vibrators to aid in the placement of the concrete, operated by experienced personnel.
   2. Design forms to withstand the action of the vibrators.
   3. Keep at least one spare operating vibrator on the job at all times during concrete operations.

3.03 CONSTRUCTION JOINTS, CONTROL JOINTS and EXPANSION JOINTS

A. Place construction joints, control joints and expansion joints where required to ensure that undesirable thermal and shrinkage cracking of slabs is minimized.
   1. See Drawings for locations of construction joints, control joints and expansion joints in slabs-on-grade and in topping pours.
   2. If drawings do not indicate locations, verify with Owner's Representative prior to placement of slabs-on-grade and topping pours.

B. Additional reinforcing may be required at some construction and control joints, and shall be supplied and installed at no additional cost.

C. Reinforcing shall be continuous though construction joints and control joints. No concrete pour shall be longer than 100 feet (30,480mm) or more than 4,000 square feet (375m2) in area. Provide shear keys as detailed.

D. At exterior slabs-on-grade provide 1/2 inch (12mm) wide control joint wherever slabs abut vertical construction elements whether indicated or not.

3.04 FINISHING VERTICAL (FORMED) SURFACES

A. Formed surface finishes:

1. Pits, tunnels, mechanical rooms and concealed surfaces: Remove fins, patch tie holes.
2. Interior exposed surfaces and exterior surfaces: Remove fins, patch tie holes, stone joint marks and out-of-plane surfaces to within 1/16 inch of flush, to produce uniform, dense and smooth concrete.

3.05 FINISHING HORIZONTAL SURFACES

A. Rake concrete into place, screed and compact with a light tamp, except do not tamp topping and slabs not on grade. Screed with sawing motion and float surfaces to bring fines to the top.

B. Mix and apply monomolecular film in accordance with manufacturers printed instructions immediately after floating. In extreme drying conditions, apply additional material as needed. Apply lightly on hard to trowel floor areas.

C. When concrete has hardened sufficiently so that excess fines will not be brought to the surface, trowel slab with steel trowel to a smooth surface free of pinholes and other imperfections. A mechanical trowel rotating steel blades, approve by Architect, may be used for this operation.

D. Use a small radius edger on edges of exposed Work. Use a deep cutting, scoring tool to provide scoring as indicated.

E. Exterior flatwork to receive finishes as indicated on the Drawings.

F. Finished floors to meet 1/4 inch in 10 feet tolerance unless notes elsewhere conflict. Then, use the more strict tolerance.

3.06 SLABS

A. Saw cut pattern indicated on Drawings, Use 3/16 inch thick blade, cutting 1/4 inch minimum depth of slab thickness.

B. Slope to drains 1/4 inch per foot nominal across entire room or area to be drained.

3.07 SPECIAL FINISHES

A. General:

1. Obtain cement and aggregates from a single source for specialty concrete finishes to provide uniformity in appearance and color.

2. Place concrete at a maximum slump of 5 inches. Rake concrete into place, screed and float. Do not tamp.

B. Finish:

1. Medium Broom Finish. This pattern shall be accomplished by pulling a broom across the concrete prior to final set. The pattern shall be uniform when viewed in any direction. The pattern shall be perpendicular to the primary direction of pedestrian traffic.
2. Integral Color Exposed Aggregate Finish: smooth pea gravel, round river run type rock 3/(not crushed). Expose the surface through washing and brushing or using a surface retarder. Do not sandblast or shotblast. The smooth shape and full color intensity of the aggregate is essential.

C. Protection: Protect specialty finished concrete slabs from damage, by covering with a one-inch layer of clear, dry sand. Apply sand after concrete has properly cured and will not be damaged by this operation. Provide planking whenever scaffolding or wheeled equipment may be required to be erected over slabs. Damage to slabs prior to acceptance of the Work will be cause for rejection of slabs and replacement will be required.

3.08 REPAIR OF SURFACE DEFECTS

A. Modify or replace concrete not conforming to required lines, detail and elevations.

B. Repair or replace concrete not properly placed, resulting in excessive honeycombing and other defects. Do not patch, repair or replace exposed architectural concrete except upon express direction of Owner's Representative.

C. After forms are removed, fill tie rod holes, correct honeycomb spots, remove fins and clean and finish damaged surfaces. Wipe off excess mortar and rub to match adjoining surfaces.

D. When excessive honeycombing is revealed, remove the defective material immediately after stripping forms to a depth of 3/4 inch to 1 inch. Cut edge of area perpendicular to surface to avoid feathered edges. Saturate with water for several inches beyond cutout and brush-in a grout consisting of equal parts Portland Cement and sand. Follow immediately

with the patching mortar. Leave the patch slightly higher than the surrounding surface. After an hour or two, finish flush with the adjoining surface. Wipe and rub patch to match adjoining surfaces. Keep patches moist for 7 days.

E. Patching mortar shall consist of the same materials and proportions as the original concrete except that the coarse aggregate shall be omitted. When color match is required adjust to produce a finished color to match adjoining concrete surfaces.

F. Cracks caused by expansion, shrinkage and the like that occur in natural color concrete up through final acceptance of building shall be carefully patched with floorstone, epoxy grouting mortar or other method acceptable to the Architect.

3.09 CURING

A. Protect freshly deposited concrete from premature drying and maintain without drying at a relatively constant temperature for the period of time necessary for the hydration of the cement and proper hardening of the concrete.

B. Curing shall immediately follow the finishing operation, Keep concrete continuously moist for at least 7 days using one of the following materials or methods.
   1. Polyethylene film securely held in place.
   2. Liquid curing compound applied at a rate of 200 square feet per gallon at broom finished concrete, 600 square feet per gallon at troweled concrete, unless otherwise noted in manufacturer's printed instructions.

C. Prevent rapid drying of the concrete at the end of the curing period.

D. During the curing period, protect the concrete from damaging mechanical disturbances; particularly load stresses, heavy shock, and excessive vibrations. Protect finished concrete surfaces from damage caused by construction equipment, materials or methods.

3.10 LEVELING AGENT

A. Apply leveling agent to correct unsatisfactory floor surface due to undue settlement, shrinkage or cracking.

B. Apply material when, in the opinion of Architect, it is necessary to provide an acceptable surface.

C. Application to be in accordance with Manufacturer's directions.

3.12 FLOOR HARDENER

A. Where indicated on Drawings, provide 2 coats of hardener. Surface must be clean, dry and free of loose dirt, oil, wax, sealers, curing and parting compounds, and other foreign matter. Apply each coat in strict accordance with Manufacturer's instructions.

3.13 FIELD QUALITY CONTROL

A. Tests: Inspection and testing of concrete mix will be performed by a testing laboratory in accordance with Section 01400.
   1. Provide free access to Work and cooperate with appointed firm.
   2. Tests of cement and aggregates may be performed to ensure conformance with specified requirements.
   3. Four concrete test cylinders shall be taken for every 100 or less cubic yards of concrete placed. One cylinder shall be tested after 7 days for information. Test two cylinders after 28 days. Hold one cylinder for additional information, as required.
   4. Take one additional test cylinder during cold weather concreting, and cure on job site under same conditions as concrete it represents.
   5. Take one slump test for each set of test cylinders taken.
   6. Concrete which does not meet the compressive strength requirement at 28 days will be rejected and removed from the Project, and disposed of in a legal manner.

3.14 PROTECTION

A. Protect finished surfaces from stains or abrasions. Protect surfaces or edges by leaving forms in place or by providing temporary covers. Protect concrete from rain, flowing water or mechanical injury.

B. Protect floor slabs from the droppings of plaster, paint, dirt, and other marring by covering with polyethylene plastic sheet, well lapped and sealed. Maintain covering in good condition until danger of damage is past.

Measurement and Payment:
Standard Gray Concrete Sidewalk / Ramp - 4" Thick (Including QC Testing per MAG) and Integrally Colored Concrete Steps (Including QC Testing per MAG) will be

measured per square foot and will be paid for at the contract unit price per square foot, which price will be full compensation for the work, complete in place.

Measurement and Payment:
Concrete Theme Wall, Concrete Perimeter Wall and Sloped Grade/ Retaining Wall and Seat Wall will be measured by the linear foot and will be paid for at the contract unit price per linear foot, which price will be full compensation for the work complete in place.

Measurement and Payment:
Interpretive/ Donor Column and Jet Support Column will be measured as a unit for each item constructed and installed and will be paid for at the contract unit price each, which price will be full compensation for the work, complete in place.

Measurement and Payment:
Concrete Header (Inc QC Testing Per MAG) will be measured by the linear foot and will be paid for at the contract unit price per linear foot, which price will be full compensation for the work complete in place.

ITEM NO. 26 SECTION 323100 HANDRAIL AT RAMPS AND STEPS (WALL MOUNT)
ITEM NO. 27 SECTION 323100 HANDRAIL AT STEPS (FREE STANDING)

Description:
The work under this item will consist of furnishing all materials, labor, and equipment necessary to construct handrails at steps and walls of the type at all locations as specified in the Project Plans.

Materials:
The manufacturer shall reference the following:

ASTM A 36 — Structural Steel, Bars, Flats and Shapes
ASTM A 123 — Zinc (Hot-dipped Galvanized) Coatings
ASTM A 500 — Steel Structural Tubing in Rounds and Shapes

Posts and rails shall be manufactured from tubing meeting the requirements of ASTM A 513 or A 500 Grade B.

Solid steel bars, flat plates and shapes shall be manufactured from steel conforming to the requirements of ASTM A 36.

Finish shall be as specified on the Project Plans or approved equal.

Submittals
Contractor shall submit shop drawings and literature prior to installation. Approved shop drawings shall become the basis for acceptance of the work.

Delivery, Storage, and Handling
Deliver materials to the job site in good condition and properly protected against damage to factory-finished surfaces.

Store materials in a clean, dry location and in such a way as to avoid damage, especially from dust, chemicals and moisture in the air by covering with protective materials. Handle materials carefully on the job site to protect factory finishes.

Construction Requirements:
The contractor must be familiar with the construction methods and materials involved in metal railing installation.

Steel used in the manufacturing of posts and rails shall conform to the ASTM standards specified and shall be new prime material.

Posts and rails shall be of welded construction. Layout and welding shall be done by experienced craftsmen. Welds shall be made by the gas metal arc method and welds shall be neat, clean and of the sizes indicated on the drawings. All flush welds shall be ground smooth.

After fabrication railings shall be power washed in a phosphoric acid solution, rinsed and dried.

The Contractor shall layout railings in accordance with the Plans, shop drawings, and all applicable requirements and codes.

The contractor shall verify any grade changes or surface irregularities.

Discrepancies between the approved shop drawings and field conditions must be approved by the Chandler Representative prior to proceeding with the installation.

Railings shall be set plumb and level at spaces shown on the Plans and Shop Drawings. Footings shall be of the sizes indicated. Post caps shall be as indicated on the drawings.

Field welding shall be a complete 360 degree (all four sides) and shall be the size indicated on the approved Shop Drawings. Welds shall be cleaned and coated with a primer the same day the welding is performed. Bolted connections shall use bolts and tabs of the size indicated on the drawings. After tightening bolt, threads shall be peened.

All field welds and any abrasions to factory coatings shall be thoroughly cleaned and touched up by the Contractor.

Measurement and Payment:
Handrail at Ramps and Steps (Wall Mount) and Handrail at Steps (Free Standing) will be measured per linear foot, including excavation, backfill, compaction, foundations, hardware, skate deterrents, and appurtenances necessary to construct railing. Payment will be at the contract unit price per linear foot for each type of railing, which price will be full compensation for the work, complete in place. No additional payment will be made for excavation, backfill, compaction, foundations, posts, hardware, finishes, and appurtenances, the cost be considered incidental to these items.

ITEM NO. 28 SECTION 060660 MONUMENT CUBE
ITEM NO. 29 SECTION 060660 MONUMENT PLINTH

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

A. This Section includes the Plastic Fabrication as shown and specified in the described system(s):
   1. Monument Cubes
   2. Monument Plinths

B. The extent of Solid Polymer Fabrication is shown on the drawings.
   1. Additional fabrication and installation details from manufacturer's technical department, if applicable

1.3 ADMINISTRATIVE REQUIREMENTS

A. Project Pre-installation Meeting
   1. Owner, Architect, Contractor, Installer to meet at project site within one week of scheduled installation.
   2. Review mounting conditions, installation and storage instructions, fabrication requirements, seaming and protection measures.

1.4 SUBMITTALS

A. General: Submit the following in accordance with conditions of contact and general conditions.

B. Product Data: Submit manufacturer's product data; include product description, fabrication information, and compliance with specified performance requirements.

C. Submit product test reports from a qualified independent 3rd party testing agency indicating each type and class of panel system complies with the project performance requirements, based on comprehensive testing of current products. Previously completed test reports will be acceptable if for current manufacturer and indicative of products used on this project.

1. Test reports required are:
   a. Rate of Burning (ASTM D 635)
   b. Self-Ignition Temperature (ASTM D 1929)
   c. Density of Smoke (ASTM D 2843)
   d. Steiner Tunnel (ASTM E84)
   e. Dynamic environmental testing (ASTM standards D 5116 or D 6670)
   f. Coefficient of Friction (ASTM 2047)

D. Building Approvals: Plastic Fabrications are to have been evaluated and must be registered with and comply to requirements of the following jurisdictions:

1. ICC-ES Report for Light Transmitting Plastics and Interior Finishes

E. Shop Drawings: Include plans, elevations, sections, panel dimensions, details, and attachments to other work.

F. Samples for Initial Selection:

1. Submit minimum 2-inch by 2-inch samples. Indicate full color, texture and pattern variation.

G. Samples for Verification:

1. Submit minimum 4-inch by 4-inch sample for each type, texture, pattern and color of solid plastic fabrication.

H. Mockups:

1. Build mockups to verify selections made under sample Submittals and to demonstrate aesthetic effects.
2. Build mockup of both monument cube and monument plinth.
3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

I. Maintenance Data: Submit manufacturer's care and maintenance data, including care, repair and cleaning instructions. Include in Project closeout documents.

1.5 QUALITY ASSURANCE

A. Manufacturers Qualifications

1. Materials and systems shall be manufactured by a company continuously and regularly employed in the manufacture of specified materials for a period of at least three (3) consecutive years and which can show evidence of those materials being satisfactorily used on at least three (3) projects of similar size, scope and location. At least one (1) of the projects shall have been successful for use one year or longer.
2. Manufactured panels must be produced from a minimum of 38% pre-consumer recycle content and 9% post-consumer recycled content or a minimum total recycled content factor of 0.20. This recycle content must be certified by a recognized 3rd party certification group, such as Scientific Certification Systems (SCS).
3. Completely PVC – Free product
4. Manufacturer must offer a documented reclaim process that will take back, at the manufacturers cost, panels that are at their end-of life cycle. Return process is preceded by following requirements highlighted in Section 02 42 00 Removal and Salvage of Construction Materials.
5. Manufacturer must have a 3rd party completed Life Cycle Analysis
6. Manufacturer must have an Environmental Product Declaration (EPD).

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver Plastic Fabrications, systems and specified items in manufacturer's standard protective packaging.

B. Do not deliver Plastic Fabrications, system, components and accessories to Project site until areas are ready for installation.

C. Store materials in a flat orientation in a dry place that is not exposed to exterior elements. Materials are to be protected against damage from moisture and direct sunlight.

D. Store in area of installation minimum of 24 hours prior to installation.

E. Handle materials to prevent damage to finished surfaces. Provide protective coverings to prevent damage or staining following installation for duration of project.

F. Before installing Plastic Fabrications, permit them to reach room temperature.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not install Solid Polymer Fabrications until spaces are enclosed and weatherproof, and ambient temperatures and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1.8 WARRANTY

A. Manufacturer's Special Warranty on Plastic Fabrications: Manufacturer's standard form agreeing to repair or replace units that fail in material or workmanship within the specified warranty period.

B. Warranty Period: 1 year after ship date.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Translucent Resin Panel

1. Engineered acrylic resin produced in the USA
2. Sheet Size: Maximum 4' x 10'
3. Thickness: Minimum 1/2"
4. Basis of Design Product: The design of Plastic Fabrications is based on Chroma as provided by 3form, Inc. Products from other manufacturers must be approved by the Architect or Designer prior to bidding in accordance with these specifications and general conditions.

B. Sheet minimum performance attributes:

1. Rate of Burning (ASTM D 635). Material must attain CC2 Rating for a nominal thickness of 1.5 mm (0.060 in.) and greater.
2. Self-Ignition Temperature (ASTM D 1929). Material must have a Self-ignition temperature greater than 850°F.
3. Density of Smoke (ASTM D 2843). Material must have a smoke density less than 10%.
4. Coefficient of Friction (ASTM 2047) 0.73 Dry, 0.79 Wet
5. Dynamic environmental testing (ASTM standards D 5116 or D 6670). Panels must not have detectable VOC off-gassing agents and must be have Greenguard™ Indoor Air Quality Children and Schools certified or equal.
6. Product must be fused using heat and pressure, not laminated with adhesives.
7. Color must be PVC-Free and be an acrylic resin made with pigments, not dyes. Must be UV stable colors

8. Vellum surface should be completely renewable onsite.

2.2 FABRICATION

A. General: Fabricate Plastic Fabrications to designs, sizes and thicknesses indicated and to comply with indicated standards. Sizes, profiles and other characteristics are indicated on the drawings, additional fabrication and installation details.

B. Comply with manufacturer's written recommendations for fabrication.

C. Machining: Acceptable means of machining are listed below. Ensure that material is not chipped or warped by machining operations.

1. Sawing: Select equipment and blades suitable for type of cut required.
2. Drilling: Drills compatible with plastic products.
3. Routing
4. Laser Cutting
5. Laser Etching

D. Forming: Form products to shapes indicated using the appropriate method listed below. Comply with manufacturer's written instructions.

1. Cold Bending
2. Hot Bending
3. Thermoforming: Acceptable only on uncoated material.
4. Drape Forming
5. Matched Mold Forming
6. Mechanical Forming

E. Laminating: Laminate to substrates indicated using adhesives and techniques recommended by manufacturer.

F. Bonding

1. Manufacturer must have an in-field seaming process and fabrication kit including necessary adhesive and tools.

2.3 MISCELLANEOUS MATERIALS

A. General: Provide products of material, size, and shape required for application indicated, and with a proven record of compatibility with surfaces contacted in installation.

B. Cleaner: Type recommended by manufacturer.

C. Adhesives: May be achieved with 2-part adhesives or silicones, suitable for use with product and application.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions where installation of Plastic Fabrications will occur, with Installer present, for compliance with manufacturer's requirements. Verify that substrates and conditions are satisfactory for installation and comply with requirements specified.

3.2 INSTALLATION

A. General: Comply with manufacturer's written instructions for the installation of Plastic Fabrications. Sizes, profiles and other characteristics are indicated on the drawings.

B. Manufacturer's shop to fabricate items to the greatest degree possible.

C. Utilize fasteners, adhesives and bonding agents recommended by manufacturer for type of installation indicated. Material that is chipped, warped, hazed or discolored as a result of installation or fabrication methods will be rejected.

D. Install components plumb, level and rigid, scribed to adjacent finishes, in accordance with approved shop drawings and product data.

E. Form field joints using manufacturer's recommended procedures. Locate seams in panels so that they are not directly in line with seams in substrates.

3.3 CLEANING AND PROTECTION

A. Protect surfaces from damage until date of substantial completion. Repair work or replace damaged work, which cannot be repaired to Architect's satisfaction.

Measurement and Payment:
Monument Cube and Monument Plinth will be measured as a unit for each item constructed and will be paid for at the contract unit price each, which price will be full compensation for the work, complete in place, in including mockups, fabrication, lighting, structural certification and concrete footings and appurtenances necessary to construct.

ITEM NO. 30	**SECTION 16000 NO 3 ½ RATED PULLBOX**
ITEM NO. 31	**SECTION 16000 2 IN PVC SCH 40 CONDUIT**
ITEM NO. 32	**SECTION 16000 1 IN PVC SCH 40 CONDUIT**
ITEM NO. 33	**SECTION 16000 3/4 IN PVC SCH 40 CONDUIT**
ITEM NO. 34	**SECTION 16000 1/2 IN PVC SCH 40 CONDUIT**
ITEM NO. 35	**SECTION 16000 NO 12 AWG THHN WIRE**
ITEM NO. 36	**SECTION 16000 NO 8 AWG THHN WIRE**
ITEM NO. 37	**SECTION 16000 NO 2 AWG THHN WIRE**
ITEM NO. 38	**SECTION 16000 BEGA-88 302-K3 LIGHT FIXTURE**
ITEM NO. 39	**SECTION 16000 BEGA-33 163-K3 LIGHT FIXTURE**
ITEM NO. 40	**SECTION 16000 BEGA-33 165-K3 LIGHT FIXTURE**
ITEM NO. 41	**SECTION 16000 BEGA-77 8552-K3-NON-SKID-LENS LIGHT FIXTURE**
ITEM NO. 42	**SECTION 16000 BEGA-19 580 25W LED REMOTE DRIVER**
ITEM NO. 43	**SECTION 16000 12"X18"X12" NEMA 3R BOX**

SECTION 16050

BASIC ELECTRICAL MATERIALS AND METHODS

MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION and CITY OF CHANDLER SUPPLEMENTS TO DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS ARE HEREBY AMENDED TO INCLUDE THE FOLLOWING:

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Electrical equipment coordination and installation.
2. Sleeves for raceways and cables.
3. Sleeve seals.
4. Common electrical installation requirements.

1.3 DEFINITIONS

A. ATS: Acceptance Testing Specifications.

B. EPDM: Ethylene-propylene-diene terpolymer rubber.

C. NBR: Acrylonitrile-butadiene rubber.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

1.5 QUALITY ASSURANCE

A. Test Equipment Suitability and Calibration: Comply with NETA ATS-2003, "Suitability of Test Equipment" and "Test Instrument Calibration."

1.6 COORDINATION

A. Coordinate arrangement, mounting, and support of electrical equipment:

1. To allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.

2. To provide for ease of disconnecting the equipment with minimum interference to other installations.
3. To allow right of way for piping and conduit installed at required slope.
4. So connecting raceways, cables, wireways, cable trays, and busways will be clear of obstructions and of the working and access space of other equipment.

B. Coordinate installation of required supporting devices and set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.

C. Coordinate location of access panels and doors for electrical items that are behind finished surfaces or otherwise concealed.

D. Coordinate electrical testing of electrical, mechanical, and architectural items, so equipment and systems that are functionally interdependent are tested to demonstrate successful interoperability.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 SLEEVES FOR RACEWAYS AND CABLES

A. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends.

B. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.

C. Sleeves for Rectangular Openings: Galvanized sheet steel with minimum 0.052- or 0.138-inch (1.3- or 3.5-mm) thickness as indicated and of length to suit application.

2.3 SLEEVE SEALS

A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.

1. Manufacturers:

a. Advance Products & Systems, Inc.
b. Calpico, Inc.
c. Metraflex Co.
d. Pipeline Seal and Insulator, Inc.

2. Sealing Elements: EPDM interlocking links shaped to fit surface of cable or conduit. Include type and number required for material and size of raceway or cable.
3. Pressure Plates: Glass reinforced nylon polymer or carbon steel. Include two for each sealing element.
4. Connecting Bolts and Nuts: Carbon steel with corrosion-resistant coating of length required to secure pressure plates to sealing elements. Include one for each sealing element.

PART 3 - EXECUTION

3.1 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

A. Comply with NECA 1.

B. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.

C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.

D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.

E. Right of Way: Give to raceways and piping systems installed at a required slope.

3.2 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Electrical penetrations occur when raceways, cables, wireways, cable trays, or busways penetrate concrete slabs, concrete or masonry walls, or fire-rated floor and wall assemblies.

B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.

C. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.

D. Rectangular Sleeve Minimum Metal Thickness:

1. For sleeve cross-section rectangle perimeter less than 50 inches (1270 mm) and no side greater than 16 inches (400 mm), thickness shall be 0.052 inch (1.3 mm).
2. For sleeve cross-section rectangle perimeter equal to, or greater than, 50 inches (1270 mm) and 1 or more sides equal to, or greater than, 16 inches (400 mm), thickness shall be 0.138 inch (3.5 mm).

E. Cut sleeves to length for mounting flush with both surfaces of walls.

F. Extend sleeves installed in floors 2 inches (50 mm) above finished floor level.

G. Size pipe sleeves to provide 1/4-inch (6.4-mm) annular clear space between sleeve and raceway or cable unless sleeve seal is to be installed.

H. Seal space outside of sleeves with grout for penetrations of concrete and masonry.

I. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.

J. Aboveground, Exterior-Wall Penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch (25-mm) annular clear space between pipe and sleeve for installing mechanical sleeve seals.

K. Underground, Exterior-Wall Penetrations: Install cast-iron "wall pipes" for sleeves. Size sleeves to allow for 1-inch (25-mm) annular clear space between raceway or cable and sleeve for installing mechanical sleeve seals.

3.3 SLEEVE-SEAL INSTALLATION

A. Install to seal underground, exterior wall penetrations.

B. Use type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

3.4 FIELD QUALITY CONTROL

A. Inspect installed sleeve and sleeve-seal installations and associated firestopping for damage and faulty work.

SECTION 16060

GROUNDING AND BONDING

MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND CITY OF CHANDLER ENGINEERING DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS ARE HEREBY AMENDED TO INCLUDE THE FOLLOWING:

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes methods and materials for grounding systems and equipment.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Other Informational Submittals: Plans showing dimensioned as-built locations of grounding features specified in Part 3 "Field Quality Control" Article, including the following:

1. Test wells.
2. Ground rods.
3. Ground rings.
4. Grounding arrangements and connections for separately derived systems.
5. Grounding for sensitive electronic equipment.

C. Field quality-control test reports.

D. Operation and Maintenance Data: For grounding to include the following in emergency, operation, and maintenance manuals:

1. Instructions for periodic testing and inspection of grounding features based on NETA ATS-2003.

   a. Tests shall be to determine if ground resistance or impedance values remain within specified maximums, and instructions shall recommend corrective action if they do not.
   b. Include recommended testing intervals.

PART 2 - PRODUCTS

2.1 CONDUCTORS

A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction. B. Bare Copper Conductors:

1. Solid Conductors: ASTM B 3.
2. Stranded Conductors: ASTM B 8.
3. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch (6 mm) in diameter.
4. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
5. Bonding Jumper: Copper tape, braided conductors, terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.
6. Tinned Bonding Jumper: Tinned-copper tape, braided conductors, terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.

C. Grounding Bus: Rectangular bars of annealed copper, 1/4 by 2 inches (6 by 50 mm) in cross section, unless otherwise indicated; with insulators.

2.2 CONNECTORS

A. Listed and labeled by a nationally recognized testing laboratory acceptable to authorities having jurisdiction for applications in which used, and for specific types, sizes, and combinations of conductors and other items connected.

B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, bolted pressuretype, with at least two bolts.

1. Pipe Connectors: Clamp type, sized for pipe.

C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

2.3 GROUNDING ELECTRODES

A. Ground Rods: Copper-clad steel, sectional type; 3/4 inch by 10 feet (19 mm by 3 m) in diameter.

PART 3 - EXECUTION

3.1 APPLICATIONS

A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger, unless otherwise indicated.

B. Underground Grounding Conductors: Install bare copper conductor, No. 6 AWG minimum or as indicated on plans.

1. Bury at least 24 inches (600 mm) below grade.
2. Duct-Bank Grounding Conductor: Bury 12 inches (300 mm) above duct bank when indicated as part of duct-bank installation. C. Conductor Terminations and Connections:

1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
2. Underground Connections: Welded connectors, except at test wells and as otherwise indicated.
3. Connections to Ground Rods at Test Wells: Bolted connectors.
4. Connections to Structural Steel: Welded connectors.

3.2 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with all feeders and branch circuits.

B. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:

1. Feeders and branch circuits.

2. Lighting circuits.
3. Receptacle circuits.
4. Single-phase motor and appliance branch circuits.
5. Three-phase motor and appliance branch circuits.
6. Flexible raceway runs.

C. Signal and Communication Equipment: For telephone, alarm, voice and data, and other communication equipment, provide No. 4 AWG minimum insulated grounding conductor in raceway from grounding electrode system to each service location, terminal cabinet, wiring closet, and central equipment location.

1. Service and Central Equipment Locations and Wiring Closets: Terminate grounding conductor on a 1/4-by-2-by-12-inch (6-by-50-by-300-mm) grounding bus.
2. Terminal Cabinets: Terminate grounding conductor on cabinet grounding terminal.

D. Metal Poles Supporting Outdoor Lighting Fixtures: Install grounding electrode and a separate insulated equipment grounding conductor in addition to grounding conductor installed with branch-circuit conductors.

3.3 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Ground Rods: Drive rods until tops are 2 inches (50 mm) below finished floor or final grade, unless otherwise indicated.

1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating, if any.

2. For grounding electrode system, install at least three rods spaced at least one rod length from each other and located at least the same distance from other grounding electrodes, and connect to the service grounding electrode conductor.

C. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance, except where routed through short lengths of conduit.

1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.

2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports:
   Install so vibration is not transmitted to rigidly mounted equipment.
3. Use exothermic-welded connectors for outdoor locations.

D. Ufer Ground (Concrete-Encased Grounding Electrode): Fabricate according to NFPA 70, using a minimum of 20 feet (6 m) of bare copper conductor not smaller than No. 4 AWG.

1. If concrete foundation is less than 20 feet (6 m) long, coil excess conductor within base of foundation.
2. Bond grounding conductor to reinforcing steel in at least four locations and to anchor bolts. Extend grounding conductor below grade and connect to building grounding grid or to grounding electrode external to concrete.

3.4 FIELD QUALITY CONTROL

A. Contractor will perform field tests and inspections and prepare test reports. Field tests shall be performed with the Engineer present.

B. Perform the following tests and inspections and prepare test reports:

1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
2. Test completed grounding system at each location where a maximum ground resistance level is specified, at service disconnect enclosure grounding terminal. Make tests at ground rods before any conductors are connected.

   a. Measure ground resistance not less than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
   b. Perform tests by fall-of-potential method according to IEEE 81.

C. Excessive Ground Resistance: If resistance to ground exceeds specified values as noted in the NETA ATS-2003, notify Engineer promptly and include recommendations to reduce ground resistance. See section 1.3 (D)-Submittals this section.

SECTION 16073

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND CITY OF CHANDLER ENGINEERING DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS ARE HEREBY AMENDED TO INCLUDE THE FOLLOWING:

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Hangers and supports for electrical equipment and systems.
2. Construction requirements for concrete bases.

1.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design supports for multiple raceways, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

B. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.

C. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.

D. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.

1.3 SUBMITTALS

A. Product Data: For steel slotted support systems.

B. Shop Drawings: Show fabrication and installation details and include calculations for the following:

1. Trapeze hangers. Include Product Data for components.
2. Steel slotted channel systems. Include Product Data for components.
3. Equipment supports. C. Welding certificates.

1.4 QUALITY ASSURANCE

A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel." B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. Allied Tube & Conduit.
    b. Cooper B-Line, Inc.; a division of Cooper Industries.
    c. GS Metals Corp.
    d. Thomas & Betts Corporation.
    e. Unistrut; Tyco International, Ltd.

2. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
3. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
4. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
5. Channel Dimensions: Selected for applicable load criteria.

B. Raceway and Cable Supports: As described in NECA 1 and NECA 101.

C. Conduit and Cable Support Devices: Steel and malleable-iron hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.

D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.

E. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.

F. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:

1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.

   a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

      1) Hilti Inc.
      2) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
      3) MKT Fastening, LLC.
      4) Simpson Strong-Tie Co., Inc.; Masterset Fastening Systems Unit.

2. Mechanical-Expansion Anchors: Insert-wedge-type, stainless steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.

   a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

      1) Cooper B-Line, Inc.; a division of Cooper Industries.
      2) Empire Tool and Manufacturing Co., Inc.
      3) Hilti Inc.
      4) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc. 5) MKT Fastening, LLC.

3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
6. Toggle Bolts: All-steel springhead type.
7. Hanger Rods: Threaded steel.

2.2 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

B. Materials: Comply with requirements in Division 5 Section "Metal Fabrications" for steel shapes and plates.

PART 3 - EXECUTION

3.1 APPLICATION

A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.

B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch (6 mm) in diameter.

C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.

1. Secure raceways and cables to these supports with single-bolt conduit clamps.

D. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch (38-mm) and smaller raceways serving branch circuits and communication systems above suspended ceilings and for fastening raceways to trapeze supports.

3.2 SUPPORT INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.

B. Raceway Support Methods: In addition to methods described in NECA 1, EMT, IMC, and RMC may be supported by openings through structure members, as permitted in NFPA 70.

C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb (90 kg).

D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:

1. To Wood: Fasten with lag screws or through bolts.
2. To New Concrete: Bolt to concrete inserts.
3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
4. To Existing Concrete: Expansion anchor fasteners.
5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches (100 mm) thick or greater. Do not use for anchorage to light weight aggregate concrete or for slabs less than 4 inches (100 mm) thick.
6. To Steel: Beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69.
7. To Light Steel: Sheet metal screws.
8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate.

E. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment. B. Field Welding: Comply with AWS D1.1/D1.1M.

3.4 CONCRETE BASES

A. Construct concrete bases of dimensions indicated but not less than 4 inches (100 mm) larger in both directions than supported unit, and so anchors will be a minimum of 10 bolt diameters from edge of the base.

B. Use 3000-psi (20.7-MPa, 28-day compressive-strength concrete.

C. Anchor equipment to concrete base.

1. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
2. Install anchor bolts to elevations required for proper attachment to supported equipment.
3. Install anchor bolts according to anchor-bolt manufacturers written instructions.

3.5 PAINTING

A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.

1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils (0.05 mm).

B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

SECTION 16075

ELECTRICAL IDENTIFICATION

MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND CITY OF CHANDLER ENGINEERING DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS ARE HEREBY AMENDED TO INCLUDE THE FOLLOWING:

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Identification for conductors and communication and control cable.
2. Warning labels and signs.
3. Equipment identification labels.

1.2 SUBMITTALS

A. Product Data: For each electrical identification product indicated.

1.3 QUALITY ASSURANCE

A. Comply with ANSI A13.1.

1.4 COORDINATION

A. Coordinate identification names, abbreviations, colors, and other features with requirements in the Contract Documents, Shop Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual, and with those required by codes, standards, and 29 CFR 1910.145. Use consistent designations throughout Project.

PART 2 - PRODUCTS

2.1 CONDUCTOR AND COMMUNICATION- AND CONTROL-CABLE IDENTIFICATION MATERIALS

A. Marker Tape: Vinyl or vinyl -cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.

2.2 WARNING LABELS AND SIGNS

A. Comply with NFPA 70 and 29 CFR 1910.145.

B. Self-Adhesive Warning Labels: Factory printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment, unless otherwise indicated.

C. Baked-Enamel Warning Signs: Preprinted aluminum signs, punched or drilled for fasteners, with colors, legend, and size required for application. 1/4-inch (6.4-mm) grommets in corners for mounting. Nominal size, 7 by 10 inches (180 by 250 mm).

D. Metal-Backed, Butyrate Warning Signs: Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch (1-mm) galvanized-steel backing; and with colors, legend, and size required for application. 1/4-inch (6.4-mm) grommets in corners for mounting. Nominal size, 10 by 14 inches (250 by 360 mm).

E. Fasteners for Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

2.3 EQUIPMENT IDENTIFICATION LABELS

A. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed, with white letters on a dark-gray background. Minimum letter height shall be 3/8 inch (10 mm).

PART 3 - EXECUTION

3.1 APPLICATION

A. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.

1. Labeling Instructions:

   a. Indoor Equipment: Self-adhesive, engraved, laminated acrylic or melamine label. Unless otherwise indicated, provide a single line of text with 1/2-inch- (13-mm-) high letters on 1-1/2-inch- (38-mm-) high label; where 2 lines of text are required, use labels 2 inches (50 mm) high.
   b. Outdoor Equipment: Engraved, laminated acrylic or melamine label, drilled for screw attachment.
   c. Elevated Components: Increase sizes of labels and legend to those appropriate for viewing from the floor.

2. Equipment to Be Labeled:

   a. Panelboards, electrical cabinets, and enclosures.
   b. Electrical switchgear and switchboards.
   c. Transformers.
   d. Motor-control centers.
   e. Disconnect switches.
   f. Enclosed circuit breakers.
   g. Motor starters.

h. Push-button stations.
i. Contactors.

3.2 INSTALLATION

A. Verify identity of each item before installing identification products.

B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.

C. Apply identification devices to surfaces that require finish after completing finish work.

D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.

E. Attach non-adhesive signs and plastic labels with screws and auxiliary hardware appropriate to the location and substrate.

F. Color-Coding for Phase and Voltage Level Identification, 600 V and Less: Use the colors listed below for ungrounded service, feeder, and branch-circuit conductors.

1. Color shall be factory applied.
2. Colors for 208/120-V Circuits:

    a. Phase A: Black.
    b. Phase B: Red.
    c. Phase C: Blue.

3. Colors for 480/277-V Circuits:

    a. Phase A: Brown.
    b. Phase B: Orange.
    c. Phase C: Yellow.

SECTION 16120

CONDUCTORS AND CABLES

MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND CITY OF CHANDLER ENGINEERING DESIGN AND

CONSTRUCTION STANDARDS AND SPECIFICATIONS ARE HEREBY AMENDED TO INCLUDE THE FOLLOWING:

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Building wires and cables rated 600 V and less.
2. Connectors, splices, and terminations rated 600 V and less.
3. Sleeves and sleeve seals for cables.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Field quality-control test reports.

1.3 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use. B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

A. Copper Conductors: Comply with NEMA WC 70.

B. Conductor Insulation: Comply with NEMA WC 70 for Types THHN-THWN and XHHW.

2.2 CONNECTORS AND SPLICES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. AFC Cable Systems, Inc.

2. Hubbell Power Systems, Inc.
3. O-Z/Gedney; EGS Electrical Group LLC.
4. 3M; Electrical Products Division.
5. Tyco Electronics Corp.

B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

2.3 SLEEVES FOR CABLES

A. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends.

B. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.

C. SLEEVE SEALS

D. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Advance Products & Systems, Inc.
2. Calpico, Inc.
3. Metraflex Co.
4. Pipeline Seal and Insulator, Inc.

E. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and cable.

1. Sealing Elements: EPDM interlocking links shaped to fit surface of cable or conduit. Include type and number required for material and size of raceway or cable.
2. Pressure Plates: Glass reinforced nylon or Carbon steel. Include two for each sealing element.
3. Connecting Bolts and Nuts: Carbon steel with corrosion-resistant coating of length required to secure pressure plates to sealing elements. Include one for each sealing element.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

A. Feeders: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger. Minimum conductor size to be used is #12.

B. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger. Minimum conductor size to be used is #12.

C. Aluminum Circuits are shown on the plans at the direction of the City of Chandler. These circuits will be installed in accordance with the guidelines specific to use of aluminum conductors including oxide protection compounds, cold flow and fatigue.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

A. Service Entrance: By Utility.

B. Exposed Feeders: Type THHN-2-THWN-2, single conductors in raceway.

C. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspaces: Type THHN-2, THWN-2, single conductors in raceway.

D. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-2-THWN-2, single conductors in raceway.

E. Exposed Branch Circuits, Including in Crawlspaces: Type THHN-2-THWN-2, single conductors in raceway.

F. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN-2-THWN-2, single conductors in raceway.

G. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-2-THWN-2, single conductors in raceway.

H. Class 1 Control Circuits: Type THHN-2-THWN-2, in raceway. I. Class

2 Control Circuits: Type THHN-2-THWN-2, in raceway.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

A. Conceal cables in finished walls, ceilings, and floors, unless otherwise indicated.

B. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed

manufacturer's recommended maximum pulling tensions and sidewall pressure values.

C. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

D. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.

E. Identify and color-code conductors and cables according to Division 16 Section "Electrical Identification."

F. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

G. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than un-spliced conductors.

H. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches (150 mm) of slack.

3.4 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls. B. Cut sleeves to length for mounting flush with both wall surfaces.

C. Extend sleeves installed in floors 2 inches (50 mm) above finished floor level.

D. Size pipe sleeves to provide 1/4-inch (6.4-mm) annular clear space between sleeve and cable unless sleeve seal is to be installed.

E. Seal space outside of sleeves with grout for penetrations of concrete and masonry.

F. Roof-Penetration Sleeves: Seal penetration of individual cables with flexible boot-type flashing units applied in coordination with roofing work.

G. Aboveground Exterior-Wall Penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Size sleeves to allow for 1-inch (25-mm) annular clear space between pipe and sleeve for installing mechanical sleeve seals.

H. Underground Exterior-Wall Penetrations: Install cast-iron "wall pipes" for sleeves. Size sleeves to allow for 1-inch (25-mm) annular clear space between cable and sleeve for installing mechanical sleeve seals.

3.5 SLEEVE-SEAL INSTALLATION

A. Install to seal underground exterior-wall penetrations.

B. Use type and number of sealing elements recommended by manufacturer for cable material and size. Position cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

SECTION 16130

RACEWAYS AND BOXES

MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND CITY OF CHANDLER ENGINEERING DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS ARE HEREBY AMENDED TO INCLUDE THE FOLLOWING:

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.

1.2 SUBMITTALS

A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

B. Shop Drawings: For custom enclosures and cabinets. Include plans, elevations, sections, details, and attachments to other work.

1.3 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use. B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 METAL CONDUIT AND TUBING

A. Rigid Steel Conduit: ANSI C80.1.

B. IMC: ANSI C80.6.

C. EMT: ANSI C80.3.

D. FMC: Zinc-coated steel.

E. LFMC: Flexible steel conduit with PVC jacket.

F. Fittings for Conduit (Including all Types and Flexible and Liquidtight), EMT, and Cable: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed.

1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886.
2. Fittings for EMT: Steel compression type.

2.2 NONMETALLIC CONDUIT AND TUBING A.

ENT: NEMA TC 13.

B. RNC: NEMA TC 2, Type EPC-40-PVC, unless otherwise indicated.

C. LFNC: UL 1660.

D. Fittings for ENT and RNC: NEMA TC 3; match to conduit or tubing type and material.

E. Fittings for LFNC: UL 514B.

2.3 METAL WIREWAYS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Cooper B-Line, Inc.
2. Hoffman.
3. Square D; Schneider Electric.

B. Description: Sheet metal sized and shaped as indicated, NEMA 250, Type 1, unless otherwise indicated.

C. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system. D. Wireway Covers: Hinged type.

E. Finish: Manufacturer's standard enamel finish.

2.4 BOXES, ENCLOSURES, AND CABINETS

A. Sheet Metal Outlet and Device Boxes: NEMA OS 1.

B. Cast-Metal Outlet and Device Boxes: NEMA FB 1, aluminum, Type FD, with gasketed cover.

C. Nonmetallic Outlet and Device Boxes: NEMA OS 2.

D. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.

E. Cast-Metal Access, Pull, and Junction Boxes: NEMA FB 1, cast aluminum with gasketed cover.

F. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous-hinge cover with flush latch, unless otherwise indicated.

1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel. G. Cabinets:

1. NEMA 250, Type 1, galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
2. Hinged door in front cover with flush latch and concealed hinge.
3. Key latch to match panelboards.
4. Metal barriers to separate wiring of different systems and voltage.
5. Accessory feet where required for freestanding equipment.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:

1. Exposed Conduit: IMC.
2. Concealed Conduit, Aboveground: EMT.
3. Underground Conduit: RNC, Type EPC-40-PVC, direct buried.
4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
5. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.

B. Comply with the following indoor applications, unless otherwise indicated:

1. Exposed, Not Subject to Physical Damage: EMT.
2. Exposed, Not Subject to Severe Physical Damage: EMT.
3. Exposed and Subject to Severe Physical Damage: IMC. Includes raceways in the following locations:

    a. Loading dock.
    b. Corridors used for traffic of mechanized carts, forklifts, and pallet-handling units.
    c. Mechanical rooms.

4. Concealed in Ceilings and Interior Walls and Partitions: EMT.
5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
6. Damp or Wet Locations: IMC.
7. Raceways for Optical Fiber or Communications Cable: EMT.
8. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4, stainless steel in damp or wet locations.

C. Minimum Raceway Size: 1/2-inch (16-mm) trade size.

D. Raceway Fittings: Compatible with raceways and suitable for use and location.

1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings, unless otherwise indicated.

3.2 INSTALLATION

A. Comply with NECA 1 for installation requirements applicable to products specified in Part 2 except where requirements on Drawings or in this Article are stricter.

B. Keep raceways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping. C. Complete raceway installation before starting conductor installation.

D. Arrange stub-ups so curved portions of bends are not visible above the finished slab.

E. Install no more than the equivalent of three 90-degree bends in any conduit run except for communications conduits, for which fewer bends are allowed.

F. Conceal conduit and EMT within finished walls, ceilings, and floors, unless otherwise indicated.

G. Raceways Embedded in Slabs:

1. Run conduit larger than 1-inch (27-mm) trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support.
2. Arrange raceways to cross building expansion joints at right angles with expansion fittings.
3. Change from ENT to IMC, rigid steel conduit, or IMC before rising above the floor.

H. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors, including conductors smaller than No. 4 AWG.

I. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of pull wire.

J. Raceways for Optical Fiber and Communications Cable: Install as follows:

1. 3/4-Inch (19-mm) Trade Size and Smaller: Install raceways in maximum lengths of 50 feet (15 m).
2. 1-Inch (25-mm) Trade Size and Larger: Install raceways in maximum lengths of 75 feet (23 m).
3. Install with a maximum of two 90-degree bends or equivalent for each length of raceway unless Drawings show stricter requirements. Separate

lengths with pull or junction boxes or terminations at distribution frames or cabinets where necessary to comply with these requirements.

K. Install raceway sealing fittings at suitable, approved, and accessible locations and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:

1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
2. Where otherwise required by NFPA 70.

L. Expansion-Joint Fittings for RNC: Install in each run of aboveground conduit that is located where environmental temperature change may exceed 30 deg F (17 deg C), and that has straight-run length that exceeds 25 feet (7.6 m).

1. Install expansion-joint fittings for each of the following locations, and provide type and quantity of fittings that accommodate temperature change listed for location:

   a. Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F (70 deg C) temperature change.
   b. Outdoor Locations Exposed to Direct Sunlight: 155 deg F (86 deg C) temperature change.
   c. Indoor Spaces: Connected with the Outdoors without Physical Separation:
      125 deg F (70 deg C) temperature change.
   d. Attics: 135 deg F (75 deg C) temperature change.

2. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg F (0.06 mm per meter of length of straight run per deg C) of temperature change.
3. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at the time of installation.

M. Flexible Conduit Connections: Use maximum of 72 inches (1830 mm) of flexible conduit for recessed and semirecessed lighting fixtures, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.

1. Use LFMC in damp or wet locations subject to severe physical damage.
2. Use LFMC or LFNC in damp or wet locations not subject to severe physical damage.

N. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall.

3.3 INSTALLATION OF UNDERGROUND CONDUIT

A. Direct-Buried Conduit:

1. Excavate trench bottom to provide firm and uniform support for conduit.
2. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches (300 mm) of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction.
3. Install manufactured duct elbows for stub-ups at poles and equipment and at building entrances through the floor, unless otherwise indicated. Encase elbows for stub-up ducts throughout the length of the elbow.
4. Install manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances through the floor.

    a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches (75 mm) of concrete.

    b. For stub-ups at equipment mounted on outdoor concrete bases, extend steel conduit horizontally a minimum of 60 inches (1500 mm) from edge of equipment pad or foundation. Install insulated grounding bushings on terminations at equipment.

5. Warning Tape: Bury warning tape approximately 12 inches (300 mm) above direct-buried conduits. Align tape along the width and along the centerline of conduit.

SECTION 16140

WIRING DEVICES

MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND CITY OF CHANDLER ENGINEERING DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS ARE HEREBY AMENDED TO INCLUDE THE FOLLOWING:

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Receptacles, receptacles with integral GFCI, and associated device plates.
2. Snap switches and wall-box dimmers.
3. Communications outlets.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: List of legends and description of materials and process used for premarking wall plates.

C. Operation and Maintenance Data: For wiring devices to include in all manufacturers' packing label warnings and instruction manuals that include labeling conditions.

1.3 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use. B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:

1. Cooper Wiring Devices; a division of Cooper Industries, Inc. (Cooper).
2. Hubbell Incorporated; Wiring Device-Kellems (Hubbell).
3. Leviton Mfg. Company Inc. (Leviton).
4. Pass & Seymour/Legrand; Wiring Devices & Accessories (Pass & Seymour).

2.2 STRAIGHT BLADE RECEPTACLES

A. Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 configuration 5-20R, and UL 498.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Cooper; 5351 (single), 5352 (duplex).
b. Hubbell; HBL5351 (single), CR5352 (duplex).
c. Leviton; 5891 (single), 5352 (duplex).
d. Pass & Seymour; 5381 (single), 5352 (duplex).

2.3 GFCI RECEPTACLES

A. General Description: Straight blade, feed-through type. Comply with NEMA WD 1, NEMA WD 6, UL 498, and UL 943, Class A, and include indicator light that is lighted when device is tripped.

B. Duplex GFCI Convenience Receptacles, 125 V, 20 A:

1. Products: Subject to compliance with requirements, provide one of the following:

a. Cooper; GF20.
b. Pass & Seymour; 2084.

2.4 SNAP SWITCHES

A. Comply with NEMA WD 1 and UL 20.

B. Switches, 120/277 V, 20 A:

1. Products: Subject to compliance with requirements, provide one of the following:

a. Cooper; 2221 (single pole), 2222 (two pole), 2223 (three way), 2224 (four way).
b. Hubbell; CS1221 (single pole), CS1222 (two pole), CS1223 (three way), CS1224 (four way).
c. Leviton; 1221-2 (single pole), 1222-2 (two pole), 1223-2 (three way), 12242 (four way).
d. Pass & Seymour; 20AC1 (single pole), 20AC2 (two pole), 20AC3 (three way), 20AC4 (four way).

2.5 WALL PLATES

A. Single and combination types to match corresponding wiring devices.

1. Plate-Securing Screws: Metal with head color to match plate finish.
2. Material for Finished Spaces: 0.035-inch- (1-mm-) thick, satin-finished stainless steel.
3. Material for Unfinished Spaces: Galvanized steel.
4. Material for Damp Locations: Cast aluminum with spring-loaded lift cover, and listed and labeled for use in "wet locations."

B. Wet-Location, Weatherproof Cover Plates: NEMA 250, complying with type 3R weather-resistant, die-cast aluminum with lockable cover.

2.6 FINISHES

A. Color: Wiring device catalog numbers in Section Text do not designate device color.

1. Wiring Devices Connected to Normal Power System: Gray, unless otherwise indicated or required by NFPA 70 or device listing.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1, including the mounting heights listed in that standard, unless otherwise noted.

B. Coordination with Other Trades:

1. Take steps to insure that devices and their boxes are protected. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of the boxes.
2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
3. Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is troweled flush with the face of the wall.
4. Install wiring devices after all wall preparation, including painting, is complete.

C. Conductors:

1. Do not strip insulation from conductors until just before they are spliced or terminated on devices.

2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
3. The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtails. D. Device Installation:

1. Replace all devices that have been in temporary use during construction or that show signs that they were installed before building finishing operations were complete.
2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
4. Connect devices to branch circuits using pigtails that are not less than 6 inches (152 mm) in length.
5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, 2/3 to 3/4 of the way around terminal screw.
6. Use a torque screwdriver when a torque is recommended or required by the manufacturer.
7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
8. Tighten unused terminal screws on the device.
9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device mounting screws in yokes, allowing metal-to-metal contact.

D. Receptacle Orientation:

1. Install ground pin of vertically mounted receptacles up and on horizontally mounted receptacles to the right.

E. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.

F. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multi-gang wall plates.

3.2 IDENTIFICATION

A. Comply with Division 16 Section "Electrical Identification."

1. Receptacles: Identify panelboard and circuit number from which served with the wire markers or tags inside outlet boxes.

SECTION 16145

LIGHTING CONTROL DEVICES

MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND CITY OF CHANDLER ENGINEERING DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS ARE HEREBY AMENDED TO INCLUDE THE FOLLOWING:

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following lighting control devices:

1. Lighting contactors.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Show installation details for occupancy and light-level sensors.

1. Interconnection diagrams showing field-installed wiring.

C. Operation and Maintenance Data: For each type of product to include in emergency, operation, and maintenance manuals.

1.4 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

1.5 COORDINATION

A. Coordinate layout and installation of ceiling-mounted devices with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, smoke detectors, fire-suppression system, and partition assemblies.

PART 2 - PRODUCTS

2.1 LIGHTING CONTACTORS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Allen-Bradley/Rockwell Automation.
2. ASCO Power Technologies, LP; a division of Emerson Electric Co.
3. Eaton Electrical Inc.; Cutler-Hammer Products.
4. Square D; Schneider Electric.

B. Description: Electrically operated and electrically held, complying with NEMA ICS 2 and UL 508.

1. Current Rating for Switching: Listing or rating consistent with type of load served, including tungsten filament, inductive, and high-inrush ballast (ballast with 15 percent or less total harmonic distortion of normal load current).
2. Fault Current Withstand Rating: Equal to or exceeding the available fault current at the point of installation (25,000 AIC).
3. Enclosure: Comply with NEMA 250.

PART 3 - EXECUTION

3.1 CONTACTOR INSTALLATION

A. Mount electrically held lighting contactors with elastomeric isolator pads, to eliminate structure-borne vibration, unless contactors are installed in an enclosure with factory-installed vibration isolators.

3.2 WIRING INSTALLATION

A. Wiring Method: Comply with Division 16 Section "Conductors and Cables." Minimum conduit size shall be 1/2 inch (13 mm).

B. Wiring within Enclosures: Comply with NECA 1. Separate power-limited and nonpower-limited conductors according to conductor manufacturer's written instructions.

C. Size conductors according to lighting control device manufacturer's written instructions, unless otherwise indicated.

D. Splices, Taps, and Terminations: Make connections only on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures.

3.3 IDENTIFICATION

A. Identify components and power and control wiring according to Division 16 Section "Electrical Identification."

1. Identify controlled circuits in lighting contactors.

2. Label time switches and contactors with a unique designation.

3.4 FIELD QUALITY CONTROL

A. Perform the following field tests and inspections and prepare test reports:

1. Operational Test: Verify operation of each lighting control device, and adjust time delays.

B. Lighting control devices that fail tests and inspections are defective work.

SECTION 16442

PANELBOARDS

MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND CITY OF CHANDLER ENGINEERING DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS ARE HEREBY AMENDED TO INCLUDE THE FOLLOWING:

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Distribution panelboards.
2. Lighting and appliance branch-circuit panelboards.

1.3 DEFINITIONS

A. EMI: Electromagnetic interference.

B. GFCI: Ground-fault circuit interrupter.

C. RFI: Radio-frequency interference.

D. RMS: Root mean square.

E. SPDT: Single pole, double throw.

1.4 SUBMITTALS

A. Product Data: For each type of panelboard, overcurrent protective device, transient voltage suppression device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

B. Shop Drawings: For each panelboard and related equipment.

1. Dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings. Include the following:

a. Enclosure types and details for types other than NEMA 250, Type 1.

b. Bus configuration, current, and voltage ratings.

c. Short-circuit current rating of panelboards and overcurrent protective devices.
d. UL listing for series rating of installed devices.
e. Features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.

2. Wiring Diagrams: Power, signal, and control wiring. C. Field

quality-control test reports including the following:

1. Test procedures used.
2. Test results that comply with requirements.
3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

D. Panelboard Schedules: For installation in panelboards. Submit final versions after load balancing.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain panelboards, overcurrent protective devices, components, and accessories through one source from a single manufacturer.

B. Product Options: Drawings indicate size, profiles, and dimensional requirements of panelboards and are based on the specific system indicated. Refer to Division 1 Section "Product Requirements."

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use. D. Comply with NEMA PB 1.

D. Comply with NFPA 70.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Rate equipment for continuous operation under the following conditions, unless otherwise indicated:

1. Ambient Temperature: Not exceeding 104 deg F (40 deg C).
2. Altitude: Not exceeding 6600 feet (2000 m).

B. Service Conditions: NEMA PB 1, usual service conditions, as follows:

1. Ambient temperatures within limits specified.
2. Altitude not exceeding 6600 feet (2000 m).

1.7 COORDINATION

A. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, and encumbrances to workspace clearance requirements.

B. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Panelboards, Overcurrent Protective Devices, Controllers, Contactors, and Accessories:

   a. Square D

2.2 MANUFACTURED UNITS

A. Enclosures: Surface-mounted cabinets. NEMA PB 1, Type 1.

1. Rated for environmental conditions at installed location.

2. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.
3. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover.
4. Skirt for Surface-Mounted Panelboards: Same gage and finish as panelboard front with flanges for attachment to panelboard, wall, and ceiling or floor.
5. Gutter Extension and Barrier: Same gage and finish as panelboard enclosure; integral with enclosure body. Arrange to isolate individual panel sections.
6. Finish: Manufacturer's standard enamel finish over corrosion-resistant treatment or primer coat.

7. Directory Card: With transparent protective cover, mounted in metal frame, inside panelboard door. B. Phase and Ground Buses:

1. Material: Tin-plated aluminum.
2. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment ground conductors; bonded to box.

C. Conductor Connectors: Suitable for use with conductor material.

1. Main and Neutral Lugs: Mechanical type.
2. Ground Lugs and Bus Configured Terminators: Compression type.

D. Service Equipment Label: UL labeled for use as service equipment for panelboards with main service disconnect switches.

E. Future Devices: Mounting brackets, bus connections, and necessary appurtenances required for future installation of devices.

2.3 PANELBOARD SHORT-CIRCUIT RATING

A. Fully rated to interrupt symmetrical short-circuit current available at terminals.

2.4 DISTRIBUTION PANELBOARDS

A. Doors: Secured with vault-type latch with tumbler lock; keyed alike. Omit for fused switch panelboards.

B. Main Overcurrent Protective Devices: Circuit breaker.

C. Branch Overcurrent Protective Devices:

1. For Circuit-Breaker Frame Sizes 125 A and Smaller: Bolt-on circuit breakers.
2. For Circuit-Breaker Frame Sizes Larger Than 125 A: Bolt-on circuit breakers; plug-in circuit breakers where individual positive-locking device requires mechanical release for removal.

2.5 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

A. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.

B. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike.

2.6 OVERCURRENT PROTECTIVE DEVICES

A. Molded-Case Circuit Breaker: UL 489, with interrupting capacity to meet available fault currents.

1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
2. GFCI Circuit Breakers: Single- and two-pole configurations with [5] [30]-mA trip sensitivity.

B. Molded-Case Circuit-Breaker Features and Accessories: Standard frame sizes, trip ratings, and number of poles.

1. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor materials.
2. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HACR for heating, air-conditioning, and refrigerating equipment.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install panelboards and accessories according to NEMA PB 1.1.

B. Mount top of trim 74 inches (1880 mm) above finished floor, unless otherwise indicated.

C. Mount plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish.

D. Install overcurrent protective devices and controllers.

1. Set field-adjustable switches and circuit-breaker trip

ranges.

E. Install filler plates in unused spaces.

F. Arrange conductors in gutters into groups and bundle and wrap with wire ties after completing load balancing.

3.2 IDENTIFICATION

A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs as specified in Division 16 Section "Electrical Identification."

B. Create a directory to indicate installed circuit loads after balancing panelboard loads. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.

C. Panelboard Nameplates: Label each panelboard with engraved metal or laminated plastic nameplate mounted with corrosion-resistant screws.

3.3 CONNECTIONS

A. Ground equipment according to Division 16 Section "Grounding and Bonding."

B. Connect wiring according to Division 16 Section "Conductors and Cables."

3.4 FIELD QUALITY CONTROL

A. Perform the following field tests and inspections and prepare test reports:

1. Perform each electrical test and visual and mechanical inspection stated in NETA ATS-2003, Section 7.5 for switches and Section 7.6 for molded-case circuit breakers. Certify compliance with test parameters.
2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.

B. Load Balancing: After Substantial Completion, but not more than 60 days after Final Acceptance, measure load balancing and make circuit changes.

1. Measure as directed during period of normal system loading.
2. Perform load-balancing circuit changes outside normal occupancy/working schedule of the facility and at time directed. Avoid disrupting critical 24-hour services such as fax machines and on-line data processing, computing, transmitting, and receiving equipment.
3. After circuit changes, recheck loads during normal load period. Record all load readings before and after changes and submit test records.

4. Tolerance: Difference exceeding 20 percent between phase loads, within a panelboard, is not acceptable. Rebalance and recheck as necessary to meet this minimum requirement.

3.5 CLEANING

A. On completion of installation, inspect interior and exterior of panelboards. Remove paint splatters and other spots. Vacuum dirt and debris; do not use compressed air to assist in cleaning. Repair exposed surfaces to match original finish.

SECTION 16521

EXTERIOR LIGHTING

MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND CITY OF CHANDLER ENGINEERING DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS ARE HEREBY AMENDED TO INCLUDE THE FOLLOWING:

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Exterior luminaires with lamps and ballasts.
2. LED Fixtures
3. Poles and accessories.

1.2 STRUCTURAL ANALYSIS CRITERIA FOR POLE SELECTION

A. Dead Load: Weight of luminaire and its horizontal and vertical supports and supporting structure, applied as stated in AASHTO LTS-4.

B. Ice Load: Load of 3 lbf/sq. ft. (143.6 Pa), applied as stated in AASHTO LTS-4.

C. Wind Load: Pressure of wind on pole and luminaire, calculated and applied as stated in AASHTO LTS-4.

1.3 SUBMITTALS

A. Product Data: For each luminaire, pole, and support component, arranged in order of lighting unit designation. Include data on features, accessories, and finishes.

B. Shop Drawings: Include anchor-bolt templates keyed to specific poles and certified by manufacturer.

1.4 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. Comply with IEEE C2, "National Electrical Safety Code."

C. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In Exterior Lighting Device Schedule where titles below are column or row headings that introduce lists, the following requirements apply to product selection:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 LUMINAIRES, GENERAL REQUIREMENTS

A. Luminaires shall comply with UL 1598 and be listed and labeled for installation in wet locations by an NRTL acceptable to authorities having jurisdiction.

B. Comply with IESNA RP-8 for parameters of lateral light distribution patterns indicated for luminaires.

C. Metal Parts: Free of burrs and sharp corners and edges.

D. Sheet Metal Components: Corrosion-resistant aluminum, unless otherwise indicated. Form and support to prevent warping and sagging.

E. Housings: Rigidly formed, weather- and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.

F. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit re-lamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during re-lamping and when secured in operating position. Doors shall be removable for cleaning or replacing lenses. Designed to disconnect ballast when door opens.

G. Exposed Hardware Material: Stainless steel.

H. Plastic Parts: High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.

I. Light Shields: Metal baffles, factory installed and field adjustable, arranged to block light distribution to indicated portion of normally illuminated area or field.

J. Reflecting surfaces shall have minimum reflectance as follows, unless otherwise indicated:

1. White Surfaces: 85 percent.
2. Specular Surfaces: 83 percent.
3. Diffusing Specular Surfaces: 75 percent.

K. Lenses and Refractors Gaskets: Use heat- and aging-resistant resilient gaskets to seal and cushion lenses and refractors in luminaire doors.

L. Luminaire Finish: Color by Engineer. Paint applied to factory-assembled and -tested luminaire before shipping. Where indicated, match finish process and color of pole or support materials.

M. Factory-Applied Finish for Steel Luminaires: Color as selected by Engineer. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

N. Factory-Applied Finish for Aluminum Luminaires: Color as selected by Engineer. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

2.5 LED LUMINAIRES

A. Initial delivered lumens: Thermal losses should be less than 10% when operated at a steady state at an average ambient operating temperature of 25 deg C. Optical losses should be less than 15%

B. Average delivered lumens: Over 50,000 hours should be a minimum of 85% of initial delivered lumens.

C. Warranty: 5 years on the LEDs, 5 years on the driver, 10 years on the paint finish.

2.6 POLES AND SUPPORT COMPONENTS, GENERAL REQUIREMENTS

A. Structural Characteristics: Comply with AASHTO LTS-4.

1. Wind-Load Strength of Poles: Adequate at indicated heights above grade without failure, permanent deflection, or whipping in steady winds of speed indicated in Part 1 "Structural Analysis Criteria for Pole Selection" Article, with a gust factor of 1.3.
2. Strength Analysis: For each pole, multiply the actual equivalent projected area of luminaires and brackets by a factor of 1.1 to obtain the equivalent projected area to be used in pole selection strength analysis.

B. Luminaire Attachment Provisions: Comply with luminaire manufacturers' mounting requirements. Use stainless-steel fasteners and mounting bolts, unless otherwise indicated.

C. Mountings, Fasteners, and Appurtenances: Corrosion-resistant items compatible with support components.

1. Materials: Shall not cause galvanic action at contact points.
2. Anchor Bolts, Leveling Nuts, Bolt Caps, and Washers: Hot-dip galvanized after fabrication, unless stainless-steel items are indicated.
3. Anchor-Bolt Template: Plywood or steel.

2.7 CONCRETE POLES (SEE FIXTURE SCHEDULE)

PART 3 - EXECUTION

3.1 LUMINAIRE INSTALLATION

A. Install lamps in each luminaire.

B. Fasten luminaire to indicated structural supports.

1. Use fastening methods and materials selected to resist seismic forces defined for the application and approved by manufacturer.

C. Adjust luminaires that require field adjustment or aiming.

3.2 POLE INSTALLATION

A. Align pole foundations and poles for optimum directional alignment of luminaires and their mounting provisions on the pole.

B. Clearances: Maintain the following minimum horizontal distances of poles from surface and underground features, unless otherwise indicated on Drawings:

1. Fire Hydrants and Storm Drainage Piping: 60 inches (1520 mm).
2. Water, Gas, Electric, Communication, and Sewer Lines: 10 feet (3 m).
3. Trees: 15 feet (5 m).

C. Raise and set poles using web fabric slings (not chain or cable).

3.3 CORROSION PREVENTION

A. Aluminum: Do not use in contact with earth or concrete. When in direct contact with a dissimilar metal, protect aluminum by insulating fittings or treatment.

B. Steel Conduits: Comply with Division 16 Section "Raceways and Boxes." In concrete foundations, wrap conduit with 0.010-inch- (0.254-mm-) thick, pipe-wrapping plastic tape applied with a 50 percent overlap.

3.4 GROUNDING

A. Ground metal poles and support structures according to Division 16 Section "Grounding and Bonding."

1. Install grounding electrode for each pole, unless otherwise indicated.
2. Install grounding conductor pigtail in the base for connecting luminaire to grounding system.

B. Ground nonmetallic poles and support structures according to Division 16 Section
"Grounding and Bonding."

1. Install grounding electrode for each pole.
2. Install grounding conductor and conductor protector.
3. Ground metallic components of pole accessories and foundations.

Measurement and Payment:
No 3 ½ Rated Pullbox, BEGA-88 302-K3 Light Fixture, BEGA-33 163-K3 Light Fixture, BEGA-33 165-K3 Light Fixture, BEGA-77 8552-K3-NON-SKID-LENS Light Fixture, BEGA-19 580 25W LED Remote Driver, and 12"X18"X12" NEMA 3R Box will be measured as a unit for each item installed and will be paid for at the contract unit price each, which price will be full compensation for the work, complete in place.

2 In PVC Sch 40 Conduit, 1 In PVC Sch 40 Conduit, ¾ In PVC Sch 40 Conduit, ½ In PVC Sch 40 Conduit, No 12 AWG THHN Wire, No 8 AWG THHN Wire, and No 2 AWG THHN Wire will be measured by the linear foot and will be paid for at the contract unit price per linear foot, which price will be full compensation for the work complete in place.

No additional payment will be made for all work, as specified herein, the cost being considered incidental to this item.

ITEM NO. 44 SECTION 328400 AUTOMATIC IRRIGATION SYSTEM

PART 1: GENERAL

1.01 SCOPE:

Provide labor, materials, supplies, equipment, tools, and transportation, and perform all operations in connection with and reasonably incidental to the complete installation of the irrigation system, and guarantee/warranty as shown on the drawings, the installation details, and as specified herein. Where the term "Contractor" is used in this section, it refers to the irrigation Contractor. Items of work specifically included are:

A. Procurement of all applicable licenses, permits, and fees as required by local utilities.
B. Coordination of Utility Locates ("Call Before You Dig").
C. Sleeving for irrigation pipe and wire.
D. Coordination for, and connection to, electrical power supply for irrigation control system.
E. Installation of irrigation system including water source connections.
F. Preparation of Record Drawings.
G. Maintenance period.

1.02 RELATED DOCUMENTS
A. Division 00 Specifications – Procurement and Contracting Requirements
B. Division 01 Specifications – General Requirements
C. Division 26 Specifications – Electrical
D. Division 31 Specifications – Earthwork
E. Division 32 Specifications – Exterior Improvements

1. Section 329000 - Planting

F. Division 33 Specifications – Utilities

1.03 APPLICABLE STANDARDS

A. ASTM D2241 Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR)
B. ASTM D2464 Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Threaded, Schedule 80
C. ASTM D2466 Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Threaded and Socket, Schedule 40
D. ASTM D24647 Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Socket, Schedule 80
E. ASTM D2564 Solvent cements for Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings
F. ASTM D2855 Making Solvent - Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings
G. ASTM F-477 Gasket Pocket Pipe

1.04 GUARANTEE/WARRANTEE AND MAINTENANCE

A. The Contractor is required to guarantee and warrantee the automatic irrigation system in accordance with form below. A copy of the guarantee/warrantee form shall be included in the Operations and Maintenance Manual. The guarantee/warrantee form shall be on the Contractor's letterhead and contain the following information:

GUARANTEE/WARRANTEE FOR AUTOMATIC IRRIGATION SYSTEM

We hereby guarantee that the automatic irrigation system we provided is free from defects in materials and workmanship, and the work has been completed in accordance with the drawings and specifications, ordinary wear and tear, and unusual abuse or neglect excepted. We agree to warrantee the materials and installation, and to repair or replace any defects in material or workmanship including repair of backfill settlement which may develop during the period of ONE (1) YEAR from date of Final Acceptance and to repair or replace any damage related to such defects at no additional cost to the Owner. We shall make such repairs or replacements within a reasonable time, as determined by Owner, after receipt of written notice from the Owner, we authorize the Owner to proceed to have said repairs or replacements made at our expense and we will pay the costs and charges therefore upon demand.

PROJECT:

LOCATION:

CONTRACTOR:

ADDRESS:

PHONE:

DATE OF ACCEPTANCE:

CONTRACTOR REPRESENTATIVE SIGNATURE

B. Contractor maintenance period includes, but is not necessarily limited to the following:
   1. Adjustment of sprinkler height and alignment to compensate for settlement and/or plant growth.
   2. Backfilling of all trenches.
   3. Adjustment of head coverage (arc and radius) as necessary for uniform coverage.
   4. Clearing nozzles that may be plugged by foreign material.
   5. Adjustment of controller as necessary to ensure proper sequence and watering time.
   6. Required maintenance to keep the system in good operating order.

C. Guarantee and maintenance after final acceptance do not include alterations as necessitated by re-landscaping, re-grading, addition of trees or the addition and/or changes in sidewalks, walls, driveways, etc.

1.05 SUBMITTALS

A. The Contractor shall submit to the Owner's Representative one PDF copy of manufacturer's "cut sheet" for each type of sprinkler head, pipe, controller, communication system, valves, emitters, valve boxes, flow sensors, master valves, wire, wire connectors, gate valves, fittings, solvents, distribution tubing, air relief valves, wye filters, conduit, and all other types of fixtures and equipment which he proposes to install on the job. The submittal shall include the manufacturer's name, model number, equipment capacity and manufacturer's installation recommendation, if applicable, for each proposed item. The Contractor shall re-submit any rejected items until approvals are obtained. Resubmit only those items that were previously rejected or missing.

B. Materials List: Include sleeving, pipe, fittings, mainline components, sprinkler and bubbler components, drip irrigation components, control system components, shop drawings and other components shown on drawings and installation details or described herein. Include pipe sealant, wire, wire connectors, ID tags, and other miscellaneous items. Quantities of materials need not be included.

C. A contract will not be issued to the Contractor until he has submitted the required information. No partial submittal will be accepted and submittals shall be neatly bound into a brochure and logically organized. After the submittal has been approved, substitutions will not be allowed except by written consent of the Owner's Representative.

D. Shop Drawings: Submit shop drawings called for in installation details. Show products required for proper installation, their relative locations, and critical dimensions. Note modifications to installation detail.

1.06 SUBSTITUTION OF MATERIALS

A. This irrigation system has been designed based on the irrigation components herein stated and as shown on the plans. Any changes of brand name, trade name, trademarked, patented articles, or any other substitutions will be allowed only by written order signed by the Owner's Representative. The Owner is under no obligation to accept materials other than as specified. If a bidder wishes for a substitute item to receive consideration as an "approved equal," the bidder and each item must meet all of the following requirements without exceptions.

B. An item, to be considered a substitute, must meet the same specifications of materials, fabrication or construction, dimension or size, shape, finish, performance standards, warranty or guarantee, and any other pertinent and salient features of quality, as indicated in manufacturer's specifications for original specified item.

C. A sample of the item, along with a written request for consideration, shop drawings, and written specifications, must have been received by the Owner's Representative a minimum of ten (10) days before the bid opening date. The item shall then be examined, and the bidder shall be notified, in writing, five (5) days prior to the deadline for receiving bids, whether or not the item is an "approved equal." The Owner's Representative shall be the final judge of whether or not an item submitted for consideration qualifies as being an acceptable substitute.

D. Under no circumstances shall an item be given consideration as an "approved equal" substitute later than ten (10) days before the bid opening. After that date, all items shall be bid per the original specifications. Likewise, unless approved as an "accepted equal" per the time frame and the requirements above, the successful bidder (known as Contractor after signing the contract) shall install all items per the original plans and specifications. Equipment or material installed or furnished without prior approval of the Owner's Representative as herein specified, may be rejected and the Contractor required to remove such materials at his own expense.

E. The Contractor alone shall bear complete responsibility for the installation and operation of any material or equipment installed on the job (as a substitute for specified equipment or material) should such substituted material prove to be defective, inoperable or in-applicable.

1.07 QUALITY ASSURANCE

A. Work under this contract shall comply with the provisions of these specifications, as illustrated on the accompanying drawings, and as directed by the Owner's Representative, and shall satisfy all applicable local codes, ordinances, or regulations of the governing bodies and all authorities having jurisdiction over this project. Wherever contract documents call for materials or construction of better quality or larger size

than required by above-mentioned rules and regulations, provide quality and size required by contract documents.

B. Installation of equipment and material shall be done in accordance with the requirements of the National Electric Code, local and International Plumbing Code and standard plumbing procedures. The drawings and these specifications are intended to comply with applicable rules and regulations; however, some discrepancies may occur. Where such discrepancies occur, the Contractor shall immediately notify the Owner's Representative in writing of the discrepancies and apply for an interpretation. Should the discovery and notification occur after the execution of a contract, any additional work required for compliance with the regulations shall be paid for as covered by these contract documents.

C. If quantities are furnished either in specifications or on drawings, quantities are furnished for information only. It is Contractor's responsibility to determine actual quantities of material, equipment, and supplies required by the project and to complete independent estimate of quantities and wastage.

D. The Contractor shall provide advance notice, obtain all permits and pay all costs in connection with his work; file with all governmental departments having jurisdiction; obtain all required certificates of inspection for his work and deliver to the Owner's Representative before request of acceptance and final payment for the work.

E. The Contractor shall include in the work any labor, materials, services, apparatus or drawings in order to comply with all applicable laws, ordinances, rules and regulations whether or not shown on the drawings and/or specified.

F. Prequalification:
The installation of the irrigation system shall be made by an individual or firm duly licensed under the State of Arizona Registrar of Contractors. The Contractor must demonstrate successful completion of at least five comparable projects within the last five years.

1.08 SUPERINTENDENT

A. A construction superintendent satisfactory to the Owner's Representative must supervise construction under this contractor. The superintendent shall not be changed, except with the consent of the Owner's Representative.

B. The superintendent must be authorized by the Contractor to act as official field representative of their firm and staff.

1.09 NOTIFICATION OF OWNER'S REPRESENTATIVE

A. The Owner's Representative shall have free access to the work whenever it is in preparation or progress and proper facilities, for such access and inspection. The Contractor shall notify the Owner's Representative when he will and will not be on the job. Should the Contractor work periodically on the job, the Owner's Representative shall have the right to require the Contractor to give a 24-hour notice of each and every day or partial day that he intends to work on the project. The Contractor shall perform no work, unless the Owner's Representative has been properly notified. Failure to notify the Owner's Representative may require the Contractor to redo, uncover pipe, expose for inspection, etc., all that the Owner's Representative was unable to inspect.

1.10 EXISTING UTILITIES - LOCATION AND ELEVATIONS

A. The Contractor shall examine the site and verify to his own satisfaction the locations and elevations of all utilities and availability of utilities and services required. Contractor shall employ the services of a professional utility locator service to mark all existing on site utilities in the construction area prior to beginning work and as needed to maintain clear indications of utility locations.

B. The Contractor shall inform himself and all staff working on the project as to their relation to the work and the submission of bids shall be deemed as evidence thereof. The Contractor shall repair, to the satisfaction of the Owner's Representative, damage to any utility or site improvement that will remain, whether or not it is shown on the plans and at no additional cost to the owner.

C. Should utilities not shown on the plans be found during excavations, Contractor shall promptly notify Owner's Representative for instructions as to further action.

D. Contractor shall make necessary adjustments in the layout as may be required to connect to existing stubouts, should any such stubouts not be located exactly as shown and as may be required to work around existing work, at no increase in cost to the Owner. All such work will be recorded on record drawings and turned over to the Owner's Representative prior to final acceptance.

E. Remove and dispose of existing asbestos-concrete (transite) irrigation pipe discovered on this project site in accordance with the General Conditions, Specifications Division 01 and Environmental Protection Agency rules and regulations.

1.11 COOPERATION OF TRADES

A. Work under this contract may be accomplished with other Contractors and trades on the project site at the same time. The Contractor shall allow

each Contractor and trade adequate time at the proper state of construction to fulfill his contract.

1.12 RECORD DRAWINGS

A. Submit Record Drawings under provisions of Section 017800 – Closeout Submittals.

B. Document changes to design. Maintain on-site and separate from documents used for construction, one complete set of contract documents as Project Documents. Keep documents current. Do not permanently cover work until accurate "as-built" information is recorded.

C. Record pipe and wiring network alterations daily. Record work that is installed differently than shown on construction drawings. Record accurate reference dimensions, measured from at least two permanent reference points, of each irrigation system valve, each backflow prevention device, each controller assembly, mainline pipe at 100' intervals and at all directional changes greater than 22-degrees, two-wire path routing at 100' intervals, each sleeve end, each stub-out for future pipe or wiring connections, and other irrigation components enclosed within valve box.

D. Obtain AutoCAD files of original design from Owner's Representative prior to substantial completion walk-through. Transfer information contained on Project Documents into electronic format in AutoCAD. Label each sheet "Record Drawing" after electronic transfer is completed.

E. Turn over one hardcopy set and one electronic file in AutoCAD .dwg and Bluebeam .pdf formats of "Record Drawings" to Owner's Representative. Completion of Record Drawings is required prior to final construction review at completion of irrigation system installation.

1.13 CONTROLLER CHARTS

A. Do not prepare charts until Record Drawings have been approved by the Owner's Representative.

B. Provide one controller chart for each controller installed on this project.
   1. Chart may be a reproduction of the Record Drawing, if the scale permits fitting the controller door. If photo reduction prints are required, keep reduction to maximum size possible to retain full legibility. Coordinate with parks staff prior to developing controller charts to determine acceptable format.
   2. Chart shall be blackline print of the actual system, showing the area covered by that controller.

C. Identify the area of coverage of each remote control valve, using a distinctly different pastel color, drawn over the entire area of coverage.

D. Following approval of controller charts by the Owner's Representative, they shall be hermetically sealed between two layers of 20 mil thick plastic sheet.

E. Controller charts must be completed and approved prior to final acceptance of the irrigation system.

1.14 OPERATING AND MAINTENANCE MANUALS

A. Provide two individually bound manuals and two (2) digital copies on thumb drive detailing operating and maintenance requirements for irrigation systems.

B. Manuals shall be delivered to the Owner's Representative no later than 10 days prior to completion of work.

C. Provide descriptions of all installed materials and systems in sufficient detail to permit maintenance personnel to understand, operate and maintain the equipment.

D. Provide the following in each manual:
   1. Index sheet, stating Irrigation Contractor's name, address, telephone number and name of person to contact.
   2. Duration of warranty/guarantee period.
   3. Equipment list providing the following for each item:
      a. Manufacturer's name
      b. Make and model number
      c. Name and address of local manufacturer's representative
      d. Spare parts list in detail
      e. Detailed operating and maintenance instructions of major equipment.

1.15 CHECKLIST

A. Provide a signed and dated checklist and deliver to the Owner's Representative prior to final acceptance of the work.

B. Use the following format:
   1. Plumbing permits: if none required, so note.
   2. Material submittal approvals: approved by and date.
   3. Pressure line tests: by whom and date.
   4. Record drawings: received by and date.
   5. Controller charts: received by and date.
   6. Operation and maintenance manuals: received by and date.
   7. Manufacturer's warranties if required: received by and date.
   8. Written guarantee: received by and date.

1.16 WATER SERVICE

A. Coordinate and connect to the irrigation water service at the point of connection for this project as shown on the drawings and described in these specifications.

1.17 CLOSEOUT EQUIPMENT TO BE FURNISHED

A. Supply as part of this contract the following tools:
   1. Two sets of special tools required for removing, disassembling and adjusting each type of sprinkler and valve supplied on this project.
   2. Three valve box keys or wrenches.
   3. Three of each replacement sprinkler heads for each type of full and part circle head with full sets of nozzles.
   4. Twelve of each emitter type and discharge rate.
   5. One five foot gate valve key.

B. The above-mentioned equipment shall be turned over to Owner at the conclusion of the project. Before final inspection can occur, evidence that the Owner has received material must be shown to Owner's Representative.

1.18 SLEEVES AND ELECTRICAL CONDUITS

A. Contractor is responsible for coordinating and installing sleeves and electrical conduits as noted on the drawings or as required by the project. Not all required sleeves or conduits are shown on the drawings. Contractor shall be responsible for timely placement of all sleeves and conduits at no additional cost to the Owner.

1.19 PROGRESS MEETINGS

A. Contractor shall attend all progress meetings as requested by Owner's Representative during installation.

PART 2: PRODUCTS

2.01 QUALITY:

Materials used in the system must be new and without flaws or defects of any type and must be the best of their class and kind.

2.02 SLEEVING:

A. Provide sleeve beneath hardscape for irrigation pipe. Provide separate conduit beneath hardscape for two-wire path.

B. Provide PVC Class 200 pipe with solvent welded joints for sleeving material beneath hardscape.

C. Sleeve sizing: A minimum of twice the nominal diameter of solvent-welded pipe or wiring bundle, or as indicated on drawings. Sleeve diameter for gasketed pipe must accommodate outside diameter of joint-restraint casing spacers, refer to joint-restraint manufacturer's sizing recommendations.

D. Sleeves shall extend a minimum of 2 feet into the planting area. Each sleeve shall be taped along its entire length with metallic locator tape manufactured for that purpose.

E. Sleeves shall have a minimum horizontal clearance of 12" from each other and other piping. Sleeves shall not be installed parallel and directly over another line. Sleeves shall have a minimum of 6 inches vertical clearance where they cross other lines.

2.03 PIPE AND FITTINGS:

A. Mainline Pipe and Fittings:

1. Use rigid, unplasticized polyvinyl chloride (PVC) 1120, 1220 National Sanitation Foundation (NSF) approved pipe, extruded from material meeting requirements of Cell Classification 12454-A or 12454-B, ASTM Standard D1784, with integral belled end.
2. PVC pipe shall bear the following markings:
   a. Manufacturer's name
   b. Nominal pipe size
   c. Schedule or class
   d. Pressure rating in PSI
   e. National Sanitation Foundation (NSF) approval
   f. Date of extrusion
3. For pipe sizes 3-inches and smaller use Schedule 40 conforming to dimensions and tolerances established by ASTM Standard D1785.
4. For pipe sizes 4-inches and larger use Class 200, SDR-21, rated at 200 PSI, conforming to dimensions and tolerances established by ASTM Standard D2241.
5. Use rubber-gasketed pipe equipped with factory installed reinforced gaskets for mainline pipe with nominal diameter greater than or equal to 4-inches. Use Gasketed pipe joints conforming to

"Laboratory Qualifying Tests" section of ASTM D3139. Use gasket material conforming to ASTM F477. Use Harco or approved equal rubber-gasketed deep bell ductile iron fittings conforming to ASTM A-536 and ASTM F-477. Use lubricant approved by pipe manufacturer. Polyethylene encasement meeting the requirements of AWWA C105 must be used to wrap and protect iron and ferrous pipes and fittings.

6. Use solvent weld pipe for mainline pipe with nominal diameter 3-inches or smaller. Use Schedule 40, Type 1, PVC solvent weld fittings conforming to ASTM Standards D2466 and D1784. Use primer approved by pipe manufacturer. Use solvent cement conforming to ASTM Standard D2564.
7. Mainline pipe within sleeves: Use solvent weld pipe for mainline pipe with nominal diameter 3-inches and smaller installed within sleeves. Use pipe equipped with factory installed reinforced gaskets for mainline pipe with nominal diameter of 4-inches and larger installed within sleeves. Provide restrained casing spacers where gasketed joints occur within sleeve.

B. Lateral Pipe and Fittings:
1. Use rigid, unplasticized polyvinyl chloride (PVC) 1120, 1220 National Sanitation Foundation (NSF) approved pipe, extruded from material meeting requirements of Cell Classification 12454-A or 12454-B, ASTM Standard D1784, with integral belled end suitable for solvent welding.
2. PVC pipe shall bear the following markings:
   a. Manufacturer's name
   b. Nominal pipe size
   c. Schedule or class
   d. Pressure rating in PSI
   e. National Sanitation Foundation (NSF) approval
   f. Date of extrusion
3. Use Schedule 40 conforming to dimensions and tolerances established by ASTM Standard D1785.
4. Use solvent weld pipe for lateral pipe. Use Schedule 40, Type 1, PVC solvent weld fittings conforming to ASTM Standards D2466 and D1784 for PVC pipe. Use primer approved by pipe manufacturer. Solvent cement to conform to ASTM Standard D2564, of type approved by pipe manufacturer.

C. Specialized Pipe and Fittings:
1. Copper pipe: Use Type "K" rigid pipe conforming to ASTM Standard B88. Use wrought copper or cast bronze fittings, soldered, flared mechanical, or threaded joint per installation details or local code. Use a 95-percent tin and 5-percent antimony solder.

2. Ductile iron pipe: Use Class 50 conforming to ANSI A21.51 (AWWA C151). Use minimum of Class 53 thickness pipe for flanged piping. Use mechanical joints conforming to ANSI A 21.10 (AWWA C110) and ANSI A21.11 (AWWA C111) or flanged fittings conforming to ANSI/AWWA C110 and ANSI B16.1 (125#).
3. Use dielectric union wherever copper-based metal (copper, brass, bronze) is joined to iron-based metal (iron, galvanized steel, stainless steel).
4. Use stainless-steel fasteners and rubber gaskets for flanged connections.
5. Use PVC Schedule 80 nipples and PVC Schedule 40 threaded fittings for threaded pipe connections.
6. Joint sealant: Use non-hardening, nontoxic pipe thread sealant formulated for use on threaded connections and approved by pipe fitting or valve manufacturer.

D. Thrust Blocks:
   1. Use 3,000 PSI concrete. Use commercially pre-mixed concrete unless written approval is provided by Owner's Representative prior to construction.
   2. Use 2 mil plastic protective sheeting.
   3. Use No. 4 Rebar wrapped or painted with asphalt tar-based mastic coating.

2.04 COPPER TRACING WIRE:

A. Use American Wire Gauge (AWG) No. 12-1 solid copper, 600 volt, Type UF or PE cable, UL approved for direct underground burial.

B. Color: Tracing wire must be of color different from that of any active two wire cable, control wire, or common wire. Wire color shall be continuous over entire length.

C. Splices: Use 3M DBR/Y-6 wire connector with waterproof sealant.

2.05 MAINLINE COMPONENTS:

A. Isolation Gate Valve Assembly: as presented in drawings and installation details.

B. Quick Coupling Valve Assembly: as presented in drawings and installation details.

C. Air-Vacuum Relief Valve Assembly: as presented in drawings and installation details.

D. Master Valve and Flow Sensor Assembly Components: as presented in drawings and installation details.

2.06 SPRINKLER IRRIGATION COMPONENTS:

A. Remote Control Valve (RCV) Assembly for Sprinkler Laterals: as presented in drawings and installation details.

B. Sprinkler Assembly: as presented in drawings and installation details.

C. Manufacturer's Minimum Warranty for sprinklers: 5 years

2.07 DRIP IRRIGATION COMPONENTS:

A. Drip Remote Control Valve (DRCV) Assembly: as presented in drawings and installation details.

B. Drip Emitter Assembly:
   1. Use emitter device as presented in drawings and installation details.
   2. Use flexible plastic distribution tubing to direct water from emitter outlet to emission point. Use distribution tubing compatible with emitters. Do not exceed maximum length between emitter and

distribution tubing outlet indicated on plans. Use tubing stakes to anchor distribution tubing.

3. Provide access sleeve for each multiple-outlet emitter assembly.

C. Flush Valve Assembly: as presented in drawings and installation details.

2.08 CONTROL SYSTEM COMPONENTS:

A. Irrigation Control System:
   1. Baseline SubStation two-wire decoder system as presented in drawings and installation details, compatible with City of Chandler standard BaseManager Central Control Software. Contact Pat Johnston at Horizon Irrigation (602.768.1287) for ordering information.
   2. Provide, install and test control system including grounding, peripherals, interface components, and communication hardware as required to receive manufacturer's extended warranty.
   3. Software: Provide to the Owner a software license-to-use document specifying terms and conditions of the license-to-use including the training, support, and update provisions noted herein.

B. Training: Provide the equivalent of one (1) full-day training session, for up to three user personnel, conducted by the manufacturer's training personnel, on-site using the project's central system, at a place and time to be determined. The Contractor must help schedule and coordinate the training session. Include an overview of system operations and functions as well as detailed one-on-one training for selected individuals.

C. Support: The control system manufacturer is to provide phone-in support to the Owner at no cost for a period of 5 years within the initial purchase price of the system.

D. Lightning protection: As presented in drawings and installation details.

E. Two-wire Cable from Controller to Decoders:
   1. Use UF/UL direct-bury two-wire cable per controller manufacturer's guidelines. Minimum conductor size is #12 AWG.
   2. Splices: per manufacturer's guidelines.
   3. Electrical conduit: Use PVC Schedule 40 conduit conforming to dimensions and tolerances established by ASTM Standard D-1785. Use Schedule 40, Type 1, PVC solvent weld sweep fittings for PVC conduit conforming to ASTM Standards D2466 and D1784 for buried installations. Use rigid metallic conduit with sweep elbows for above grade installations.
   4. Warning tape: Inert plastic film highly resistant to alkalis, acids, or other destructive chemical components likely to be encountered in soils. Three inches wide, colored red, and imprinted with "CAUTION: BURIED ELECTRIC LINE BELOW."

2.09 SOIL MOISTURE SENSOR:

A. Acceptable Manufacturer:
   1. Baseline Irrigation Solutions 15-inch biSensor: Contact Lisa Rienstra (480.278.3966, lrienstra@baselinesystems.com) for ordering information

B. Minimum Soil Moisture Sensor Requirements:
   1. Must be fully sealed, submersion proof, and direct bury that effectively seals moisture from electronics and must be installed per manufacturer's guidelines.
   2. Must provide automatic and continuous measurements of soil moisture.
   3. Must be capable of measuring volumetric soil moisture changes less than 0.1 percent.
   4. Must be capable of measuring volumetric soil moisture within +/- 3 percent of the actual volumetric soil moisture content.
   5. Must include a built-in temperature sensor (thermistor) that provides automatic and continuous measurement of soil temperature.
   6. Thermistor must be capable of reading soil temperatures between 33°F and 120°F and must be capable of measuring temperature within +/- 1.12°F of actual temperature.
   7. Must be TDT (time domain transmissibility) technology sensor that accurately measures soil moisture.
   8. Salinity and other minerals in the soil must not affect the soil moisture sensor readings.
   9. Must be constructed of a multi-layer fiberglass stick.
   10. Must include a conditional 5-year warranty.

2.10 VALVE BOXES

A. Use plastic rectangular box for all electrical control valves as required. Detail as shown. Provide stainless steel bolts.

B. Provide extensions as required to ensure box rests on continuous soil base.

C. All openings including the bottom to be sealed with geotextile fabric.

D. Valve boxes shall be as follows:
   1. Quick Coupling Valves, Gate Valves, Emitter Flush Caps: 10-inch round box with locking T-cover
   2. Junction Box, Pull Box, Flow Sensor, Sprinkler Remote Control Valves, Air/Vacuum Relief Valves: Standard rectangular valve box with locking T-cover
   3. Drip Control Valve Assembly, Master Valve Assembly: Jumbo rectangular valve box with locking T-cover

2.11 OTHER COMPONENTS:

A. Tools and Spare Parts: Furnish operating keys, servicing tools, test equipment, spare parts and other items indicated in drawings and specifications.

B. Other Materials: Provide other materials or equipment shown on drawings or installation details that are part of irrigation system, even though items may not have been referenced in specifications.

PART 3 EXECUTION

3.01 INSPECTIONS AND REVIEWS:

A. Site Inspections:

1. Verify construction site conditions and note irregularities affecting work of this section. Report irregularities in writing to Owner's Representative prior to beginning work.
2. Commencement of work implies acceptance of existing site conditions.

B. Utility Locates ("Call Before You Dig"):

1. Arrange and coordinate Utility Locates with local authorities prior to construction.
2. Repair underground utilities that are damaged during construction. Make repairs at no additional cost to contract price.

3.02 INSTALLATION

A. General

1. Contractor Responsibility: The Contractor shall not willfully install the irrigation system as shown on the drawings when it is obvious in the field that obstructions, grade differences or discrepancies in equipment usage, area dimensions or static water pressure exist that might not have been considered in the engineering. Such obstructions or differences shall be brought to the attention of the Owner's Representative. In the event this notification is not performed, the Contractor shall assume full responsibility for any revision necessary.
2. All material and equipment shall be delivered to the job site in unbroken reels, cartons or other packaging to demonstrate that such material is new and of a quality and grade in keeping with the intent of these specifications.

B. Site Conditions

1. All scaled dimensions are approximate. The Contractor shall check and verify all size dimensions and receive Owner's Representative approval prior to proceeding with work under this Section.
2. Exercise extreme care in excavating and working near existing utilities. Contractor shall be responsible for damage to utilities

which are caused by his operation or neglect. Contractor to employ the services of a professional utility locator service to locate all existing on site utilities in the construction area prior to beginning work and as needed to maintain clear indications of utility locations.

3. Coordinate installation of irrigation materials, including pipe, so there shall be no interference with utilities or other construction or difficulty in planting trees, shrubs, and ground covers. Contractor shall coordinate with other Contractors to insure timely placing of necessary sleeves, wires and pipes under walks, curbs and paving.
4. Design Pressure: This irrigation system has been designed to operate with a minimum static inlet water pressure as shown on the drawings. The Contractor shall take a pressure reading prior to beginning construction. If the pressure reading is less than indicated, the Contractor shall notify the Owner's Representative.

3.03 PREPARATION

A. Stake out irrigation system. Items staked include: sprinklers, pipe, sleeves, control valves, air/vacuum relief valves, controller assemblies, and isolation valves.

B. Irrigation System Layout Review: Irrigation system layout review will occur after staking has been completed. Notify Owner's Representative one week in advance of review. Modifications will be identified by Owner's Representative at this review.

C. Install irrigation components inside of project property lines. Strict adherence shall be made to provide clearances between irrigation lines and other utilities as required by MAG and COC Standards.

3.04 EXCAVATION, TRENCHING, AND BACKFILLING:

A. Excavate and install pipes at minimum cover indicated in drawings or specifications. Excavate trenches at appropriate width for connections and fittings. All lines shall have a minimum clearance of 6" from each other, and from lines of other trades. Parallel lines shall not be installed directly over one another.

B. Minimum cover (distance from top of pipe or control wire to finish grade):
   1. Mainline pipe, 6-inch and larger: 30-inches to top of pipe.
   2. Mainline pipe, 4-inch and smaller: 24-inches to top of pipe.
   3. Lateral pipe: 18-inches to top of pipe.
   4. Electrical conduit: 24-inches to top of pipe.
   5. Two-wire path (within conduit): 2-inch offset from bottom of mainline unless otherwise noted.
   6. Sensor cable: 2-inch offset from bottom of mainline pipe.

C. Maintain at least 15-feet clearance from centerline of trees, unless

approved in writing by authorized Owner's Representative.

D. PVC lateral pipe must be installed in open trench. Pipe pulling is not allowed. Install pipe at burial depths listed above.

E. Backfill only after lines have been reviewed and tested. Excavated material is generally satisfactory for backfill. Use backfill free from rubbish, vegetable matter, and stones larger than 3/8-inch in maximum diameter. Remove material not suitable for backfill. Use backfill free of sharp objects next to pipe. Backfill trench by depositing backfill material equally on both sides of pipe in 6-inch layers and compacting to density of surrounding soil.

F. Enclose pipe and wiring beneath roadways and hardscapes in separate sleeves. Minimum compaction of backfill for sleeves shall be 95 percent Standard Proctor Density, ASTM D698-78. Use of water for compaction around sleeves, "puddling", will not be permitted.

G. Dress backfilled areas to original grade. Incorporate excess backfill into existing site grades. Dispose of excess backfill off site.

H. Contact Owner's Representative for trench depth or alignment adjustments where utilities or site amenities conflict with irrigation trenching and pipe work.

3.05 SLEEVING AND BORING:

A. Provide sleeving at depth that permits encased pipe or wiring to remain at specified burial depth.

B. Extend sleeve ends twelve inches beyond edge of hardscape. Cap sleeve ends and mark with stakes. Provide rope or wire through sleeve and secure to stake at surface grade at each end for future sleeve location.

C. Bore for sleeves under obstructions that cannot be removed. Employ equipment and methods designed for horizontal boring.

3.06 ASSEMBLING PIPE AND FITTINGS:

A. General:

1. Keep pipe free from dirt and debris. Cut pipe ends square, debur and clean as recommended by manufacturer.
2. Keep ends of assembled pipe capped. Remove caps only when necessary to continue assembly.
3. Trenches may be curved to change direction or avoid obstructions within limits of the curvature of pipe. Curvature results from bending of pipe lengths. Do not exceed pipe and fitting manufacturer's allowable deflection at joints.
4. Install concrete thrust blocks in accordance with fitting manufacturer recommendations and instructions and per MAG

Standard Spec 380. Thrust blocks shall be installed for gasketed mainline segments at all changes in direction, elevation, gate valves and tees. Thrust blocks must bear on undisturbed soil.

B. Mainline Pipe and Fittings:
   1. Use only strap-type friction wrenches for threaded plastic pipe.
   2. PVC Rubber-Gasketed Pipe: Use pipe lubricant. Join pipe in manner recommended by manufacturer and in accordance with accepted industry practices.
   3. PVC Solvent Weld Pipe:
      a. Use primer and solvent cement. Join pipe in manner recommended by manufacturer and in accordance with accepted industry practices.
      b. Cure for 30 minutes before handling and 24 hours before allowing water in pipe.
      c. Snake pipe from side to side within trench.
   4. Fittings:
      a. Use of cross type fittings is not permitted.
      b. Do not strike ductile iron fittings with metallic tools. Cushion blows with wood block or similar shock absorber.

C. Lateral Pipe and Fittings:
   1. Use only strap-type friction wrenches for threaded plastic pipe.
   2. PVC Solvent Weld Pipe:
      a. Use primer and solvent cement. Join pipe in manner recommended by manufacturer and in accordance with accepted industry practices.
      b. Cure for 30 minutes before handling and 24 hours before pressurizing or installing with vibratory plow.
      c. Snake pipe from side to side within trench.
   3. Fittings: Use of cross type fittings is not permitted.

D. Specialized Pipe and Fittings:
   1. Copper Pipe:
      a. Use flux and solder. Join pipe in manner recommended by manufacturer and in accordance with local codes and accepted industry practices.
      b. Solder so that continuous bead shows around the joint circumference.
   2. Ductile Iron Pipe: Join pipe in the manner recommended by manufacturer and in accordance with accepted industry practices.
   3. Insert dielectric union or flange wherever copper-based metal (copper, brass, bronze) and iron-based metal (iron, galvanized steel, stainless steel) are joined.
   4. Flanged connections: Install fittings, fasteners and gaskets in manner recommended by manufacturer and in accordance with accepted industry practices.

3.07 INSTALLATION OF MAINLINE COMPONENTS:

A. Isolation Gate Valve Assembly: Provide where indicated on drawings. Install at least 12-inches from and align with adjacent walls or edges of paved areas. Brand "GV" on valve box lid in 2-inch high letters.

B. Quick Coupling Valve Assembly: Provide where indicated on drawings. Brand "QC" on valve box lid in 2-inch high letters.

C. Air-Vacuum Relief Valve Assembly: Install where indicated on drawings or nearest high point, not closer than 2-feet from nearest fitting. Brand "AV" on valve box lid in 2-inch high letters.

D. Master Valve and Flow Sensor Assembly: Install where indicated on drawings. Place vault in a location that does not conflict with utilities, hardscape, etc. Make all necessary two wire and decoder connections to the master valve and flow sensor per controller manufacturer's guidelines.

3.08 INSTALLATION OF SPRINKLER IRRIGATION COMPONENTS:

A. Remote Control Valve (RCV) Assembly:
1. Thoroughly flush mainline and/or sub-mainline before installation of RCV assembly.
2. Provide where indicated on drawings. Use wire connectors as specified to connect control wires to remote control valve wires.
3. Provide only one RCV to a valve box. Locate valve box at least 12-inches from and align with nearby walls or edges of paved areas. Group RCV assemblies together where practical. Align grouped valve boxes in uniform patterns. Allow at least 12-inches between valve boxes. Brand controller letter and station number on valve box lid in 2-inch high letters.
4. Adjust RCV assembly to regulate downstream operating pressure.
5. Attach ID tag with controller station number to control wiring.

B. Sprinkler Assembly:
1. Thoroughly flush lateral pipe before installing sprinkler assembly.
2. Provide per installation details at locations shown on drawings.
3. Locate rotor sprinklers 6-inches from adjacent walls, fences, or edges of paved areas.
4. Locate spray sprinklers 3-inches from adjacent walls, fences, or edges of paved areas.
5. Install sprinklers perpendicular to finish grade.
6. Provide appropriate nozzl and adjust arc of coverage of each sprinkler for best performance and uniform coverage.
7. Adjust radius of throw of each sprinkler for best performance and uniform coverage.

3.09 INSTALLATION OF DRIP IRRIGATION COMPONENTS:

A. Drip Remote Control Valve (DRCV) Assembly:

1. Thoroughly flush mainline pipe before installing DRCV assembly.
2. Provide where indicated on drawings. Use wire connectors as specified to connect control wires to remote control valve wires.
3. Provide only one DRCV to valve box. Locate at least 12-inches from and align with nearby walls or edges of paved areas. Group RCV assemblies together where practical. Align grouped valve boxes in uniform patterns. Allow at least 12-inches between valve boxes. Brand controller letter and station number on valve box lid in 2-inch high letters. Arrange grouped valve boxes in rectangular patterns.

B. Drip Emitter Assembly:
1. Locate as shown on drawings and installation details.
2. Flush lateral pipe before installing emitter assembly.
3. Cut emitter outlet distribution tubing square.
4. Provide access sleeve as part of each multiple-outlet emitter assembly for emitters located in turf areas.
5. Use tools manufactured, and techniques recommended, by emitter manufacturer.
6. Flush Cap Assembly: Provide at end of each drip irrigation lateral pipe as shown and directed on drawings and installation details. Install at least 12-inches from and align with adjacent walls or edges of paved areas. Brand "FV" on valve box lid in 2-inch high letters.

3.10 INSTALLATION OF CONTROL SYSTEM COMPONENTS:

A. Irrigation Controller Assembly:
1. Location of controller assembly as indicated on drawings is approximate; Owner's Representative will determine exact site location upon commencement of contract.
2. Controller assembly is to be pre-assembled within security pedestal and tested by authorized control system manufacturer's representative prior to delivery to the site.
3. Provide connections to electrical and communications services as directed by manufacturer's representative or trained distributor personnel.
4. Lightning protection: Install grounding components as detailed on drawings and in accordance with control system manufacturer recommendations. Connect #6 AWG copper grounding wire to rod using CADWELD connection. Install 6-inch round valve box over each CADWELD connection and grounding plate connection.

B. Two-wire Cable from Controller to Decoders:
1. Route cable within Sch 80 PVC conduit as directed on plans. Install with a minimum number of field splices.
2. Two-wire cable conduit shall be laid in trenches when installed with

mainline pipe. Minimum burial depths must be maintained as previously listed.

3. Carefully backfill around cable conduit to avoid damage to wire insulation or wire connectors.
4. If cable must be spliced, make splice with recommended connector, installed per manufacturer's recommendations. Locate splices in a separate jumbo valve box. Coil 3 feet of communication cable in valve box.
5. Provide electrical valve box lid and brand lid with "CS" for each cable splice box. Branding device must create letters a minimum of 2-inches in height and 0.2-inches deep in lid.
6. Unless noted on plans, install wire parallel with, and below mainline pipe.
7. Protect conduit with a continuous run of warning tape placed in the backfill six inches above the wiring.

C. Instrumentation:
1. Provide sensors as indicated on drawings and installation details, and in accordance with manufacturer's recommendations.
2. Provide electrical connections between control system hardware and sensors under direction and observation of manufacturer's trained distributor personnel.

3.11 TESTING:

A. Schedule testing with Owner's Representative a minimum of three days in advance of testing.

B. Mainline pipe jointed with rubber gaskets or threaded connections may be subjected to pressure test at any time after partial completion of backfill. Allow irrigation pipe jointed with solvent-welded PVC joints to cure at least 24 hours before testing.

C. Subsections of mainline pipe may be tested independently, subject to review of Owner's Representative.

D. Provide clean, clear water, pumps, labor, fittings, and equipment necessary to conduct tests or retests.

E. Hydrostatic Pressure Test:
1. Hydrostatic pressure test to be conducted for mainline pipe 3-inches and smaller.
2. Subject pipe to hydrostatic pressure equal to the shut off head of the pump station for two hours. Test with mainline components installed.
3. Backfill to prevent pipe from moving under pressure. Expose couplings and fittings.
4. Purge air from mainline pipe before test. Attach pressure gauge to mainline pipe in test section.

5. Observe pressure loss on pressure gauge. If pressure loss is greater than 5 PSI, identify reason for pressure loss. Replace defective pipe, fitting, joint, valve, or appurtenance. Repeat test until pressure loss is equal to or less than 5 PSI.
6. Visually inspect irrigation pipe for leakage and replace defective pipe, fitting, joint, valve, or appurtenance. Repeat test until pipe passes test.
7. Cement or caulking to seal leaks is prohibited.

F. Volumetric Leakage Test:
1. Volumetric leakage test to be conducted for 4-inch and larger mainline pipe.
2. Backfill to prevent pipe from moving under pressure. Expose couplings and fittings.
3. Purge air from pipeline before test.
4. Subject mainline pipe to a pressure equal to the pump shut off head for two hours. Maintain constant pressure.
5. Provide necessary pumps, bypass piping, storage tanks, meters, 3-inch test gauge, supply piping, and fittings in order to properly perform testing.
6. Testing pump must provide a continuous pressure to the mainline pipe. Allowable deviation in test pressure is 5-PSI during test period. Restore test pressure to pump shut off head at end of test.
7. Water added to mainline pipe must be measured volumetrically to nearest 0.10 gallons.
8. Use following table to determine maximum allowable volume lost during test:

Leakage Allowable (Gallons per (100 Joints) / Hour)

PIPE SIZE (INCHES)	Test Pressure (PSI)								
	60	70	80	90	100	110	120	130	140
4"	0.42	0.45	0.48	0.51	0.54	0.57	0.59	0.62	0.64
6"	0.63	0.68	0.73	0.77	0.81	0.85	0.89	0.92	0.96
8"	0.84	0.90	0.97	1.03	1.08	1.13	1.18	1.23	1.28

Note: Allowable Leakage calculated using $L = (ND\sqrt{P})/7400$
Where: L = Allowable Leakage (gph)

N = Number of Joints

D = Nominal Diameter of Pipe (inches)

P = Average Test Pressure (psi)

9. Replace defective pipe, fitting, joint, valve, or appurtenance. Repeat test until pipe passes test.
10. Cement or caulking to seal leaks is prohibited.

11. Contractor may sub-contract testing to pipeline testing company approved by Owner.

G. Operational Test:
1. Activate each remote-control valve in sequence from controller using hand held remote. Manually activating remote control valve using manual bleed mechanism at remote control valve is not an acceptable method of activation. Owner's Representative will visually observe operation, water application patterns, and leakage.
2. Replace defective remote-control valve, solenoid, wiring, or appurtenance to correct operational deficiencies.
3. Replace, adjust, or move water emission devices to correct operational or coverage deficiencies.
4. Replace defective pipe, fitting, joint, valve, sprinkler, or appurtenance to correct leakage problems. Cement or caulking to seal leaks is prohibited.
5. Repeat test(s) until each remote-control valve and each pipe section passes tests. Repeat tests, replace components, and correct deficiencies at no additional cost to Owner.

H. Copper Tracing Wire:
1. Pass current through wire and demonstrate that wire facilitates locating mainline pipe along entire routing.
2. If wire will not pass current, locate break in circuit, repair or replace wire or splice, and test until tracer wire works in accordance for its intended use.

I. Control System Acceptance Test:
1. Upon completion of construction, Owner's Representatives will administer a System Acceptance Test.
2. Following construction completion and review by Owner's Representative, an evaluation period will begin. After 30 days of continuous service without major system problems system will be accepted and guarantee/warranty period will begin. If at any time during 30-day evaluation period a major system problem occurs, the source of problem will be determined and corrected, and 30-day evaluation period will start again. Equipment will not be accepted until System Acceptance Test is passed.
3. If successful completion of System Acceptance Test is not attained within 90-days following commencement of evaluation period Owner's Representative has the option to request replacement of equipment, terminate the order or portions thereof, or continue with System Acceptance Test. These options will remain in effect until System Acceptance Test is successfully completed.
4. Final payment will be made after successful completion of System Acceptance Test.

J. Two-wire Decoder Cable and Sensor Cable:
   1. Test for leaks to ground per manufacturer's recommendations. Test results must meet or exceed manufacturer's guidelines for acceptance.
   2. Test cable for continuity if cable is being installed for future expansion of the irrigation system.
   3. Replace defective wire, underground splices, or appurtenances. Repeat test until manufacturer's guidelines are met.

K. Control System Grounding:
   1. The control system manufacturer distributor or representative must be present for testing of proper grounding for the controller assembly and two-wire path. Test for proper grounding of control system per manufacturer's recommendations. Test results must meet or exceed manufacturer's guidelines for acceptance.
   2. Replace defective wire, grounding rods, grounding plates, or appurtenance. Repeat test until manufacturer's guidelines are met.
   3. If the test is acceptable, the individual completing the test must document the results of the grounding test and turnover to Owner's Representative. Documentation should include the date, name or initials or the individuals completing and witnessing the test, and the ohms resistance to ground.

L. Testing Review:
   1. Failure of initial testing review will require additional review. Payment of costs, including travel expenses and site visits by Owner's Representative, for additional reviews that may be required due to non-compliance with the Construction Documents will be Contractor's responsibility.

3.12 CONSTRUCTION REVIEW:

The purpose of on-site reviews by Owner's Representative is to periodically observe the work in progress, the Contractor's interpretation of the construction documents, and to address questions regarding construction and system installation.

A. Schedule reviews for irrigation system layout or testing with Owner's Representative as required by these specifications.

B. Impromptu reviews may occur at any time during project.

C. A review will occur at completion of irrigation system installation and Project Record Drawing submittal.

D. Contractor shall be responsible for notifying the Owner's Representative in advance for the following observations according to the time indicated:
   1. Pre-construction conference: 7 days
   2. Main line layout, remote control valve locations: 72 hours
   3. Mainline pressure and leakage testing: 72 hours

4. Automatic controller installation and connections: 72 hours
5. Control wire continuity and grounding testing: 72 hours
6. Sprinkler layout review: 72 hours
7. Booster pump start-up and training: 7 days
8. Substantial Completion Operational Review: 72 hours
9. Final observation/Punchlist Review: 7 days

3.13 MAINTENANCE

A. The entire irrigation system shall be under full automatic operation for a period of seven days prior to any planting.

B. The Owner's Representative reserves the right to waive or shorten the operation period.

C. Contractor shall provide job maintenance of the entire irrigation system and shall continue until job acceptance by the Owner. Maintain all system components and assure proper watering of all plants. Repair any leaks and replace any defective components. After all landscape and irrigation operations are complete and in conformance with the contract documents, the Owner shall grant provisional acceptance.

D. Following provisional acceptance, the Contractor shall provide job maintenance for 90 days consisting of all items covered under maintenance alone. Following the 90-day maintenance period, the Owner shall grant final job acceptance after verifying all work and system components are in conformance with the contact documents.

3.14 CLEANUP

Cleanup shall be made as each portion of work progresses. Refuse and excess dirt shall be removed from the site, all walks and paving shall be broomed or washed down, and any damage sustained on the work of others shall be repaired to the original conditions acceptable to the Owner's Representative.

Measurement & Payment:
Measurement and payment for Automatic Irrigation System Installation will be measured as a single complete unit of work and paid for at the contract lump sum price, which will be full compensation for the work, complete in place. No additional payment will be made for site preparations, testing, warranty of work, assemblies and incidentals required to install a fully functioning irrigation system, the cost being considered included in the item.

ITEM NO. 45 ALLOWANCE: OWNER

Description:
The purpose of the allowance is to create a funding source for any additional work as approved by City Representatives. The Contractor will be reimbursed for the associated costs. Contract reimbursement from this allowance (in whole or in part) is not ensured.

Contractor will not anticipate, nor plan, for the amount from this allowance to be included in the total contract amount as part of this project.

Construction Requirements:
Additional work will be completed as approved and directed by City Representatives.

Measurement and Payment:
Payment for Allowance: Payment will be made on an incremental basis from allowance in accordance with the requirements of City of Chandler General Conditions Section 9. No payment in excess of 100% of the contract lump sum price will be made, unless authorized by City Representatives as a result of extra work authorized in accordance with City of Chandler General Conditions Section 9.

EXHIBIT E

CHANDLER arizona
Community of Innovation

VETERAN'S MEMORIAL PHASE II
Project No. PR2004.401

SUBCONTRACTOR'S LIST FORM

If CM@Risk intends to subcontract any portion of this contract, the CM@Risk must submit the name, address, and contractor's license number (if applicable) of each subcontractor, including the work component of such subcontracting. Include the form with the bid submittal documents. CM@Risk may make multiple copies of this form as needed.

Company Name:	
Contact Name:	
Contact Email:	
Contact Phone:	
Work Component:	
Percentage of Total Work Performed:	

Company Name:	
Contact Name:	
Contact Email:	
Contact Phone:	
Work Component:	
Percentage of Total Work Performed:	

Company Name:	
Contact Name:	
Contact Email:	
Contact Phone:	
Work Component:	
Percentage of Total Work Performed:	

Company Name:	
Contact Name:	
Contact Email:	
Contact Phone:	
Work Component:	
Percentage of Total Work Performed:	

Company Name:	
Contact Name:	
Contact Email:	
Contact Phone:	
Work Component:	
Percentage of Total Work Performed:	

Company Name:	
Contact Name:	
Contact Email:	
Contact Phone:	
Work Component:	
Percentage of Total Work Performed:	

CHANDLER arizona
Community of Innovation

City Council Memorandum **Community Services** **Memo No.** CP21-119

Date: April 19, 2021

To: Mayor and Council

Thru: Joshua H. Wright, Acting City Manager
Debra Stapleton, Assistant City Manager
Andy Bass, Community Services Director
Andrew Goh, Capital Projects Manager

From: Alisa Doll, Engineer

Subject: Professional Services Agreement No. PR2004.451 with Dibble CM, LLC (DE LLC), for Veterans Memorial Phase II

Proposed Motion:

Move City Council award Professional Services Agreement No. PR2004.451, to Dibble CM, LLC (DE LLC), for Veterans Memorial Phase II, in an amount not to exceed $122,400.00.

Background/Discussion:

When Veterans Oasis Park was designed and constructed, a section of the park immediately adjacent to the northeast corner of the Lindsay Road and Chandler Heights Road intersection was designated as the future location of a Veterans Memorial. Shortly after completion of the park in 2008, City staff met with several local veterans groups and developed a conceptual plan for the memorial. The goal of the memorial is to provide a space for remembrance and reflection. The memorial integrates the veterans groups' ideas into the design, which represents six core values significant to the veterans and their families: freedom, reflection, recognition, sacrifice, family, and memories.

In 2016, the first phase of the memorial was completed. Phase I included an elevated plaza replicating the Arizona State flag, parking, and landscaping. Phase II of the memorial is designed to match the exact ratio of the American flag. At its core is a grid of columns of various heights which define the flag's stars and stripes, while the rolling landform emulates the ripples of it blowing in the wind. The columns are meant to signify soldiers marching in unison. Within the rising and falling landscape, the columns slowly disappear and reappear, representing soldiers going off to war and then returning. Twenty-one of the columns are completely submerged within the earth as a tribute, symbolizing a twenty-one gun salute for those who did not return from battle.

In addition, the memorial site will include the integration of the F-86 plane that is currently on static display at the southeast corner of Chandler Boulevard and Delaware Street.

The project scope of work includes pre-construction assistance, contractor oversight, construction administration, construction inspection, utility coordination, schedule review, review of progress payments, response to shop drawings and submittals for design compliance, materials testing quality assurance, and project close-out. Services also include public outreach. The contract completion time is 200 calendar days following Notice to Proceed; the project is planned to be dedicated on Veterans

Day 2021.

A related construction manager at risk (CMAR) contract with Hunter Contracting Co. also appears on this City Council agenda.

Evaluation:

The City's selection process was conducted in accordance with City policy and procedure and State law. This project is being performed under the On-Call Consultant Pre-Qualified List for Construction Management Services. Staff recommends approval of this agreement with Dibble CM, LLC (DE LLC), based on qualifications, relevant firm experience, team experience, project understanding, and project approach.

Fiscal Impact

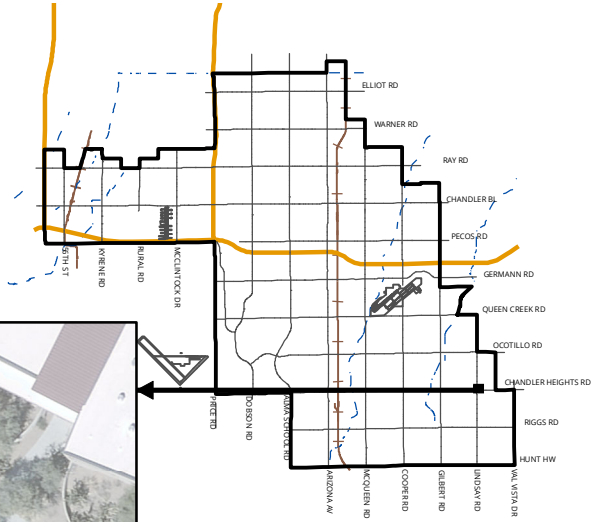
Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
401.4580.6210.0.6PR633	General Government Capital Project	Veteran's Memorial	$122,400	Y

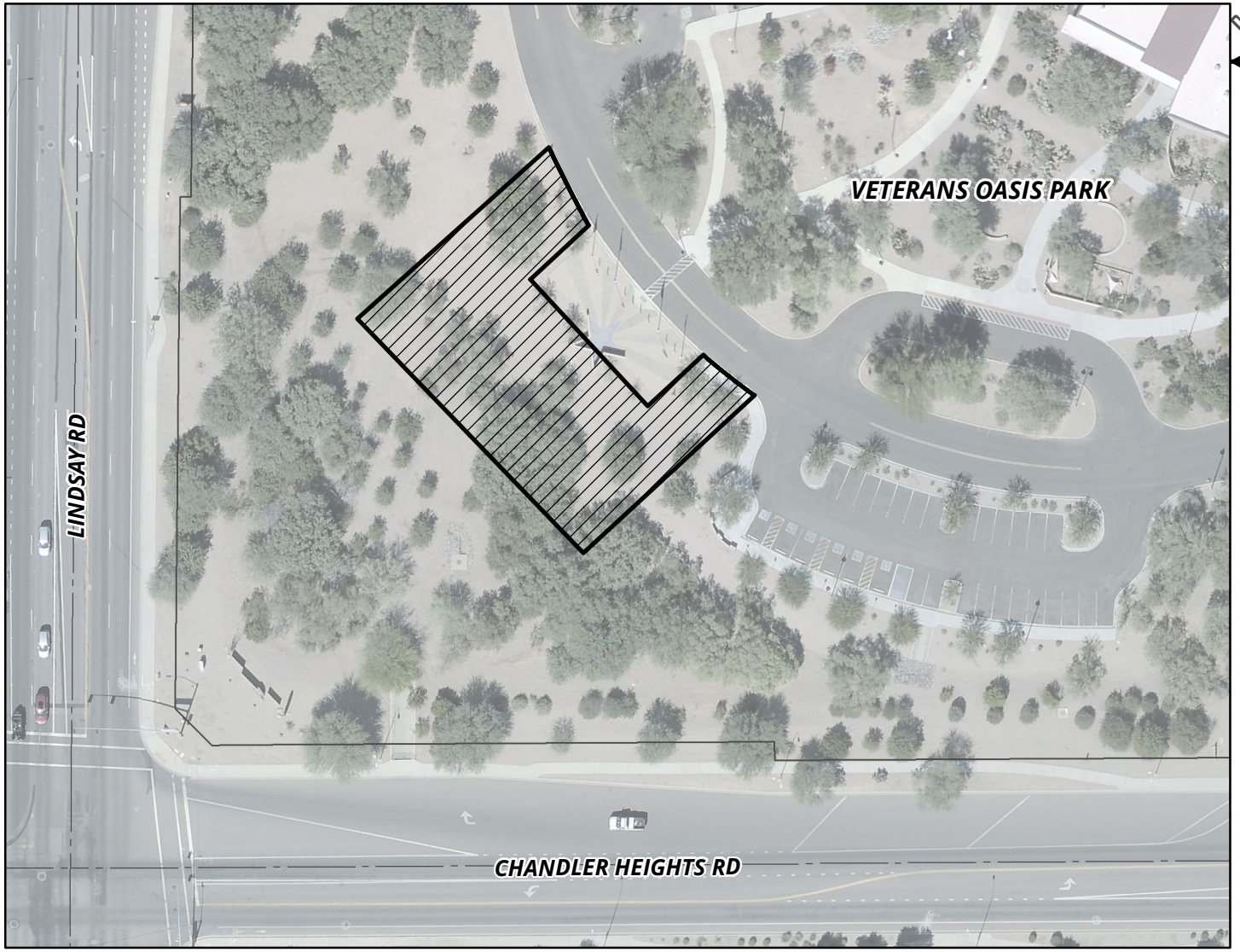
Attachments

Vicinity Map

Agreement - Dibble

VETERAN'S MEMORIAL PHASE II
PROFESSIONAL SERVICES
CONTRACT NO. PR2004.451





MEMO NO. CP21-119

PHASE II

NTS

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CHANDLER arizona
Community of Innovation

PROFESSIONAL SERVICES AGREEMENT
Construction Management Services
VETERAN'S MEMORIAL PHASE II

Project No. PR2004.451

Council Date: April 22, 2021 Item No.

THIS AGREEMENT ("Agreement") is made and entered into on the _____ day of_____, 2021 ("Effective Date"), by and between City of Chandler, an Arizona municipal corporation, ("City"), and **Dibble CM, LLC**, a Delaware limited liability company, ("Consultant") (City and Consultant may individually be referred to as "Party" and collectively referred to as "Parties").

RECITALS

A. City proposes to engage Consultant to provide Construction Management Services for **VETERAN'S MEMORIAL PHASE II** project as more fully described in **Exhibit "A"**, which is attached to and made a part of this Agreement by this reference.

B. Consultant is ready, willing, and able to provide the services described in **Exhibit "A"** for the compensation and fees set forth and as described in **Exhibit "B"**, which is attached to and made a part of this Agreement by this reference.

C. City desires to contract with Consultant to provide these services under the terms and conditions set forth in this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the premises and the mutual promises contained in this Agreement, City and Consultant agree as follows:

SECTION I--CONSULTANT'S SERVICES

Consultant must perform the services described in **Exhibit "A"** to City's satisfaction within the terms and conditions of this Agreement and within the care and skill that a person who provides similar services in Chandler, Arizona exercises under similar conditions. All work or services furnished by Consultant under this Agreement must be performed in a skilled and workmanlike manner. All fixtures, furnishings, and equipment furnished by Consultant as part of the work or services under this Agreement must be new, or the latest model, and of the most suitable grade and quality for the intended purpose of the work or service.

SECTION II--PERIOD OF SERVICE

Consultant must perform the services described in **Exhibit "A"** for the term of this Agreement. Unless amended in writing by the Parties, the Agreement term expires **200** calendar days after the Notice to Proceed (NTP) Date.

SECTION III--PAYMENT OF COMPENSATION AND FEES

Unless amended in writing by the Parties, Consultant's compensation and fees as more fully described in **Exhibit "B"** for performance of the services approved and accepted by City under this Agreement must not exceed **$122,400** for the full term of the Agreement. Consultant may not increase any compensation or fees under this Agreement without the City's prior written consent. Consultant must submit monthly requests for payment of services approved and accepted during the previous billing period and must include, as applicable, detailed invoices and receipts, a narrative description of the tasks accomplished during the billing period, a list of any deliverables submitted, and any subconsultant's or supplier's actual requests for payment plus similar narrative and listing of their work. Consultant must submit an Application and Certification for Payment Sheet with the monthly request for payment to: CapitalProjects.Payables@chandleraz.gov. Payment for those services negotiated as a lump sum will be made in accordance with the percentage of the work completed during the preceding billing period. Services negotiated as a not-to-exceed fee will be paid in accordance with the work effort expended on the service during the preceding month. All requests for payment must be submitted to City for review and approval. City will make payment for approved and accepted services within 30 calendar days of City's receipt of the request for payment. Consultant bears all responsibility and liability for any and all tax obligations that result from Consultant's performance under this Agreement.

SECTION IV--CITY'S OBLIGATIONS

As part of Consultant's services under this Agreement, City will provide furnished items, services, or obligations as detailed in **Exhibit "D"**.

SECTION V--GENERAL CONDITIONS

5.1 Notices. Unless otherwise provided herein, demands under this Agreement must be in writing and will be deemed to have been duly given and received either (a) on the date of service if personally served on the party to whom notice is to be given, or (b) on the third day after the date of the postmark of deposit by first class United States mail, registered or certified, postage prepaid and properly addressed as follows:

To City:	City of Chandler Public Works & Utilities Department Attn: CIP City Engineer P.O. Box 4008, Mail Stop 407 Chandler, AZ 85244-4008

With a Copy to:	Project Manager City of Chandler Public Works & Utilities Department P.O. Box 4008, Mail Stop 407 Chandler, AZ 85244-4008
To Consultant:	Mr. KC Brandon Dibble CM, LLC 7878 N. 16th St., Ste. 300 Phoenix, AZ 85020

5.2 Records/Audit. Records of Consultant's direct personnel payroll, reimbursable expenses pertaining to this Agreement and records of accounts between City and Consultant must be kept on the basis of generally accepted accounting principles and must be made available to City and its auditors for up to three years following City's final acceptance of the services under this Agreement (this requirement is increased to five years if construction of this project is federally funded). City, its authorized representative, or any federal agency, reserves the right to audit Consultant's records to verify the accuracy and appropriateness of all cost and pricing data, including data used to negotiate this Agreement and any amendments. City reserves the right to decrease the total amount of Agreement price or payments made under this Agreement or request reimbursement from Consultant following final contract payment on this Agreement if, upon audit of Consultant's records, the audit discloses Consultant has provided false, misleading, or inaccurate cost and pricing data. Consultant will include a similar provision in all of its contracts with subconsultants who provide services under the Agreement to ensure that City, its authorized representative, or the appropriate federal agency, has access to the subconsultants' records to verify the accuracy of all cost and pricing data. City reserves the right to decrease Contract price or payments made on this Agreement or request reimbursement from Consultant following final payment on this Agreement if the above provision is not included in subconsultant agreements, and one or more subconsultants refuse to allow City to audit their records to verify the accuracy and appropriateness of all cost and pricing data. If, following an audit of this Agreement, the audit discloses Consultant has provided false, misleading, or inaccurate cost and pricing data, and the cost discrepancies exceed 1% of the total Agreement billings, Consultant will be liable for reimbursement of the reasonable, actual cost of the audit.

5.3 Alteration in Character of Work. Whenever an alteration in the character of work results in a substantial change in this Agreement, thereby materially increasing or decreasing the scope of services, cost of performance, or Project schedule, the work will be performed as directed by City. However, before any modified work is started, a written amendment must be approved and executed by City and Consultant. Such amendment must not be effective until approved by City. Additions to, modifications, or deletions from this Agreement as provided herein may be made, and the compensation to be paid to Consultant may accordingly be adjusted by mutual agreement of the Parties. It is distinctly understood and agreed that no claim for extra services or materials furnished by Consultant will be allowed by City except as provided herein, nor must Consultant do any work or furnish any materials not covered by this Agreement unless such work is first authorized in writing. Any

such work or materials furnished by Consultant without prior written authorization will be at Consultant's own risk, cost, and expense, and Consultant hereby agrees that without written authorization Consultant will make no claim for compensation for such work or materials furnished.

5.4 Termination. City and Consultant hereby agree to the full performance of the covenants contained herein, except that City reserves the right, at its discretion and without cause, to terminate or abandon any service provided for in this Agreement, or abandon any portion of the Project for which services have been performed by Consultant. In the event City abandons or suspends the services, or any part of the services as provided in this Agreement, City will notify Consultant in writing and immediately after receiving such notice, Consultant must discontinue advancing the work specified under this Agreement. Upon such termination, abandonment, or suspension, Consultant must deliver to City all drawings, plans, specifications, special provisions, estimates and other work entirely or partially completed, together with all unused materials supplied by City. Consultant must appraise the work Consultant has completed and submit Consultant's appraisal to City for evaluation. City may inspect Consultant's work to appraise the work completed. Consultant will receive compensation in full for services performed to the date of such termination. The fee will be paid in accordance with Section III of this Agreement, and as mutually agreed upon by Consultant and City. If there is no mutual agreement on payment, the final determination will be made in accordance with the "Disputes" provision in this Agreement. However, in no event may the fee exceed the fee set forth in Section III of this Agreement nor as amended in accordance with Section "Alteration in Character of Work." City will make the final payment within 60 days after Consultant has delivered the last of the partially completed items and the Parties agree on the final fee. If City is found to have improperly terminated the Agreement for cause or default, the termination will be converted to a termination for convenience in accordance with the provisions of this Agreement.

5.5 Indemnification. To the extent permitted by law, the Consultant ("Indemnitor") must indemnify, save and hold harmless City and its officers, officials, agents and employees ("Indemnitee") from any and all claims, actions, liabilities, damages, losses or expenses (including court costs, attorneys' fees and costs of claim processing, investigation and litigation) ("Claims") caused or alleged to be caused, in whole or in part, by the wrongful, negligent or willful acts, or errors or omissions of Consultant or any of its owners, officers, directors, agents, employees, or subconsultants in connection with this Agreement. This indemnity includes any claim or amount arising out of or recovered under workers' compensation law or on account of the failure of Consultant to conform to any federal, state or local law, statute, ordinance, rule, regulation or court decree. Consultant must indemnify Indemnitee from and against any and all Claims, except those arising solely from Indemnitee's own negligent or willful acts or omissions. Consultant is responsible for primary loss investigation, defense and judgment costs where this indemnification applies. In consideration of the award of this Agreement, Consultant agrees to waive all rights of subrogation against Indemnitee for losses arising from or related to this Agreement. The obligations of Consultant under this provision survive the termination or expiration of this Agreement.

5.6 Insurance Requirements. Consultant must procure insurance under the terms and

conditions and for the amounts of coverage set forth in **Exhibit "C"** against claims that may arise from or relate to performance of the work under this Agreement by Consultant and its agents, representatives, employees, and subconsultants. Consultant and any subconsultant must maintain this insurance until all of their obligations have been discharged, including any warranty periods under this Agreement. These insurance requirements are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement. City in no way warrants that the minimum limits stated in **Exhibit "C"** are sufficient to protect Consultant from liabilities that might arise out of the performance of the work under this Agreement by Consultant, Consultant's agents, representatives, employees, or subconsultants. Consultant is free to purchase such additional insurance as may be determined necessary.

5.7 Cooperation and Further Documentation. Consultant agrees to provide City such other duly executed documents as may be reasonably requested by City to implement the intent of this Agreement.

5.8 Successors and Assigns. City and Consultant each bind itself, its partners, successors, assigns, and legal representatives to the other party to this Agreement and to the partners, successors, assigns, and legal representatives of such other party in respect to all covenants of this Agreement. Neither City nor Consultant may assign, sublet, or transfer its interest in this Agreement without the written consent of the other party. In no event may any contractual relation be created between any third party and City.

5.9 Disputes. In any dispute arising out of an interpretation of this Agreement or the duties required not disposed of by agreement between Consultant and City, the final determination at the administrative level will be made by City Engineer.

5.10 Completeness and Accuracy of Consultant's Work. Consultant must be responsible for the completeness and accuracy of Consultant's services, data, and other work prepared or compiled under Consultant's obligation under this Agreement and must correct, at Consultant's expense, all willful or negligent errors, omissions, or acts that may be discovered. Correction of errors disclosed and determined to exist during any construction of the project on architectural or engineering drawings and specifications must be accomplished by Consultant. The cost of the design necessary to correct those errors attributable to Consultant and any damage incurred by City as a result of additional construction costs caused by such engineering or architectural errors will be chargeable to Consultant and will not be considered a cost of the Work. The fact that City has accepted or approved Consultant's work will in no way relieve Consultant of any of Consultant's responsibilities.

5.11 Reporting. Written monthly reports, along with updated work schedules, will be made by Consultant in the format prescribed by City. These reports will be delivered to City per schedule. When requested by City, Consultant will attend Council meetings and provide finished documents including correspondence for Council action, supporting charts, graphs, drawings and colored slides of same.

5.12 Withholding Payment. City reserves the right to withhold funds from Consultant's payments up to the amount equal to the claims City may have against Consultant until such

time that a settlement on those claims has been reached.

5.13 City's Right of Cancellation. The Parties acknowledge that this Agreement is subject to cancellation by City under the provisions of Section 38-511, Arizona Revised Statutes (A.R.S.).

5.14 Independent Consultant. For this Agreement Consultant constitutes an independent contractor. Any provisions in this Agreement that may appear to give City the right to direct Consultant as to the details of accomplishing the work or to exercise a measure of control over the work means that Consultant must follow the wishes of City as to the results of the work only. These results must comply with all applicable laws and ordinances.

5.15 Project Staffing. Prior to the start of any work under this Agreement, Consultant must submit to City detailed resumes of key personnel that will be involved in performing services prescribed in the Agreement. City hereby acknowledges its acceptance of such personnel to perform services under this Agreement. At any time hereafter that Consultant desires to change key personnel while performing under the Agreement, Consultant must submit the qualifications of the new personnel to City for prior approval. Key personnel include, but are not limited to, principals-in-charge, project manager, and project Consultant. Consultant will maintain an adequate and competent staff of qualified persons, as may be determined by City, throughout the performance of this Agreement to ensure acceptable and timely completion of the Scope of Services. If City objects, with reasonable cause, to any of Consultant's staff, Consultant must take prompt corrective action acceptable to City and, if required, remove such personnel from the Project and replace with new personnel agreed to by City.

5.16 Consultants or Subconsultants. Prior to beginning the work, Consultant must furnish City for approval the names of consultants or subconsultants to be used under this Agreement. Any subsequent changes are subject to City's written prior approval.

5.17 Force Majeure. If either party is delayed or prevented from the performance of any act required under this Agreement by reason of acts of God or other cause beyond the control and without fault of the Party (financial inability excepted), performance of that act may be excused, but only for the period of the delay, if the Party provides written notice to the other Party within ten days of such act. The time for performance of the act may be extended for a period equivalent to the period of delay from the date written notice is received by the other Party.

5.18 Compliance with Federal Laws. Consultant understands and acknowledges the applicability of the Americans with Disabilities Act, the Immigration Reform and Control Act of 1986 and the Drug Free Workplace Act of 1989 to it. Consultant agrees to comply with these laws in performing this Agreement and to permit City to verify such compliance.

5.19 No Israel Boycott. By entering into this Agreement, Consultant certifies that Consultant is not currently engaged in, and agrees for the duration of the Agreement, not to engage in a boycott of Israel as defined by state statute.

5.20 Legal Worker Requirements. A.R.S. § 41-4401 prohibits City from awarding a contract to

any consultant who fails, or whose subconsultants fail, to comply with A.R.S. § 23-214(A). Therefore, Consultant agrees Consultant and each subconsultant it uses warrants their compliance with all federal immigration laws and regulations that relate to their employees and their compliance with § 23-214, subsection A. A breach of this warranty will be deemed a material breach of the Agreement and may be subject to penalties up to and including termination of the Agreement. City retains the legal right to inspect the papers of any Consultant's or subconsultant's employee who provides services under this Agreement to ensure that Consultant and subconsultants comply with the warranty under this provision.

5.21 Lawful Presence Requirement. A.R.S. §§ 1-501 and 1-502 prohibit City from awarding a contract to any natural person who cannot establish that such person is lawfully present in the United States. To establish lawful presence, a person must produce qualifying identification and sign a City-provided affidavit affirming that the identification provided is genuine. This requirement will be imposed at the time of contract award. This requirement does not apply to business organizations such as corporations, partnerships, or limited liability companies.

5.22 Covenant Against Contingent Fees. Consultant warrants that no person has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, and that no member of the Chandler City Council, or any City employee has any interest, financially, or otherwise, in Consultant's firm. For breach or violation of this warrant, City may annul this Agreement without liability or, at its discretion, to deduct from the Agreement price or consideration, the full amount of such commission, percentage, brokerage, or contingent fee.

5.23 Non-Waiver Provision. The failure of either Party to enforce any of the provisions of this Agreement or to require performance of the other Party of any of the provisions hereof must not be construed to be a waiver of such provisions, nor must it affect the validity of this Agreement or any part thereof, or the right of either Party to thereafter enforce each and every provision.

5.24 Disclosure of Information Adverse to City's Interests. To evaluate and avoid potential conflicts of interest, Consultant must provide written notice to City, as set forth in this Section, of any work or services performed by Consultant for third parties that may involve or be associated with any real property or personal property owned or leased by City. Such notice must be given 7 business days prior to commencement of the services by Consultant for a third party, or 7 business days prior to an adverse action as defined below. Written notice and disclosure must be sent in accordance with Section 6.7 above. An adverse action under this Agreement includes, but is not limited to: (a) using data as defined in the Agreement acquired in connection with this Agreement to assist a third party in pursuing administrative or judicial action against City; or (b) testifying or providing evidence on behalf of any person in connection with an administrative or judicial action against City; or (c) using data to produce income for Consultant or its employees independently of performing the services under this Agreement, without the prior written consent of City. Consultant represents that except for those persons, entities, and projects identified to City, the services performed by Consultant under this Agreement are not expected to create an

interest with any person, entity, or third party project that is or may be adverse to City's interests. Consultant's failure to provide a written notice and disclosure of the information as set forth in this Section constitute a material breach of this Agreement.

5.25 Data Confidentiality and Data Security. As used in the Agreement, "data" means all information, whether written or verbal, including plans, photographs, studies, investigations, audits, analyses, samples, reports, calculations, internal memos, meeting minutes, data field notes, work product, proposals, correspondence and any other similar documents or information prepared by, obtained by, or transmitted to Consultant or its subconsultants in the performance of this Agreement. The Parties agree that all data, regardless of form, including originals, images, and reproductions, prepared by, obtained by, or transmitted to Consultant or its subconsultants in connection with Consultant's or its subconsultant's performance of this Agreement is confidential and proprietary information belonging to City. Except as specifically provided in this Agreement, Consultant or its subconsultants must not divulge data to any third party without City's prior written consent. Consultant or its subconsultants must not use the data for any purposes except to perform the services required under this Agreement. These prohibitions do not apply to the following data provided to Consultant or its subconsultants have first given the required notice to City: (a) data which was known to Consultant or its subconsultants prior to its performance under this Consultant or its subconsultants by a third party, who to the best of Consultant's or its subconsultants' knowledge and belief, had the legal right to make such disclosure and Consultant or its subconsultants are not otherwise required to hold such data in confidence; or (c) data which is required to be disclosed by virtue of law, regulation, or court order, to which Consultant or its subconsultants are subject. In the event Consultant or its subconsultants are required or requested to disclose data to a third party, or any other information to which Consultant or its subconsultants became privy as a result of any other contract with City, Consultant must first notify City as set forth in this Section of the request or demand for the data. Consultant or its subconsultants must give City sufficient facts so that City can be given an opportunity to first give its consent or take such action that City may deem appropriate to protect such data or other information from disclosure. All data must continue to be subject to the confidentiality agreements of this Agreement. Consultant or its subconsultants assume all liability to maintain the confidentiality of the data in its possession and agrees to compensate City if any of the provisions of this Section are violated by Consultant, its employees, agents or subconsultants. Solely for the purposes of seeking injunctive relief, it is agreed that a breach of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. Consultant agrees that the requirements of this Section must be incorporated into all subagreements entered into by Consultant. A violation of this Section may result in immediate termination of this Agreement without notice.

5.26 Personal Identifying Information-Data Security. Personal identifying information, financial account information, or restricted City information, whether electronic format or hard copy, must be secured and protected at all times by Consultant or its subconsultants. At a minimum, Consultant or its subconsultants must encrypt or password-protect electronic files. This includes data saved to laptop computers, computerized devices, or removable storage devices. When personal identifying information, financial account information, or restricted City information, regardless of its format, is no longer necessary,

the information must be redacted or destroyed through appropriate and secure methods that ensure the information cannot be viewed, accessed, or reconstructed. In the event that data collected or obtained by Consultant or its subconsultants in connection with this Agreement is believed to have been compromised, Consultant or its subconsultants must immediately notify City contact. Consultant agrees to reimburse City for any costs incurred by City to investigate potential breaches of this data and, where applicable, the cost of notifying individuals who may be impacted by the breach. Consultant agrees that the requirements of this Section must be incorporated into all subcontracts entered into by Consultant. It is further agreed that a violation of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. A violation of this Section may result in immediate termination of this Agreement without notice. The obligations of Consultant or its subconsultants under this Section must survive the termination of this Agreement.

5.27 Jurisdiction and Venue. This Agreement is made under, and must be construed in accordance with and governed by the laws of the State of Arizona without regard to the conflicts or choice of law provisions thereof. Any action to enforce any provision of this Agreement or to obtain any remedy with respect hereto must be brought in the courts located in Maricopa County, Arizona, and for this purpose, each Party hereby expressly and irrevocably consents to the jurisdiction and venue of such court.

5.28 Survival. All warranties, representations, and indemnifications by Consultant must survive the completion or termination of this Agreement.

5.29 Modification. Except as expressly provided herein to the contrary, no supplement, modification, or amendment of any term of this Agreement will be deemed binding or effective unless in writing and signed by the Parties.

5.30 Severability. If any provision of this Agreement or the application to any person or circumstance may be invalid, illegal or unenforceable to any extent, the remainder of this Agreement and the application will not be affected and will be enforceable to the fullest extent permitted by law.

5.31 Integration. This Agreement contains the full agreement of the Parties. Any prior or contemporaneous written or oral agreement between the Parties regarding the subject matter is merged and superseded.

5.32 Time is of the Essence. Time of each of the terms, covenants, and conditions of this Agreement is hereby expressly made of the essence.

5.33 Date of Performance. If the date of performance of any obligation or the last day of any time period provided for should fall on a Saturday, Sunday, or holiday for City, the obligation will be due and owing, and the time period will expire, on the first day after which is not a Saturday, Sunday or legal City holiday. Except as may otherwise be set forth in this Agreement, any performance provided for herein will be timely made if completed no later than 5:00 p.m. (Chandler time) on the day of performance.

5.34 Third Party Beneficiary. Nothing under this Agreement will be construed to give any

rights or benefits in the Agreement to anyone other than City and Consultant, and all duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of City and Consultant and not for the benefit of any other party.

5.35 Conflict in Language. All work performed must conform to all applicable City of Chandler codes, ordinances, and requirements as outlined in this Agreement. If there is a conflict in interpretation between provisions in this Agreement and those in **Exhibit "A"**, the provisions in this Agreement prevail.

5.36 Document/Information Release. Documents and materials released to Consultant, which are identified by City as sensitive and confidential, are City's property. The document/material must be issued by and returned to City upon completion of the services under this Agreement. Consultant secondary distribution, disclosure, copying, or duplication in any manner is prohibited without City's prior written approval. The document/material must be kept secure at all times. This directive applies to all City documents, whether in photographic, printed, or electronic data format.

5.37 Exhibits. The following exhibits are made a part of this Agreement and are incorporated by reference:

Exhibit A - Scope of Services / Schedule
Exhibit B - Compensation and Fees
Exhibit C - Insurance Requirements
Exhibit D - Special Conditions
Exhibit E – Federal Requirements (if applicable)

5.38 Special Conditions. As part of the services Consultant provides under this Agreement, Consultant agrees to comply with and fully perform the special terms and conditions set forth in **Exhibit "D"**, which is attached to and made a part of this Agreement.

5.39 Non-Discrimination and Anti-Harassment Laws. Consultant must comply with all applicable City, state, and federal non-discrimination and anti-harassment laws, rules, and regulations.

5.40 Licenses and Permits. Beginning with the Effective Date and for the full term of this Agreement, Consultant must maintain all applicable City, state, and federal licenses and permits required to fully perform Consultant's services under this Agreement.

5.41 Warranties. Consultant must furnish a one-year warranty on all work and services performed under this Agreement. Consultant must furnish, or cause to be furnished, a two-year warranty on all fixtures, furnishings, and equipment furnished by Consultant, subconsultants or suppliers under this Agreement. Any defects in design, workmanship, or materials that do not comply with this Agreement must be corrected by Consultant (including, but not limited to, all parts and labor) at Consultant's sole cost and expense. All written warranties and redlines for as-built conditions must be delivered to City on or before City's final acceptance of Consultant's services under this Agreement.

5.42 Cooperative Purchasing Agreement (S.A.V.E. – Strategic Alliance for Volume Expenditures). In addition to City of Chandler and with the approval of Consultant, this Agreement may be extended for use by other municipalities, school districts, and government agencies of the State. Any such usage by other entities must be in accordance with the ordinance, charter, or procurement rules and regulations of the respective political entity.

5.43 Budget Approval into Next Fiscal Year. This Agreement will commence on the Effective Date and continue in full force and effect until it is terminated or expires in accordance with the provisions of this Agreement. The Parties recognize that the continuation of this Agreement after the close of the City's fiscal year, which ends on June 30 of each year, is subject to the City Council's approval of a budget that includes an appropriation for this item as an expenditure. The City does not represent that this budget item will be actually adopted. This determination is solely made by the City Council.

SIGNATURE PAGE TO FOLLOW

This Agreement will be in full force and effect only when it has been approved and executed by the duly authorized City officials.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the Effective Date.

"CITY"
CITY OF CHANDLER

_____
MAYOR

Recommended By:

_____
Andrew Goh, P.E.
CIP City Engineer

APPROVED AS TO FORM:

_____
City Attorney

ATTEST:

_____
City Clerk Seal

"CONSULTANT"
Dibble CM, LLC

4.1.2021
Signature Date

KC Brandon
Print Name

President
Title

kcbrandon@dibblecm.com
Signer Email Address

EXHIBIT "A"
SCOPE OF SERVICES/SCHEDULE

DIBBLECM

EXHIBIT "A"

CONSTRUCTION MANAGEMENT
SCOPE OF SERVICES

PROJECT TASKS

1. PRE-CONSTRUCTION ASSISTANCE

A. Task 1.1 Preconstruction Assistance

i. Consultant must attend the pre-construction meeting.

ii. Consultant must attend the pre-construction public meeting.

iii. Consultant must attend coordination meeting with the Public Outreach Consultant to review improvements and properties requiring specific outreach efforts.

2. CONSTRUCTION MANAGEMENT

A. Task 2.1 Weekly Construction Meetings

i. Consultant must conduct weekly construction meetings. Each meeting includes agenda and minutes; Request for Information (RFI); Shop Drawing; Request for Information (RFI); Field Directive (FD); Material Certification; and Allowance Logs. Consultant assumes 28 weekly meetings will be held.

B. Task 2.2 CPM Schedule

i. Consultant must review and evaluate Contractor's initial CPM schedule and provide recommendations for acceptance.

ii. Consultant must review Contractor's monthly CPM schedule updates submitted with each payment application, identify CPM tasks behind schedule that may affect critical path items, project substantial and final completion dates, and initiate correspondence to City regarding those tasks. Consultant assumes 7 reviews of updated CPM schedule.

C. Task 2.3 Requests for Information (RFI's)

i. Consultant must review, evaluate, and respond to Contractor Requests for Information (RFI's); and prepare and maintain a submittal log of all RFI's. Consultant assumes a maximum of 25 RFI responses.

D. Task 2.4 Shop Drawing Submittals

i. Consultant must review, evaluate, and respond to Contractor shop drawing submittals; and prepare and maintain a submittal log of all shop drawing submittals. Consultant assumes a maximum of 30 reviews.

E. Task 2.5 Requests for Proposal (RFP)

i. Consultant must prepare Requests for Proposal (RFP) documents detailing requested additional work tasks; review and evaluate Contractor RFP responses (cost derivations) with approval recommendations; and prepare and maintain a submittal log list of all RFP's. Consultant assumes 15 RFPs.

F. Task 2.6 Field Directives (FD's)

i. Consultant must prepare Field Directive (FD) documents detailing requested additional work tasks; review and evaluate Contractor FD responses with approval

recommendations; and prepare and maintain a submittal log list of all FD's. Consultant assumes 15 FD's.

G. Task 2.7 Contractor Payment Applications

i. Consultant must review and evaluate Contractor monthly payment applications and make recommendation for payment; maintain a weekly record of constructed pay quantities and compile monthly totals; and coordinate payment application with the City quantity report and the inspectors' daily logs. Consultant assumes a maximum of 8 payment applications, with 2 reviews each.

H. Task 2.8 Public Outreach =N/A

i. Consultant must provide public outreach services, whether by Consultant or subconsultant. Tasks will include: create and maintain project website; maintain a 24-hour bilingual project hotline to respond to inquiries, complaints and maintain a call log; public weekly email updates; public interactions with property owners as a liaison between property owners and the City; coordination meetings; project meetings; public meeting coordination; federal funds required partnering process (project team partnering meeting, maintaining status).

3. CONSTRUCTION INSPECTION

A. Task 3.1 Inspection Services

i. Consultant must provide weekly construction inspection to verify materials and installations conform to construction documents; prepare daily inspection reports documenting Contractor construction activities and progress during field inspection visits; and perform intermittent erosion control inspections. Consultant assumes 1 inspector part time 15 hrs. per week for 7 months.

B. Task 3.2 Landscape / Irrigation Inspection Services = N/A

i. Consultant must provide Irrigation system layout and installation observations; attend and observe irrigation system pressure tests; and attend a nursery visit to tag and inspect plant material. Consultant assumes site visits.

C. Task 3.3 Project Closeout

i. Consultant must compile non-conformance list prior to Substantial Completion; schedule and conduct Substantial Completion inspection; prepare Substantial Completion punch list generated from Substantial Completion inspection; track items on punch list and note completed items; and complete and distribute Substantial Completion certificates.

ii. Consultant must schedule and conduct Final Completion inspection; and complete and distribute Final Completion certificates.

4. UTILITY COORDINATION

A. Task 4.1 Utility Coordination =N/A

i. Consultant must complete Acceptance of Construction (AOC) applications and submit to MCESD for reclaimed water booster pump and potable water/sewer improvements.

5. MATERIALS TESTING =N/A

A. Task 5.1 Quality Control (QC) Test Program

i. Consultant must review and verify Contractor's Quality Control material test type and frequencies are consistent with City and MAG; review and evaluate Contractor's QC test schedule and provide recommendations on acceptance; and review and evaluate all Contractor sampling, test, and inspection results for conformance with construction documents.

B. Task 5.2 Quality Assurance (QA) Test Program

i. Consultant must prepare and maintain a materials Quality Assurance plan per City and MAG.

ii. Consultant must coordinate with Contractor's testing representative to obtain required QA tests and sample; complete sampling and compaction testing of subgrade (including lime-stabilized subgrade base), aggregate base and asphalt concrete materials in new asphalt concrete pavement areas; complete sampling and compaction testing of subgrade, aggregate base (where required) and concrete for new curbs, gutters, sidewalks and concrete pavement and structures; and complete sampling and compaction testing of backfill for new irrigation, sewer, water, storm drain pipe, and dry utilities.

6. RECORD DRAWINGS

A. **Task 6.1 Record Drawings**

i. Review and monitor Contractor's weekly updates on red-line drawing set.

ASSUMPTION, CLARIFICATIONS, AND EXCLUSIONS

1. Application fees for City reviews and permits will be paid by CITY.
2. The Owner's Allowance will only be utilized with prior written approval from the City representative.
3. The Direct Expense Allowance will be used for normal reimbursable expenses on the project. Items must be billed at cost and backup must be provided with pay applications.

EXHIBIT "B"
COMPENSATION AND FEES

DIBBLECM

EXHIBIT "B"
CONSTRUCTION MANAGEMENT
SCOPE OF SERVICES
FEE SCHEDULE

Task	Description	Cost
1	**PRE-CONSTRUCTION ASSISTANCE**	
1.1	Pre-Construction Assistance	$ 1,750.00
	SUBTOTAL TASK 1:	**$ 1,750.00**
2	**CONSTRUCTION MANAGEMENT**	
2.1	Weekly Construction Meetings	$ 25,750.00
2.2	CPM Schedule	$ 2,500.00
2.3	Requests for Information (RFI)	$ 7,500.00
2.4	Shop Drawing Submittals	$ 7,500.00
2.5	Requests for Proposal (RFP)	$ 5,000.00
2.6	Field Directive (FD)	$ 5,000.00
2.7	Contractor Payment Applications	$ 2,500.00
2.8	Public Outreach	$ -
	SUBTOTAL TASK 2:	**$ 55,750.00**
3	**CONSTRUCTION INSPECTION**	
3.1	Inspection Services	$ 50,400.00
3.2	Landscape/Irrigation Inspection Services (IF APPLICABLE)	$ -
3.3	Project Closeout	$ 4,500.00
	SUBTOTAL TASK 3:	**$ 54,900.00**
4	**UTILITY COORDINATION**	
4.1	Utility Coordination	$ -
	SUBTOTAL TASK 4:	**$ -**
5	**MATERIALS TESTING**	
5.1	QC Test Program	$ -
5.2	QA Test Program	$ -
	SUBTOTAL TASK 5:	**$ -**
6	**RECORD DRAWINGS**	
6.1	Record Drawings	$ -
	SUBTOTAL TASK 6:	**$ -**
SUBCONSULTANTS		
Subconsultant Name		$ -
Subconsultant Name		$ -
Subconsultant Name		$ -

Subconsultant Name	$	-
SUBTOTAL SUBCONSULTANTS:	**$**	**-**
ALLOWANCES		
Direct Expense Allowance	$	-
Owner's Allowance	$	10,000.00
SUBTOTAL ALLOWANCES:	**$**	**10,000.00**
PROJECT TOTAL:	**$**	**122,400.00**

EXHIBIT "C"
INSURANCE REQUIREMENTS

1. General.

1.1 At the same time as execution of this Agreement, Consultant must furnish City a certificate of insurance on a standard insurance industry ACORD form. The ACORD form must be issued by an insurance company authorized to transact business in the State of Arizona possessing a current A.M. Best, Inc. rating of A-7, or better and legally authorized to do business in the State of Arizona with policies and forms satisfactory to City. Provided, however, the A.M. Best rating requirement will not be deemed to apply to required Workers' Compensation coverage.

1.2 Consultant and any of its subconsultants must procure and maintain, until all of their obligations have been discharged, including any warranty periods under this Agreement are satisfied, the insurances set forth below.

1.3 The insurance requirements set forth below are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement.

1.4 City in no way warrants that the minimum insurance limits contained in this Agreement are sufficient to protect Consultant from liabilities that might arise out of the performance of the Agreement services under this Agreement by Consultant, its agents, representatives, employees, subconsultants, and Consultant is free to purchase any additional insurance as may be determined necessary.

1.5 Failure to demand evidence of full compliance with the insurance requirements in this Agreement or failure to identify any insurance deficiency will not relieve Consultant from, nor will it be considered a waiver of its obligation to maintain the required insurance at all times during the performance of this Agreement.

1.6 Use of subconsultants: If any work is subcontracted in any way, Consultant must execute a written contract with subconsultant containing the same Indemnification Clause and Insurance Requirements as City requires of Consultant in this Agreement. Consultant is responsible for executing the Agreement with the subconsultant and obtaining Certificates of Insurance and verifying the insurance requirements.

2. Minimum Scope and Limits of Insurance. Consultant must provide coverage with limits of liability not less than those stated below.

2.1 *Professional Liability.* If the Agreement is the subject of any professional services or work performed by Consultant, or if Consultant engages in any professional services or work adjunct or residual to performing the work under this Agreement, Consultant must maintain Professional Liability insurance covering errors and omissions arising out of the work or services performed by Consultant, or anyone employed by Consultant, or anyone whose acts, mistakes, errors and omissions Consultant is legally liable, with a liability limit of $1,000,000 each claim and $2,000,000 all claims. In the event the Professional Liability

insurance policy is written on a "claims made" basis, coverage must extend for 3 years past completion and acceptance of the work or services, and Consultant, or its selected Design Professional will submit Certificates of Insurance as evidence the required coverage is in effect. The Design Professional must annually submit Certificates of Insurance citing that the applicable coverage is in force and contains the required provisions for a 3 year period.

2.2 *Commercial General Liability-Occurrence Form.* Consultant must maintain "occurrence" form Commercial General Liability insurance with a limit of not less than $2,000,000 for each occurrence, $4,000,000 aggregate. Said insurance must also include coverage for products and completed operations, independent contractors, personal injury and advertising injury. If any Excess insurance is utilized to fulfill the requirements of this paragraph, the Excess insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

2.3 *Automobile Liability-Any Auto or Owned, Hired and Non-Owned Vehicles*
Vehicle Liability: Consultant must maintain Business/Automobile Liability insurance with a limit of $1,000,000 each accident on Consultant owned, hired, and non-owned vehicles assigned to or used in the performance of Consultant's work or services under this Agreement. If any Excess or Umbrella insurance is utilized to fulfill the requirements of this paragraph, the Excess or Umbrella insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

2.4 *Workers Compensation and Employers Liability Insurance:* Consultant must maintain Workers Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Consultant employees engaged in the performance of work or services under this Agreement and must also maintain Employers' Liability insurance of not less than $1,000,000 for each accident and $1,000,000 disease for each employee.

3. Additional Policy Provisions Required.

3.1 *Self-Insured Retentions or Deductibles.* Any self-insured retentions and deductibles must be declared and approved by City. If not approved, City may require that the insurer reduce or eliminate any deductible or self-insured retentions with respect to City, its officers, officials, agents, employees, and volunteers.

3.1.1. Consultant's insurance must contain broad form contractual liability coverage.

3.1.2. Consultant's insurance coverage must be primary insurance with respect to City, its officers, officials, agents, and employees. Any insurance or self-insurance maintained by City, its officers, officials, agents, and employees will be in excess of the coverage provided by Consultant and must not contribute to it.

3.1.3. Consultant's insurance must apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

3.1.4. Coverage provided by Consultant must not be limited to the liability assumed under the indemnification provisions of this Agreement.

3.1.5. The policies must contain a severability of interest clause and waiver of subrogation against City, its officers, officials, agents, and employees, for losses arising from Work performed by Consultant for City.

3.1.6. Consultant, its successors and or assigns, are required to maintain Commercial General Liability insurance as specified in this Agreement for a minimum period of 3 years following completion and acceptance of the Work. Consultant must submit a Certificate of Insurance evidencing Commercial General Liability insurance during this 3 year period containing all the Agreement insurance requirements, including naming City of Chandler, its agents, representatives, officers, directors, officials and employees as Additional Insured as required.

3.1.7. If a Certificate of Insurance is submitted as verification of coverage, City will reasonably rely upon the Certificate of Insurance as evidence of coverage but this acceptance and reliance will not waive or alter in any way the insurance requirements or obligations of this Agreement.

3.2. *Insurance Cancellation During Term of Contract/Agreement.*

3.2.1. If any of the required policies expire during the life of this Agreement, Consultant must forward renewal or replacement Certificates to City within 10 days after the renewal date containing all the required insurance provisions.

3.2.2. Each insurance policy required by the insurance provisions of this Agreement must provide the required coverage and must not be suspended, voided or canceled except after thirty (30) days prior written notice has been given to City, except when cancellation is for non-payment of premium, then ten (10) days prior notice may be given. Such notice must be sent directly to Chandler Law-Risk Management Department, Post Office Box 4008, Mailstop 628, Chandler, Arizona 85225. If any insurance company refuses to provide the required notice, Consultant or its insurance broker must notify City of any cancellation, suspension, non-renewal of any insurance within seven (7) days of receipt of insurers' notification to that effect.

3.3 City as Additional Insured. The policies are to contain, or be endorsed to contain, the following provisions:

3.3.1. The Commercial General Liability and Automobile Liability policies are to contain, or be endorsed to contain, the following provisions: City, its officers, officials, agents, and employees are additional insureds with respect to liability arising out of activities performed by, or on behalf of, Consultant including City's general supervision of Consultant; Products and Completed operations of Consultant; and automobiles owned, leased, hired, or borrowed by Consultant.

3.3.2. City, its officers, officials, agents, and employees must be additional insureds to the full limits of liability purchased by Consultant even if those limits of liability are in excess of those required by this Agreement.

EXHIBIT "D"
SPECIAL CONDITIONS

Standard Details and Specifications. Consultant must be familiar with City's latest revision of the MAG Specifications and MAG Standard Details as amended by City. City's current amendment to the MAG Specifications, part of City's Unified Development Manual, may be found and downloaded from City's website at http://www.chandleraz.gov/udm.

City Ownership of Project Documents. All work products (electronically or manually generated) including, but not limited to: plans, specifications, cost estimates, field notes, tracings, studies, investigations, design analyses, original drawings, original mylars, Computer Aided Drafting and Design (CADD) file diskettes which reflect all final drawings, and other related documents which are prepared in the performance of this Agreement (collectively referred to as "Documents") are to be and remain the property of City and are to be delivered to the Project Manager before the final payment is made to Consultant. In the event these Documents are altered, modified or adapted without the written consent of Consultant, which consent Consultant must not unreasonably withhold, City agrees to hold Consultant harmless to the extent permitted by law from the legal liability arising out of City's alteration, modification or adaptation of the Documents.

Re-use of Documents. The parties agree the documents, drawings, specifications and designs, although the property of City, are prepared for this specific project and are not intended nor represented by Consultant to be suitable for re-use for any other project. Any re-use without written verification or adaptation by Consultant for the specific purpose intended will be at City's sole risk and without liability or legal exposure to Consultant.

Patent Fees and Royalties. Consultant must pay all license fees and royalties and assume all costs incidental to the use, in the performance of the work or the incorporation in the work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Agreement for use in the performance of the work and if, to the actual knowledge of City, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed by City in the Agreement. Consultant must defend, indemnify and hold harmless City and anyone directly or indirectly employed by City from and against all claims, damages, losses, and expenses (including attorneys' fees) arising out of any infringement of patent rights or copyrights incidental to the use in the performance of the work, or resulting from the incorporation in the work of any invention, design, process, product, or device not specified in the Agreement, and must defend all such claims in connection with any alleged infringement of such rights.

License to City for Reasonable Use. With this Agreement, Consultant and its subconsultants hereby grant a license to City, its agents, employees, and representatives for an indefinite period of time to reasonably use, make copies, and distribute as appropriate the Documents, works or deliverables developed or created as a result of the Project and this

Agreement. This license also includes the making of derivative works.

Documents to Bear Seal. Consultant and its subconsultants must endorse by professional seal all plans, works, and deliverables prepared by each for this Agreement as required by state law.

Work within City's Right-of-Way. All work performed within City's Right-of-Way by Consultant and Consultant's subconsultants must comply with City of Chandler requirements.

CHANDLER arizona
Community of Innovation

City Council Memorandum **Development Services** **Memo No.** 21-020FA

Date: April 19, 2021
To: Mayor and Council
Thru: Joshua H. Wright, Acting City Manager
Debra Stapleton, Assistant City Manager
Derek D. Horn, Development Services Director
From: Lauren Schumann, Senior Planner
Subject: PLH20-0052 Serene Estates
Final Adoption of Ordinance No. 4967
Request: Rezoning from Neighborhood Commercial (C-1) district to Planned Area Development (PAD) for single-family residential
Location: Northwest of the northwest corner of Galveston and Hartford streets
Applicant: Charles Huellmantel; Huellmantel & Affiliates

Proposed Motion:

Rezoning
Move City Council adopt Ordinance No. 4967, approving PLH20-0052 Serene Estates, Rezoning from C-1 to PAD for single-family residential located northwest of the northwest corner of Galveston and Hartford streets, subject to the conditions as recommended by Planning and Zoning Commission.

Background Data:

At the April 5th City Council Study Session, three additional Preliminary Development Plan stipulations were added to further buffer and enhance the development.

- Approximately 2.3 net acres and undeveloped
- Site zoned C-1, allowing for commercial uses to support the immediate neighborhood
- Subject site wraps an existing commercial corner with a laundromat, convenience store, and restaurant
- A Use Permit to allow a U-Haul facility on a portion of the subject site was denied in 2012
- General Plan designates the site as Neighborhoods and is considered infill
- Project consist of 15 lots totaling 6.4 du/ac

Surrounding Land Use Data:

North	Alley then single-family	South	Galveston Street then single-family and two-story apartments
East	Hartford Street then two-story apartments	West	Alley then single-family

General Plan and Area Plan Designations:

	Existing	Proposed
General Plan	Neighborhoods	No Change

Proposed Development

	Single-family subdivision
# of Lots	15 single-family lots
Density	6.4 dwelling units per acre
Building Setbacks (min.)	• Front – 8.6 ft. to livable, 20 ft. to garage from back of sidewalk • Sides – 5 ft. & 5 ft. • Rear - 10 ft., designated lots in exhibit allow for single-story, attached patios to encroach 5 ft. into 10 ft. setback
Lot Size	Lots range from 3,612 sq. ft. to 6,748 sq. ft.
Lot Coverage (max.)	65 percent
Building Height (max.)	All homes two-story; 28 ft. to midpoint of peak
Architecture Theme	Contemporary and Farmhouse
Number of Elevations	6
House Size	1,795 sq. ft. to 2,292 sq. ft.
Number of Floor Plans	3
Parking Spaces	• Each lot provides a two-vehicle garage with driveways • On-street parking provided on both sides of street; subdivision is not gated

This ordinance was introduced and tentatively adopted on April 8, 2021.

Review and Recommendation

Planning staff finds the proposal consistent with the General Plan. Due to the infill nature of the site, the lots are smaller than adjacent single-family homes to the west and north. However, a twenty foot alley separates the existing homes and the proposed development. The proposed two-story product is an appropriate transition from the neighborhood commercial to the single-family lots. The proposed single-family subdivision will provide a public local street through the development, which allows for parking on both sides of the street for guest and residents. An amenity is not proposed due to size constraints of providing a public street but a public park (Navarrete Park) and two schools are within walking distance of the proposed development. Due to the infill nature of the site, the Residential Development Standards (RDS) for subdivision layout are not applicable. However, the RDS guidelines remain applicable to the architectural design of the homes. The proposed single-family residential subdivision meets the intent of development standards and residential design guidelines. In order to provide private covered patios for each lot, it is requested eight lots encroach five (5) feet into the rear yard setback to provide an adequate patio cover. Some of these lots have the availability of space to build the private patio in the side yard with the appropriate floor plan. As recommended by Planning staff, all lots are required to provide a covered patio in either the rear or side yard at the time of construction. Staff finds the proposal to be consistent with the goals of the General Plan and Planning and Zoning Commission recommends approval subject to conditions.

Public / Neighborhood Notification

- This request was noticed in accordance with the requirements of the Chandler Land Use and Zoning Code.
- To comply with CDC social distancing guidelines, the applicant hosted a digital neighborhood meeting on February 10, 2021. Ten (10) households attended the virtual meeting; only two residents asked questions about the proposal. One resident asked about the proposed walls along the alley, construction timelines and cost of homes. The other resident had concerns with two-story adjacent to single-story regarding privacy issues and concerns with having a Homeowner's Association (HOA) for the new subdivision as they thought it meant excluding the proposed subdivision from the City's rules.
- Planning staff has received one phone call after the neighborhood meeting from a concerned resident who attended the meeting and asked questions. Staff discussed their concerns regarding the following issues: the proposed architecture of the homes is "too modern" for the surrounding neighborhood; two-story homes adjacent to single-story; and the resident thought the property should develop as a community center or library for the neighborhood children. The resident is opposed to the request and has surveyed adjacent homeowners; four letters are attached. Additionally, a video was made by the resident and emailed to Mayor and Council.
- Planning staff has received a letter of support from a resident who attended the neighborhood meeting; their statement of support is attached.
- The applicant subsequently agreed to additional stipulations to address neighbors' concerns in the Preliminary Development Plan approved by City Council on April 8, 2021, and are the following:
    - Perimeter wall height along north and west property lines shall be increased to eight (8) feet.
    - The developer shall install hedges within rear yards for lots along the north and west property lines.
    - ???????The developer shall work with staff to enhance private driveway surfaces to utilize formed stamped concrete that emulates concrete pavers.

Planning and Zoning Commission Vote Report

Planning and Zoning Commission meeting March 17, 2021
Motion to Approve

In Favor: 5 Opposed: 0 Absent: 2 (Rose, Pekau)

Recommended Conditions of Approval

Rezoning Planning and Zoning Commission recommends the City Council approve of rezoning from C-1 to PAD for single family residential, subject to the following conditions:

1. Development shall be in substantial conformance with the Development Booklet, entitled, "Serene Estates" and kept on file in the City of Chandler Planning Division, in File No. PLH20-0052, modified by such conditions included at the time the Booklet was approved by the Chandler City Council and/or as thereafter amended, modified or supplemented by Chandler City Council.
2. Completion of the construction of all required off-site street improvements including but not limited to paving, landscaping, curb, gutter and sidewalks, median improvements and street lighting to achieve conformance with City codes, standard details, and design manuals.
3. The developer shall be required to install landscaping in the arterial street median(s) adjoining this project. In the event that the landscaping already exists within such median(s) the developer shall be required to upgrade such landscaping to meet current City Standards.
4. Right-of-way dedications to achieve full half-widths, including turn lanes and deceleration lanes, per the standards of the Chandler Transportation Plan.
5. Minimum setbacks shall be as provided below and further detailed in the development booklet:

Front yard setbacks	8.6 ft. to livable; 20 ft. to garage from back of sidewalk

Side yard setbacks	5 ft. and 5 ft.
Rear yard setback	10 ft., with those designated lots depicted in “Exhibit B” allowing for a single-story, attached patio to encroach 5 ft. into 10 ft. setback

Attachments

Ordinance 4967
Vicinity Maps
Development Booklet
Letters from Neighbors

ORDINANCE NO. 4967

AN ORDINANCE OF THE CITY OF CHANDLER, ARIZONA, AMENDING THE ZONING CODE AND MAP ATTACHED THERETO, BY REZONING PARCELS FROM NEIGHBORHOOD COMMERCIAL (C-1) TO PLANNED AREA DEVELOPMENT (PAD) FOR SINGLE-FAMILY AS REPRESENTED IN CASE PLH20-0052 (SERENE ESTATES) LOCATED NORTHWEST OF THE NORTHWEST CORNER OF GALVESTON AND HARTFORD STREETS WITHIN THE CORPORATE LIMITS OF THE CITY OF CHANDLER, ARIZONA; PROVIDING FOR THE REPEAL OF CONFLICTING ORDINANCES; AND PROVIDING FOR PENALTIES.

WHEREAS, the application for rezoning certain property within the corporate limits of Chandler, Arizona, has been filed in accordance with Article XXVI of the Chandler Zoning Code; and

WHEREAS, the application has been published in a local newspaper with general circulation in the City of Chandler, giving fifteen (15) days' notice of time, place and date of public hearing; and

WHEREAS, a notice of such hearing was posted on the property at least seven (7) days prior to said public hearing; and

WHEREAS, a public hearing was held by the Planning and Zoning Commission as required by the Zoning Code.

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Chandler, Arizona, as follows:

Section 1. Legal Description of Property:
As described in *EXHIBIT 'A'*

Said property is hereby rezoned from Neighborhood Commercial (C-1) to Planned Area Development (PAD) for single-family, subject to the following conditions:

1. Development shall be in substantial conformance with the Development Booklet, entitled "Serene Estates" and kept on file in the City of Chandler Planning Division, in File No. PLH20-0052, modified by such conditions included at the time the Booklet was approved by the Chandler City Council and/or as thereafter amended, modified or supplemented by the Chandler City Council.

2. Completion of the construction of all required off-site street improvements including but not limited to paving, landscaping, curb, gutter and sidewalks, median improvements and street lighting to achieve conformance with City codes, standard details, and design manuals.

3. The developer shall be required to install landscaping in the arterial street median(s) adjoining this project. In the event that the landscaping already exists within such median(s) the developer shall be required to upgrade such landscaping to meet current City Standards.

4. Right-of-way dedications to achieve full half-widths, including turn lanes and deceleration lanes, per the standards of the Chandler Transportation Plan.

5. Minimum setbacks shall be as provided below and further detailed in the Development Booklet:

Building setbacks (min.)	
Front	8.6 ft. to livable, 20 ft. to garage from back of sidewalk
Sides	5 ft. & 5 ft.
Rear	10 ft., with those designated lots depicted in "Exhibit B" allowing for a single-story, attached patio to encroach 5 ft. into 10 ft. setback.

Section 2. The Planning Division of the City of Chandler is hereby directed to enter such changes and amendments as may be necessary upon the Zoning Map of said Zoning Code in compliance with this Ordinance.

Section 3. All ordinances or parts of ordinances in conflict with the provisions of this Ordinance, or any parts hereof, are hereby repealed.

Section 4. In any case, where any building, structure, or land is used in violation of this Ordinance, the Planning Division of the City of Chandler may institute an injunction or any other appropriate action in proceeding to prevent the use of such building, structure, or land.

Section 5. If any section, subsection, sentence, clause, phrase or portion of this Ordinance is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, then this entire ordinance is invalid and shall have no force or effect.

Section 6. A violation of this Ordinance shall be a Class 1 misdemeanor subject to the enforcement and penalty provisions set forth in Section 1-8.3 of the Chandler City Code. Each day a violation continues, or the failure to perform any act or duty required by this Ordinance or the Zoning Code, shall constitute a separate offense.

INTRODUCED AND TENTATIVELY APPROVED by the City Council of the City of Chandler, Arizona, this ____ day of _____, 2021.

ATTEST:

_____ _____
CITY CLERK MAYOR

PASSED AND ADOPTED by the City Council of the City of Chandler, Arizona, this _____ day of _____, 2021.

ATTEST:

_____ _____
CITY CLERK MAYOR

CERTIFICATION

I HEREBY CERTIFY that the above and foregoing Ordinance No. 4967 was duly passed and adopted by the City Council of the City of Chandler, Arizona, at a regular meeting held on the ____ day of _____, 2021, and that a quorum was present thereat.

_____
CITY CLERK

APPROVED AS TO FORM:

_____
CITY ATTORNEY TA

Published:

EXHIBIT 'A'
Legal Description

LEGAL DESCRIPTION

A PARCEL OF LAND BEING ALL OF LOT 1 AS SHOWN ON THE MINOR LAND DIVISION MAP OF TRACT A OF SERENE HOMES RECORDED IN BOOK 953, PAGE 1, MARICOPA COUNTY RECORDS AS CONVEYED TO CAPITAL INVESTMENTS, LLC BY DEED OF RECORD INSTRUMENT NUMBER 2017-0968329, MARICOPA COUNTY RECORDS (MCR) AND LYING WITHIN THE NORTHWEST CORNER OF SECTION 28, TOWNSHIP 1 SOUTH, RANGE 5 EAST OF THE GILA & SALT RIVER MERIDIAN, CITY OF CHANDLER, MARICOPA COUNTY ARIZONA AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID LOT 1 FROM WHICH POINT A SOUTHEAST CORNER THEREOF BEARS N89°36'21"E A DISTANCE OF 196.87 FEET;

THENCE ALONG THE RIGHT-OF-WAY LINE OF AN ALLEY THE FOLLOWING THREE (3) COURSES AND DISTANCES

1) N0°27'37"W A DISTANCE OF 354.69 FEET;

2) N47°57'44"E A DISTANCE OF 19.91 FEET;

3) S83°36'56"E A DISTANCE OF 379.74 FEET TO A POINT ON THE WEST RIGHT-OF-WAY LINE OF HARTFORD STREET;

THENCE S0°28'41"E, ALONG SAID WEST RIGHT-OF-WAY LINE, A DISTANCE OF 134.06 FEET TO THE NORTHEAST CORNER OF LOT 2 AS SHOWN ON SAID MINOR LAND DIVISION MAP;

THENCE ALONG THE PERIMETER OF SAID LOT 2 THE FOLLOWING THREE (3) COURSES AND DISTANCES:

1) S89°29'40"W A DISTANCE OF 92.14 FEET;

2) S55°50'54"W A DISTANCE OF 123.79 FEET;

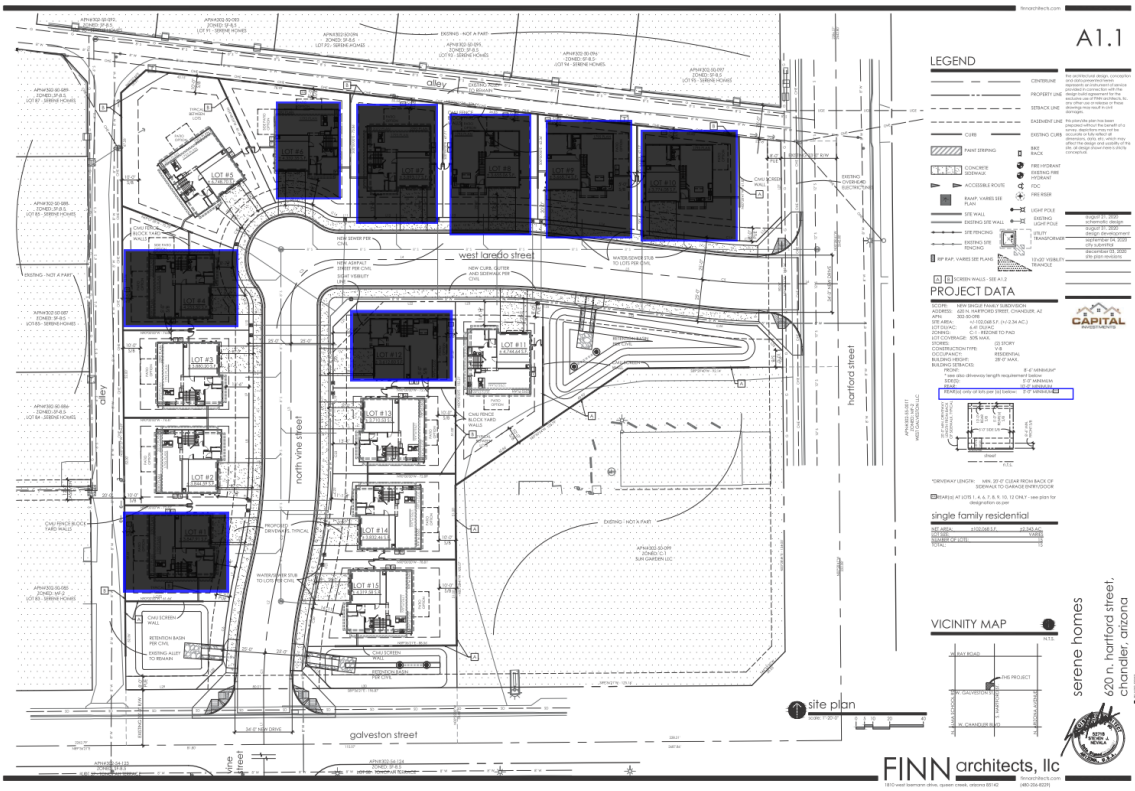
3) S0°28'41"E A DISTANCE OF 120.07 FEET TO A POINT ON THE NORTH RIGHT-OF-WAY LINE OF GALVESTON STREET;

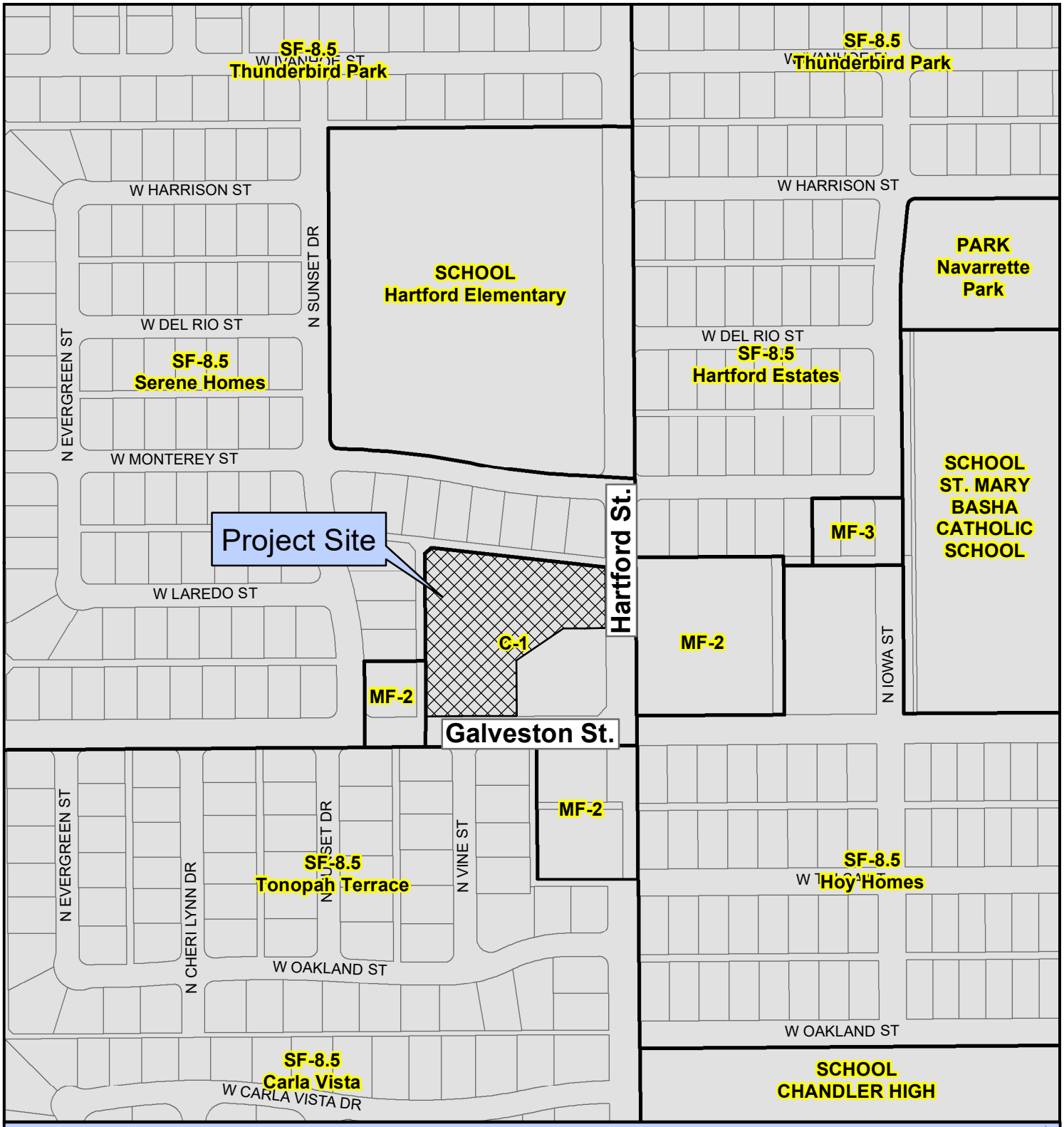
THENCE S89°36'21"W, ALONG SAID NORTH RIGHT-OF-WAY LINE, A DISTANCE OF 196.87 FEET TO THE POINT OF BEGINNING.

THE ABOVE DESCRIBED PARCEL CONTAINS 102,341.18 S.F. (2.3494 ACRES) OF LAND, MORE OR LESS INCLUDING ANY EASEMENTS OF RECORD.

"Exhibit B"

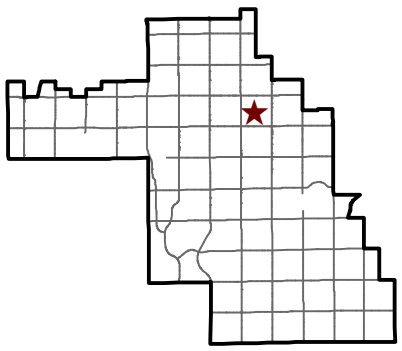
BLACKED OUT LOTS (1,4,6,7,8,9,10, & 12) ALLOW FOR 5 FOOT ENCROACHMENT INTO REAR YARD SETBACK WITH ATTACHED, ONE-STORY PATIOS





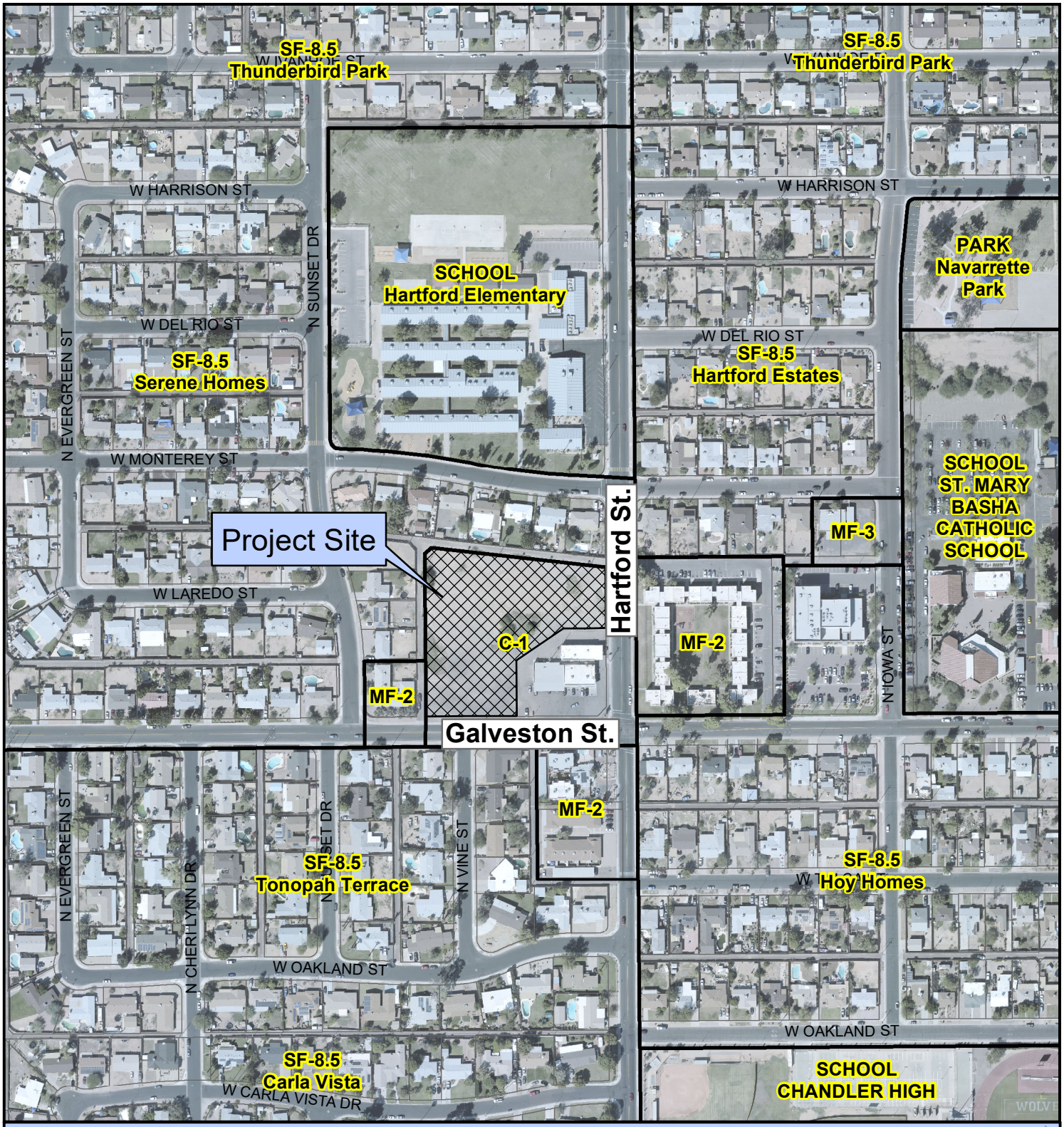
PLH20-0052/PLT20-0039 Serene Estates

Proposed Project Details
REZONE/PDP
2.3acres
15 Lot Single Family
6.41 dwelling units per acre (du/ac)



Chandler Arizona
Where Values Make The Difference

City of Chandler Planning Division
chandleraz.gov/planning
For more information visit:
https://gis.chandleraz.gov/planning



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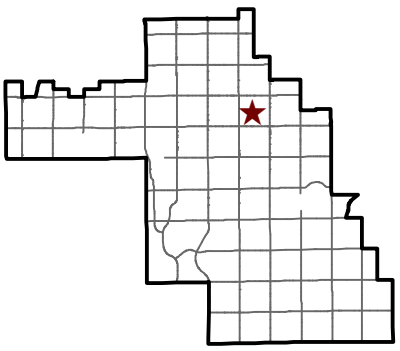

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SERENE ESTATES

REZONING AND PRELIMINARY DEVELOPMENT PLAN

620 NORTH HARTFORD STREET
APN: 302-50-098

CASE #: PLH20-0052



HUELLMANTEL AFFILIATES

P.O. BOX 1833, Tempe, Arizona 85280-1833 ✦ T: (480) 921-2800 ✦ E: charles@huellmantel.com

SUMMARY

Capital Investments, LLC has owned the vacant land northwest of the northwest corner of Galveston Street and Hartford Street for a number of years and has been working with the City of Chandler to develop the land into single-family homes since 2018. The proposal, Serene Estates, received Preliminary Site Plan Technical Review comments from the City in June 2018 (PRE18-0048) and this will be the first formal Rezoning and Preliminary Development Plan submittal for the site.

Our proposal includes 15 single-family homes on approximately 2.34 acres (APN 302-50-098), designed around a through street – north Vine Street in the north/south direction and west Laredo Street in the east/west direction:



The site is currently zoned C-1, Neighborhood Commercial District and consists of a vacant lot:



We plan to rezone the site to PAD zoning, which will allow for the unique setbacks proposed based on the parcel layout, which surrounds an existing commercial use at the corner.

REZONING

We would like to rezone the site from C-1 to PAD to allow for the construction of fifteen single-family residences on approximately 2.34 acres (6.41 dwelling units per acre). The site is located on the north side of Galveston Street and on the west side of Hartford Street (highlighted in blue below), surrounding a commercial use at the corner:

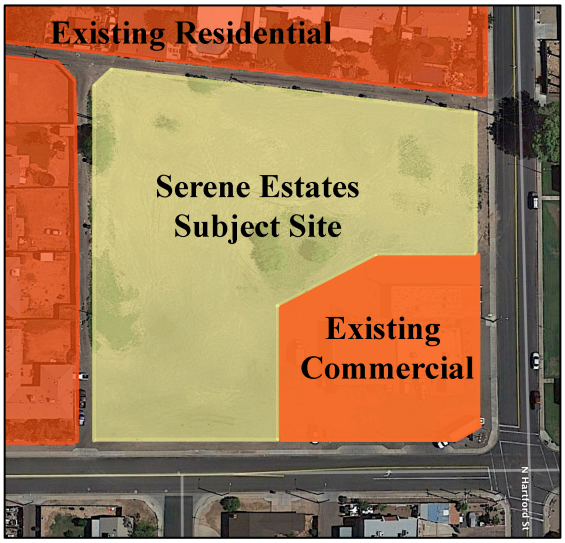


The single-family residences will be built facing two newly created streets, north Vine Street, running north and south and west Laredo Street, running east and west. Five of the residences will be located southeast of Vine and Laredo Streets and the other ten residences will be located north and west of Vine and Laredo.

Each residential lot will consist of one home, a front yard, side yards and a rear yard. The lots on the north and west sides of Vine and Laredo will back up to an existing alley. Three separate tracts have been dedicated on the site for retention. East residential lot will vary in size and the minimum proposed setbacks are as follows: Rear yard - 10 feet, Side yards - 5 feet, Front yard – 8feet, 6 inches. Lots #1, #4, #6, #7, #8, #9, #10, and #12 will have a reduced rear yard setback of 5 feet to allow homebuyers to build a rear yard patio. The maximum height proposed is 28 feet, with the minimum height of the homes 24 feet, 8 inches. All of the homes will have their own private attached garage, and additional parking will be allowed / provided on both sides of Vine and Laredo Streets.

Per the City of Chandler ***Residential Development Standards*** guidelines for single-family development, our request of PAD zoning should be considered for our site despite the average lot size based on the following circumstances:

1) *An infill proposal involving a small or irregularly shaped parcel, located within a developed residential neighborhood and immediate contiguous to existing land uses and physical barriers, such as streets, canals, etc., which otherwise preclude expansion*
   The subject site is considered infill development – the site is irregularly shaped, and located adjacent to an existing neighborhood, bordered by Hartford and Galveston Streets and the existing commercial use on the corner:



   These existing barriers preclude expansion of the site. Additionally, the proposed Serene Estates development will replace underutilized commercial property with aesthetically pleasing, vibrant housing which will activate the area.

2) *Parcels with boundaries limited only by ownership lines caused by lot splits and indiscriminate parcel divisions shall not be considered as infill*
   The parcel of the subject site was not platted by Capital Investments, the property owner, and is not subject to indiscriminate parcel divisions.

3) *Geographically, such parcels are usually limited to developed areas located ½ mile north of the San Tan Freeway (nothing south of Pecos Road) and ½ mile east of Price Road, and generally range in size from one (1) to ten (10) acres.*
   Although the site is located north or Pecos Road, it is not within ½ mile east of Price Road. The site is approximately 2.34 acres and surrounded by existing commercial and residential uses, which qualifies the land as infill.

4) *Minimum lot size, average lot size and lot range shall be determined in conjunction with the most diverse lot pattern possible under the circumstances.*
   Our architecture team has designed the site to use the land in the most useful way possible, while including a through street for safe and convenient circulation for both fire

and refuse. The lots are shaped to provide adequate room for the location of the residence while providing useful outdoor space in a variety of configurations – some home buyers may prefer smaller yards to keep up than other home buyers. As there will be parking opportunities provided on both sides of Vine and Laredo Streets, the lots are an adequate size and provide parking for one (or two cars) in attached garages and in each lot's driveway.

5) *Finding that the proposed intensity, pattern, and quality meets or exceeds that of the surrounding environment.*
The majority of the surrounding homes were built from the late 1950s to the 1970s, which means that no newer home stock is offered in the neighborhood. The construction of Serene Estates will provide a new, quality home option for Chandler residents. Additionally, the site is located approximately 200 feet from the Hartford Sylvia Encinas Elementary School, less than ½ a mile from Blueprint High School and Arizona College Prep (Oakland Campus) and one block from Navarette Park– the proximity to these family-oriented services makes this an appropriate location for single-family homes.

PRELIMINARY DEVELOPMENT PLAN

The site is a vacant, undeveloped infill lot located on the east side of Hartford Street and the north side of Galveston Street, at 620 North Hartford Street:

Facing west from Hartford Street:



Facing north from Galveston Street:

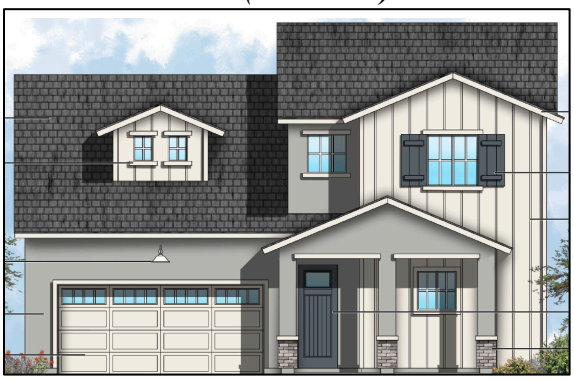


The parcel is located approximately 1.5 miles from Downtown Chandler, and in close proximity to commercial, residential and civic uses. Capital Investments would like to construct 15 single-family residences on the approximately 2.34 acre site and provide three landscapes retention basins. The site is designed with a through street, Laredo Street going east and west and Vine Street going north and south, with ingress and egress on Hartford Street and Galveston Street. The lots on the north and west sides of Laredo and Vine will back onto an existing alley and the lots on the south and east sides of Laredo and Vine will be backed by new 6-foot CMU walls.

The proposed residences will range from 1,795 to 2,292 square feet of living space, with two stories and enclosed garages. Buyers will have the opportunity to choose from three different models, in either a contemporary or farmhouse aesthetic. Each of the six elevation / model options will have three different color schemes to choose from. This variety of finish options will

provide an assortment of home styles, creating an interesting and aesthetically appealing neighborhood without monotony. The elevations below are a sample of the 18 different possible elevation color and style combinations homeowners can choose from:

Elevation 1795 (Farmhouse):



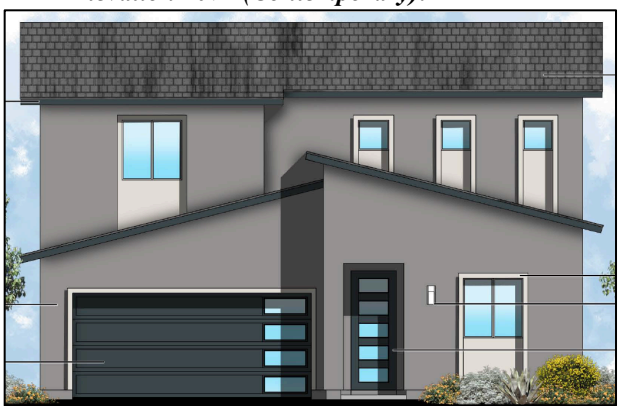
Elevation 1795 (Contemporary):



Elevation 2072 (Farmhouse):



Elevation 2072 (Contemporary):



Elevation 2292 (Farmhouse):



Elevation 2292 (Contemporary):



The building design schemes, “Contemporary” and “Farmhouse” will use different material palettes that include brick, shutters and sidings for the Farmhouse options and stucco in grey or white, blue, grey or brown color front doors and white painted window frames. The Contemporary homes will feature more angles, elongated windows and architecturally interesting front and garage doors.

The proposed landscape palette for the site in the common areas includes Red Push Pistache, Willow Acacia, and Chitalpa trees, Green Cloud, Orange Jubilee bushes and Red Yucca, Desert Spoon, and Gold Mound plants:










aerial map

Serene Homes

Name: Serene Homes

Location: 620 N. Hartford Street, Chandler, AZ (N.W.C. of Galveston and Hartford streets)

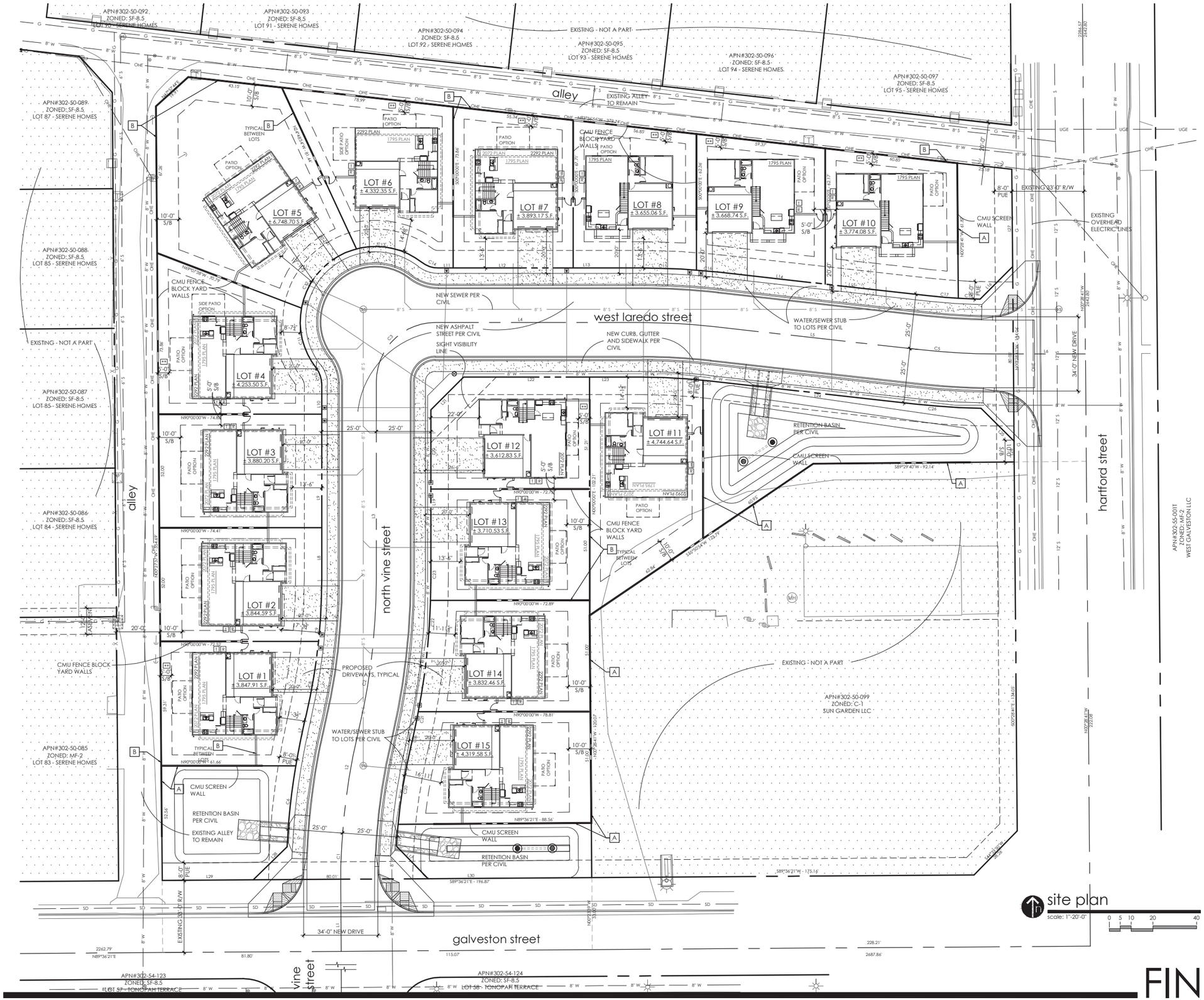
APN # 302-50-098





FINN architects, llc
1810 W. Loemann Drive, Queen Creek, AZ 85142 • 480.206.8229 / 480.244.0269 • www.finnarchitects.com

A1.1



site plan

scale: 1"-20'-0"

0 5 10 20 40

LEGEND

- CENTERLINE
- PROPERTY LINE
- SETBACK LINE
- EASEMENT LINE
- CURB / EXISTING CURB
- PAINT STRIPING
- BIKE RACK
- CONCRETE SIDEWALK
- FIRE HYDRANT
- EXISTING FIRE HYDRANT
- ACCESSIBLE ROUTE
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- RAMP, VARIES SEE PLAN
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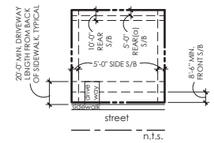
- LIGHT POLE
- EXISTING SITE WALL
- EXISTING LIGHT POLE
- SITE FENCING
- UTILITY TRANSFORMER
- EXISTING SITE FENCING
- RIP RAP, VARIES SEE PLANS
- 10'x20' VISIBILITY TRIANGLE

A , B SCREEN WALLS - SEE A1.2

PROJECT DATA

SCOPE:	NEW SINGLE FAMILY SUBDIVISION
ADDRESS:	620 N. HARTFORD STREET, CHANDLER, AZ
APN:	302-50-098
SITE AREA:	+/-102,068 S.F. (+/-2.34 AC.)
LOT DU/AC:	6.41 DU/AC
ZONING:	C-1 - REZONE TO PAD
LOT COVERAGE:	50% MAX.
STORIES:	(2) STORY
CONSTRUCTION TYPE:	V-B
OCCUPANCY:	RESIDENTIAL
BUILDING HEIGHT:	28'-0" MAX.
BUILDING SETBACKS:	
FRONT:	8'-6" MINIMUM*
* see also driveway length requirement below	
SIDE(S):	5'-0" MINIMUM
REAR:	10'-0" MINIMUM
REAR(a) only at lots per (a) below:	5'-0" MINIMUM**



*DRIVEWAY LENGTH: MIN. 20'-0" CLEAR FROM BACK OF SIDEWALK TO GARAGE ENTRY/DOOR

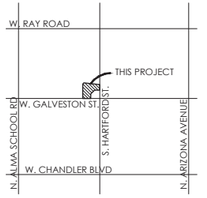
**REAR(a) AT LOTS 1, 4, 6, 7, 8, 9, 10, 12 ONLY - see plan for designation as per

single family residential

NET AREA:	±102,068 S.F.	±2.343 AC.
LOT SIZE:		VARIES
NUMBER OF LOTS:		15
TOTAL:		15

VICINITY MAP

N.T.S.



the architectural design, conception and data presented herein represents an instrument of service provided in connection with the design build agreement for the exclusive use of FINN architects, llc. any other use or release or these drawings may result in civil damages.

this plan/site plan has been prepared without the benefit of a survey. depictions may not be accurate or fully reflect all dimensions, data, etc. which may affect the design and usability of this site. all design shown here is strictly conceptual.

august 21, 2020 schematic design
august 31, 2020 design development
september 04, 2020 city submittal
december 03, 2020 site plan revisions

CAPITAL INVESTMENTS

serene homes

620 n. hartford street, chandler, arizona

• PLH20-0052



FINN architects, llc
1810 west loemann drive, queen creek, arizona 85142
finnarchitects.com
(480-206-8229)

A1.1

LEGEND

- CENTERLINE
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- SITE WALL / EXISTING SITE WALL
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- SITE FENCING / EXISTING SITE FENCING
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- RIP RAP, VARIES SEE PLANS
- 10'x20' VISIBILITY TRIANGLE

A B SCREEN WALLS - SEE A1.2

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LOT COVERAGE: 50% MAX.
STORIES: (2) STORY
CONSTRUCTION TYPE: V-B
OCCUPANCY: RESIDENTIAL
BUILDING HEIGHT: 28'-0" MAX.
BUILDING SETBACKS:
FRONT: 8'-6" MINIMUM*
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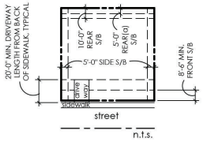
SIDE(S): 5'-0" MINIMUM
REAR: 10'-0" MINIMUM
REAR(a) only at lots per (a) below: 5'-0" MINIMUM.**



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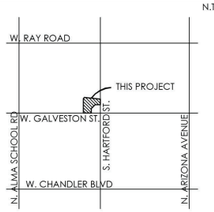
** REAR(a) AT LOTS 1, 4, 6, 7, 8, 9, 10, 12 ONLY - see plan for designation as per

single family residential

NET AREA:	±102,068 S.F.	±2.343 AC.
LOT SIZE:		VARIES
NUMBER OF LOTS:		15
TOTAL:		15

VICINITY MAP

N.T.S.



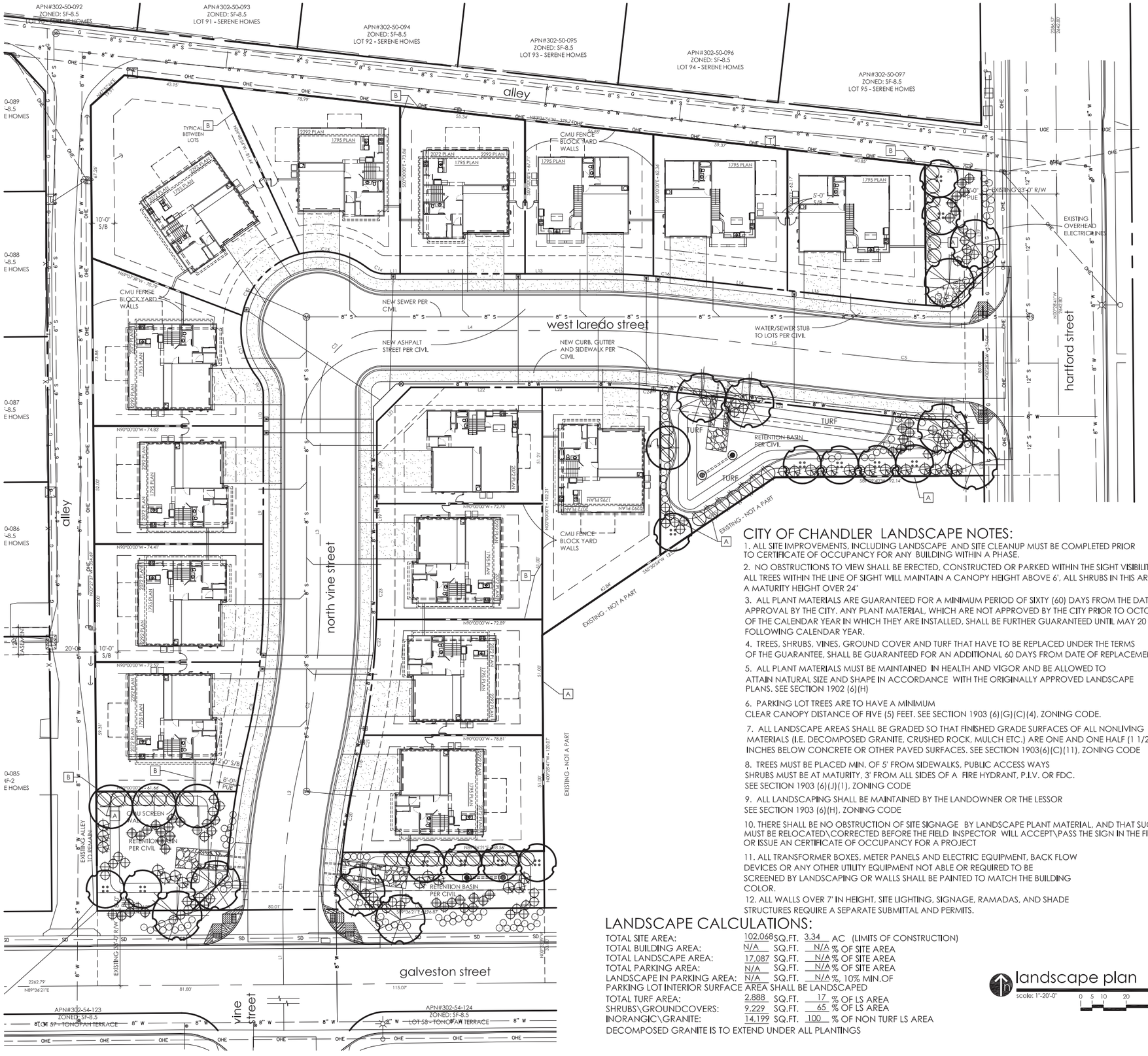
site plan
scale: 1"-20'-0" 0 5 10 20 40

Artistic depiction only.
Not to be referred to as a construction document.

serene homes
620 n. hartford street,
chandler, arizona
PLH20-0052

REGISTERED ARCHITECT 52718 STEVEN J. NEVALA DATE SIGNED 12/03/20 ARIZONA, U.S.A.

FINN architects, llc
1810 west loemann drive, queen creek, arizona 85142
finnarchitects.com
(480-206-8229)



VICINITY MAP

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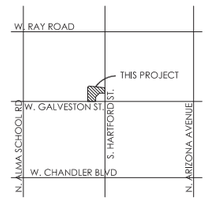

LEGEND

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- EXISTING SITE FENCING
- RIP RAP, VARIES SEE PLANS
- 10'x20' VISIBILITY TRIANGLE
- [A] - [B] SCREEN WALLS - SEE A1.2

ALL TREES SHALL COMPLY WITH THE LATEST AMENDED EDITION OF THE ARIZONA NURSERY ASSOCIATION RECOMMENDED TREE SPECIFICATIONS. SEE SECTION 1903(6)(a) ZONING CODE.

CITY OF CHANDLER LANDSCAPE NOTES:

1. ALL SITE IMPROVEMENTS, INCLUDING LANDSCAPE AND SITE CLEANUP MUST BE COMPLETED PRIOR TO CERTIFICATE OF OCCUPANCY FOR ANY BUILDING WITHIN A PHASE.
2. NO OBSTRUCTIONS TO VIEW SHALL BE ERECTED, CONSTRUCTED OR PARKED WITHIN THE SIGHT VISIBILITY AREA ALL TREES WITHIN THE LINE OF SIGHT WILL MAINTAIN A CANOPY HEIGHT ABOVE 6', ALL SHRUBS IN THIS AREA MAY NOT A MATURITY HEIGHT OVER 24"
3. ALL PLANT MATERIALS ARE GUARANTEED FOR A MINIMUM PERIOD OF SIXTY (60) DAYS FROM THE DATED OF FINAL APPROVAL BY THE CITY. ANY PLANT MATERIAL, WHICH ARE NOT APPROVED BY THE CITY PRIOR TO OCTOBER 1 OF THE CALENDAR YEAR IN WHICH THEY ARE INSTALLED, SHALL BE FURTHER GUARANTEED UNTIL MAY 20 OF THE FOLLOWING CALENDAR YEAR.
4. TREES, SHRUBS, VINES, GROUND COVER AND TURF THAT HAVE TO BE REPLACED UNDER THE TERMS OF THE GUARANTEE, SHALL BE GUARANTEED FOR AN ADDITIONAL 60 DAYS FROM DATE OF REPLACEMENT.
5. ALL PLANT MATERIALS MUST BE MAINTAINED IN HEALTH AND VIGOR AND BE ALLOWED TO ATTAIN NATURAL SIZE AND SHAPE IN ACCORDANCE WITH THE ORIGINALLY APPROVED LANDSCAPE PLANS. SEE SECTION 1902 (6)(H)
6. PARKING LOT TREES ARE TO HAVE A MINIMUM CLEAR CANOPY DISTANCE OF FIVE (5) FEET. SEE SECTION 1903 (6)(G)(C)(4), ZONING CODE.
7. ALL LANDSCAPE AREAS SHALL BE GRADED SO THAT FINISHED GRADE SURFACES OF ALL NONLIVING MATERIALS (I.E. DECOMPOSED GRANITE, CRUSHED ROCK, MULCH ETC.) ARE ONE AND ONE HALF (1 1/2) INCHES BELOW CONCRETE OR OTHER PAVED SURFACES. SEE SECTION 1903(6)(C)(11), ZONING CODE
8. TREES MUST BE PLACED MIN. OF 5' FROM SIDEWALKS, PUBLIC ACCESS WAYS SHRUBS MUST BE AT MATURITY, 3' FROM ALL SIDES OF A FIRE HYDRANT, P.I.V. OR FDC. SEE SECTION 1903 (6)(J)(1), ZONING CODE
9. ALL LANDSCAPING SHALL BE MAINTAINED BY THE LANDOWNER OR THE LESSOR SEE SECTION 1903 (6)(H), ZONING CODE
10. THERE SHALL BE NO OBSTRUCTION OF SITE SIGNAGE BY LANDSCAPE PLANT MATERIAL, AND THAT SUCH MUST BE RELOCATED\CORRECTED BEFORE THE FIELD INSPECTOR WILL ACCEPT\PASS THE SIGN IN THE FIELD OR ISSUE AN CERTIFICATE OF OCCUPANCY FOR A PROJECT
11. ALL TRANSFORMER BOXES, METER PANELS AND ELECTRIC EQUIPMENT, BACK FLOW DEVICES OR ANY OTHER UTILITY EQUIPMENT NOT ABLE OR REQUIRED TO BE SCREENED BY LANDSCAPING OR WALLS SHALL BE PAINTED TO MATCH THE BUILDING COLOR.
12. ALL WALLS OVER 7' IN HEIGHT, SITE LIGHTING, SIGNAGE, RAMADAS, AND SHADE STRUCTURES REQUIRE A SEPARATE SUBMITTAL AND PERMITS.

LANDSCAPE CALCULATIONS:

TOTAL SITE AREA:	102,068	SQ.FT.	3.34	AC (LIMITS OF CONSTRUCTION)
TOTAL BUILDING AREA:	N/A	SQ.FT.	N/A	% OF SITE AREA
TOTAL LANDSCAPE AREA:	17,087	SQ.FT.	N/A	% OF SITE AREA
TOTAL PARKING AREA:	N/A	SQ.FT.	N/A	% OF SITE AREA
LANDSCAPE IN PARKING AREA:	N/A	SQ.FT.	N/A	%, 10% MIN.OF PARKING LOT INTERIOR SURFACE AREA SHALL BE LANDSCAPED
TOTAL TURF AREA:	2,888	SQ.FT.	17	% OF LS AREA
SHRUBS\GROUNDCOVERS:	9,229	SQ.FT.	65	% OF LS AREA
INORANGIC\GRANITE:	14,199	SQ.FT.	100	% OF NON TURF LS AREA

DECOMPOSED GRANITE IS TO EXTEND UNDER ALL PLANTINGS

landscape plan
scale: 1"-20'-0" 0 5 10 20 40

LANDSCAPE LEGEND

- PISTACHE CHINENSIS 'RED PUSH' RED PUSG PISTACHE 36" BOX, 2" CALIP., 7.0'T, 4.5'W
- ACACIA SALICINA WILLOW ACACIA 24" BOX, 1" CALIP., 6'T, 3.5'W.
- CHITALPA TASKENTSIS CHITALPA 24" BOX 1.5" CALIP., 5.5'T,4'W
- LEUCOPHYLLUM FRUTESCENS 'GREEN CLOUD' 5 GALLON
- TECOMA 'ORANGE JUBILEE' ORANGE JUBILEE 5 GALLON
- HESPERALOE PARVIFLORA RED YUCCA 5 GALLON
- DASYLIRION WHEELERII DESERT SPOON 5 GALLON
- LANTANA MONTEVIDENSIS 'GOLD MOUND' 1 GALLON
- 1/2" SCREENED SADDLEBACK BROWN DECOMPOSED GRANITE 2" DEPTH IN ALL LANDSCAPE AREAS
- TURF MID-IRON TURF SOD
- 6" EXTRUDED CURB CONCRETE HEADER SEE DETAIL

T.J. McQUEEN & ASSOCIATES, INC.
LANDSCAPE ARCHITECTURE
URBAN DESIGN
SITE PLANNING
10450 N. 74th Street , Suite 120
Scottsdale, Arizona 85258
P.(602)265-0320
EMAIL: timmcqueen@tjmla.net

TJ&M ASSOCIATES

REGISTERED LANDSCAPE ARCHITECT 27166 TIMOTHY J. McQUEEN Date Signed 08/03/21 ARIZONA U.S.A. EXPIRES 06/30/2023

FINN architects, llc
1810 west loemann drive, queen creek, arizona 85142
finnarchitects.com
(480-206-8229)

serene homes
620 n. hartford street,
chandler, arizona

finnarchitects.com

La.01

the architectural design, conception and data presented herein represents an instrument of service provided in connection with the design build agreement for the exclusive use of RNN architects, llc. any other use or release of these drawings may result in civil damages.

this plan/site plan has been prepared without the benefit of a survey. depictions may not be accurate or fully reflect all dimensions, data, etc., which may affect the design and usability of this site. all design shown here is strictly conceptual.

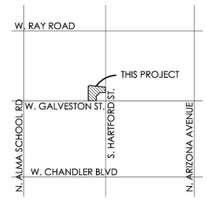
august 21, 2020 schematic design
august 31, 2020 design development
september 04, 2020 city submittal

CAPITAL INVESTMENTS



VICINITY MAP

N.T.S.



LEGEND

- CENTERLINE
- PROPERTY LINE
- SETBACK LINE
- EASEMENT LINE
- CURB
- EXISTING CURB
- PAINT STRIPING
- BIKE RACK
- CONCRETE SIDEWALK
- FIRE HYDRANT
- EXISTING FIRE HYDRANT
- ACCESSIBLE ROUTE
- FDC
- RAMP, VARIES SEE PLAN
- FIRE RISER
- SITE WALL
- LIGHT POLE
- EXISTING SITE WALL
- EXISTING LIGHT POLE
- SITE FENCING
- UTILITY TRANSFORMER
- EXISTING SITE FENCING
- RIP RAP, VARIES SEE PLANS
- 10'x20' VISIBILITY TRIANGLE
- A . B SCREEN WALLS - SEE A1.2

ALL TREES SHALL COMPLY WITH THE LATEST AMENDED EDITION OF THE ARIZONA NURSERY ASSOCIATION RECOMMENDED TREE SPECIFICATIONS. SEE SECTION 1903(6)(a) ZONING CODE.

CITY OF CHANDLER LANDSCAPE NOTES:

1. ALL SITE IMPROVEMENTS, INCLUDING LANDSCAPE AND SITE CLEANUP MUST BE COMPLETED PRIOR TO CERTIFICATE OF OCCUPANCY FOR ANY BUILDING WITHIN A PHASE.
2. NO OBSTRUCTIONS TO VIEW SHALL BE ERECTED, CONSTRUCTED OR PARKED WITHIN THE SIGHT VISIBILITY AREA ALL TREES WITHIN THE LINE OF SIGHT WILL MAINTAIN A CANOPY HEIGHT ABOVE 6', ALL SHRUBS IN THIS AREA MAY NOT A MATURITY HEIGHT OVER 24"
3. ALL PLANT MATERIALS ARE GUARANTEED FOR A MINIMUM PERIOD OF SIXTY (60) DAYS FROM THE DATED OF FINAL APPROVAL BY THE CITY. ANY PLANT MATERIAL, WHICH ARE NOT APPROVED BY THE CITY PRIOR TO OCTOBER 1 OF THE CALENDAR YEAR IN WHICH THEY ARE INSTALLED, SHALL BE FURTHER GUARANTEED UNTIL MAY 20 OF THE FOLLOWING CALENDAR YEAR.
4. TREES, SHRUBS, VINES, GROUND COVER AND TURF THAT HAVE TO BE REPLACED UNDER THE TERMS OF THE GUARANTEE, SHALL BE GUARANTEED FOR AN ADDITIONAL 60 DAYS FROM DATE OF REPLACEMENT.
5. ALL PLANT MATERIALS MUST BE MAINTAINED IN HEALTH AND VIGOR AND BE ALLOWED TO ATTAIN NATURAL SIZE AND SHAPE IN ACCORDANCE WITH THE ORIGINALLY APPROVED LANDSCAPE PLANS. SEE SECTION 1902 (6)(H)
6. PARKING LOT TREES ARE TO HAVE A MINIMUM CLEAR CANOPY DISTANCE OF FIVE (5) FEET. SEE SECTION 1903 (6)(G)(C)(4), ZONING CODE.
7. ALL LANDSCAPE AREAS SHALL BE GRADED SO THAT FINISHED GRADE SURFACES OF ALL NONLIVING MATERIALS (I.E. DECOMPOSED GRANITE, CRUSHED ROCK, MULCH ETC.) ARE ONE AND ONE HALF (1 1/2) INCHES BELOW CONCRETE OR OTHER PAVED SURFACES. SEE SECTION 1903(6)(C)(11), ZONING CODE
8. TREES MUST BE PLACED MIN. OF 5' FROM SIDEWALKS, PUBLIC ACCESS WAYS SHRUBS MUST BE AT MATURITY, 3' FROM ALL SIDES OF A FIRE HYDRANT, P.I.V. OR FDC. SEE SECTION 1903 (6)(J)(1), ZONING CODE
9. ALL LANDSCAPING SHALL BE MAINTAINED BY THE LANDOWNER OR THE LESSOR SEE SECTION 1903 (6)(H), ZONING CODE
10. THERE SHALL BE NO OBSTRUCTION OF SITE SIGNAGE BY LANDSCAPE PLANT MATERIAL, AND THAT SUCH MUST BE RELOCATED\CORRECTED BEFORE THE FIELD INSPECTOR WILL ACCEPT\PASS THE SIGN IN THE FIELD OR ISSUE AN CERTIFICATE OF OCCUPANCY FOR A PROJECT
11. ALL TRANSFORMER BOXES, METER PANELS AND ELECTRIC EQUIPMENT, BACK FLOW DEVICES OR ANY OTHER UTILITY EQUIPMENT NOT ABLE OR REQUIRED TO BE SCREENED BY LANDSCAPING OR WALLS SHALL BE PAINTED TO MATCH THE BUILDING COLOR.
12. ALL WALLS OVER 7' IN HEIGHT, SITE LIGHTING, SIGNAGE, RAMADAS, AND SHADE STRUCTURES REQUIRE A SEPARATE SUBMITTAL AND PERMITS.

LANDSCAPE CALCULATIONS:

TOTAL SITE AREA:	102,068	SQ.FT.	3.34	AC (LIMITS OF CONSTRUCTION)
TOTAL BUILDING AREA:	N/A	SQ.FT.	N/A	% OF SITE AREA
TOTAL LANDSCAPE AREA:	17,087	SQ.FT.	N/A	% OF SITE AREA
TOTAL PARKING AREA:	N/A	SQ.FT.	N/A	% OF SITE AREA
LANDSCAPE IN PARKING AREA:	N/A	SQ.FT.	N/A	%, 10% MIN.OF
PARKING LOT INTERIOR SURFACE AREA SHALL BE LANDSCAPED				
TOTAL TURF AREA:	2,888	SQ.FT.	17	% OF LS AREA
SHRUBS\GROUNDCOVERS:	9,229	SQ.FT.	65	% OF LS AREA
INORANGIC\GRANITE:	14,199	SQ.FT.	100	% OF NON TURF LS AREA

DECOMPOSED GRANITE IS TO EXTEND UNDER ALL PLANTINGS

LANDSCAPE LEGEND

- PISTACHE CHINENSIS 'RED PUSH' RED PUSG PISTACHE 36" BOX, 2" CALIP., 7.0'T, 4.5'W
- ACACIA SALICINA WILLOW ACACIA 24" BOX, 1" CALIP., 6'T, 3.5'W.
- CHITALPA TASKENTSIS CHITALPA 24" BOX 1.5" CALIP., 5.5'T,4'W
- LEUCOPHYLLUM FRUTESCENS 'GREEN CLOUD' 5 GALLON
- TECOMA 'ORANGE JUBILEE' ORANGE JUBILEE 5 GALLON
- HESPERALOE PARVIFLORA RED YUCCA 5 GALLON
- DASYLIRION WHEELERII DESERT SPOON 5 GALLON
- LANTANA MONTEVIDENSIS 'GOLD MOUND' 1 GALLON
- 1/2" SCREENED SADDLEBACK BROWN DECOMPOSED GRANITE 2" DEPTH IN ALL LANDSCAPE AREAS
- TURF MID-IRON TURF SOD
- 6" EXTRUDED CURB CONCRETE HEADER SEE DETAIL

landscape plan

scale: 1"-20'-0" 0 5 10 20 40

T.J. McQUEEN & ASSOCIATES, INC.
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URBAN DESIGN
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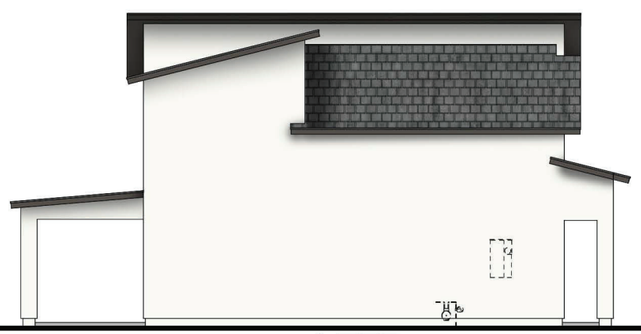
REAR



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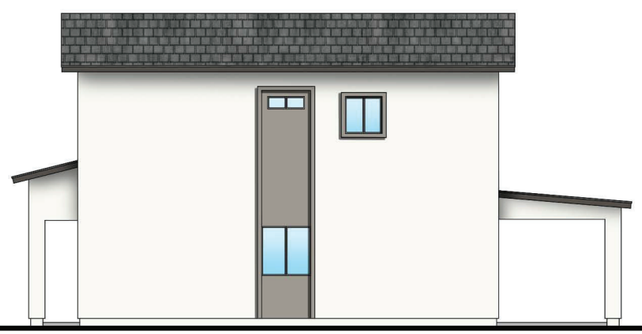


RIGHT

MOUNTAIN TOP BUILDERS, LLC

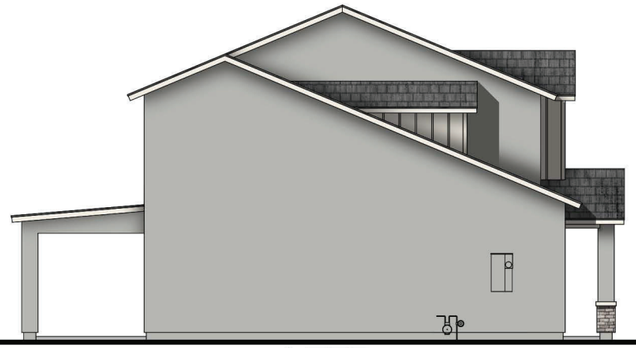
- SERENE ESTATES -

PLAN 1795 A - SCHEME 2
Contemporary





REAR



LEFT



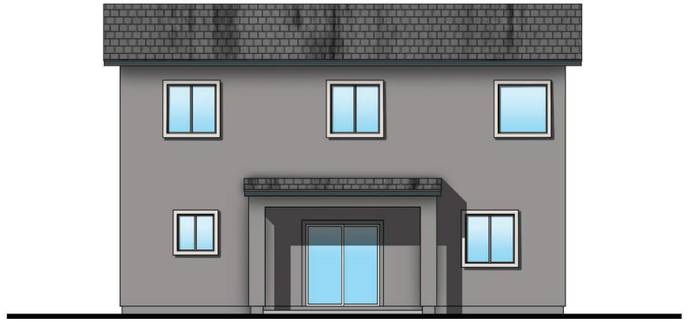
RIGHT

MOUNTAIN TOP BUILDERS, LLC

- SERENE ESTATES -

PLAN 1795 B - SCHEME 5
Farmhouse





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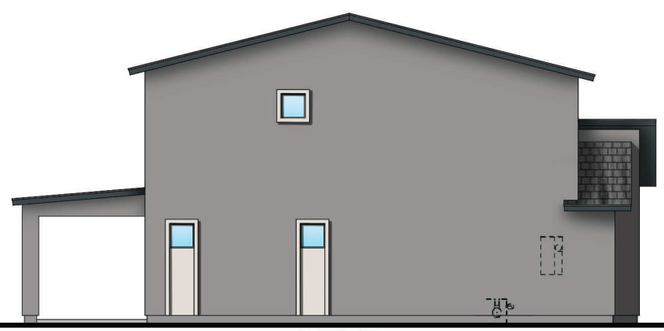

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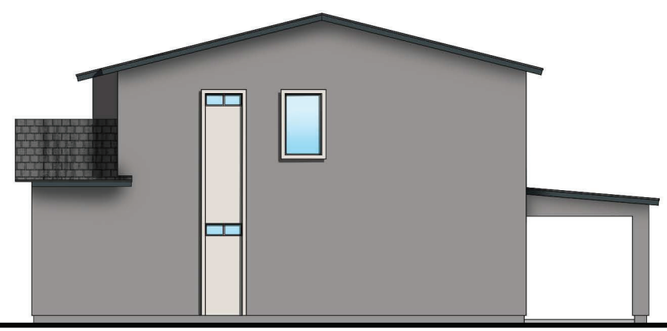

RIGHT

MOUNTAIN TOP BUILDERS, LLC

- SERENE ESTATES -

PLAN 2072 A - SCHEME 1
Contemporary





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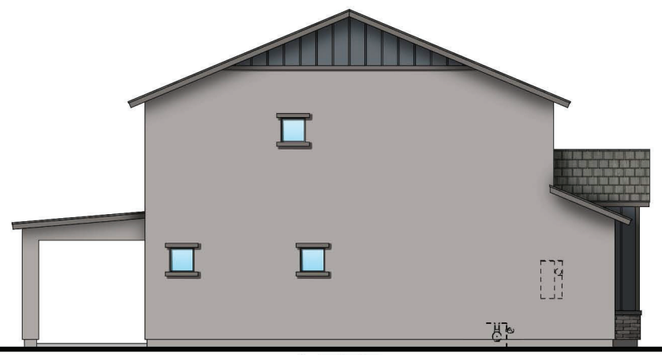

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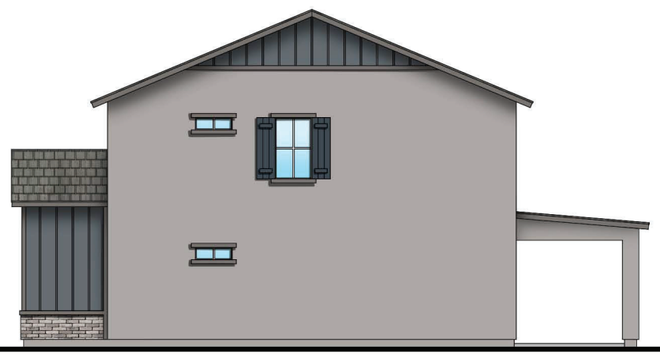


RIGHT

MOUNTAIN TOP BUILDERS, LLC

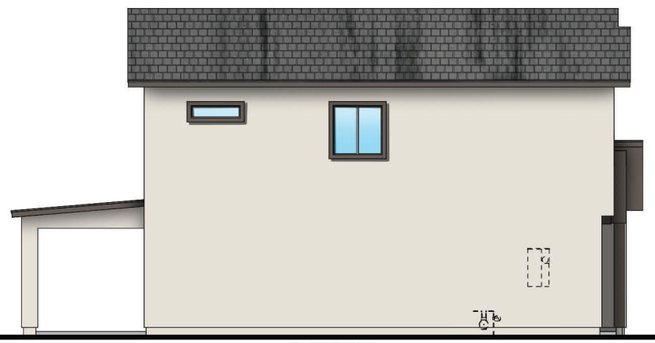
- SERENE ESTATES -

PLAN 2072 B - SCHEME 4
Farmhouse





REAR



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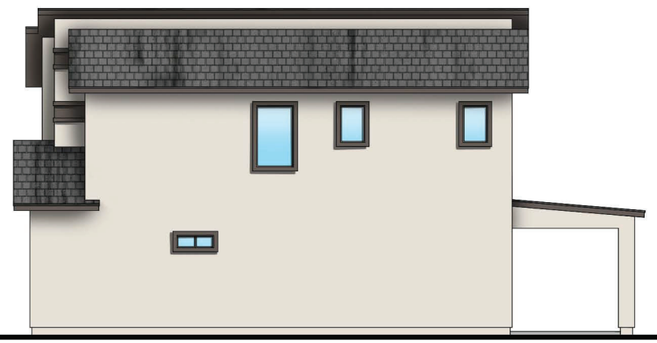


RIGHT

MOUNTAIN TOP BUILDERS, LLC

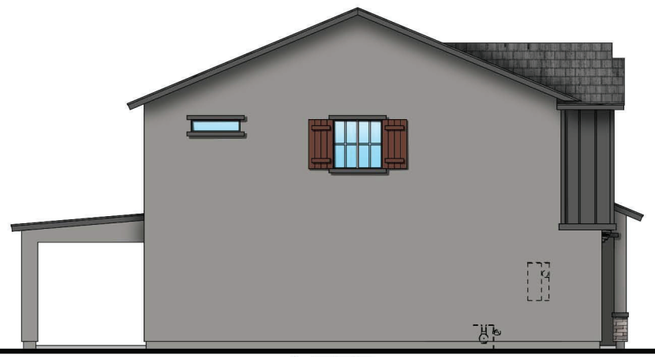
- SERENE ESTATES -

PLAN 2292 A - SCHEME 3
Contemporary





REAR



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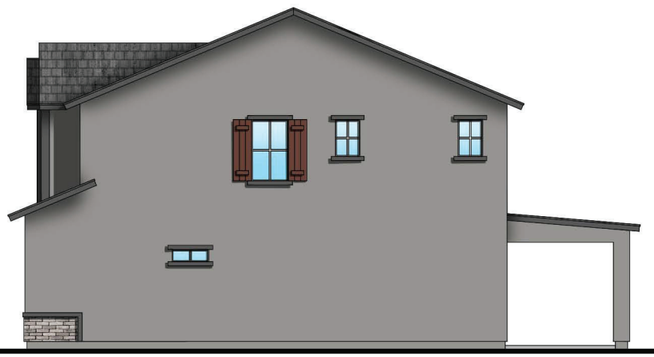


RIGHT

MOUNTAIN TOP BUILDERS, LLC

- SERENE ESTATES -

PLAN 2292 B - SCHEME 6
Farmhouse



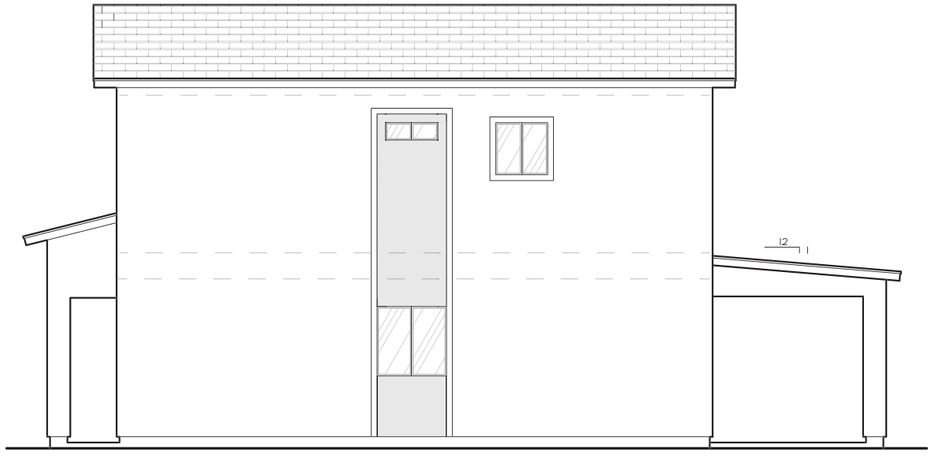
REAR ELEVATION 'A'

CONTEMPORARY SCALE: 1/4" = 1'-0"



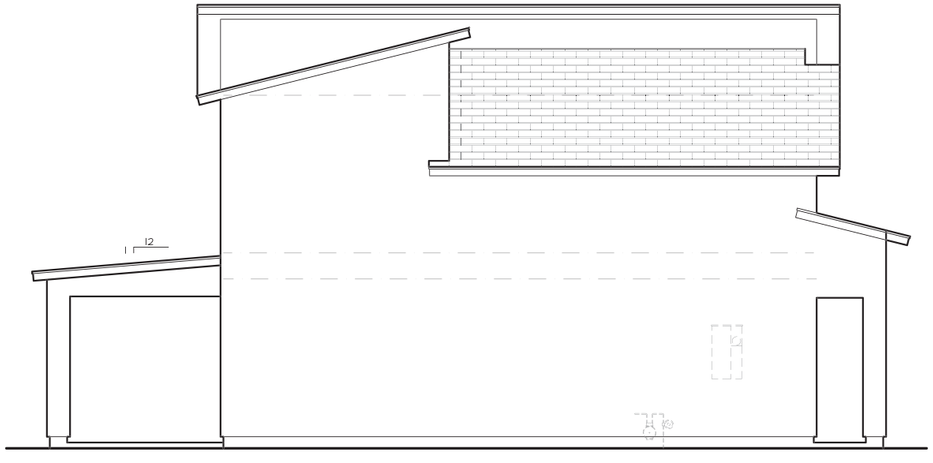
FRONT ELEVATION 'A'

CONTEMPORARY SCALE: 1/4" = 1'-0"



RIGHT ELEVATION 'A'

CONTEMPORARY SCALE: 1/4" = 1'-0"



LEFT ELEVATION 'A'

CONTEMPORARY SCALE: 1/4" = 1'-0"

SERENE ESTATES

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16211 North Scottsdale Road, AGA 605
Scottsdale, Arizona 85254
(602) 466-0959

jm design
2120 east southern avenue
apache junction, az 85119
studio...480.326.7543
jmdesignllc@gmail.com

EXTERIOR ELEVATION 'A'

PLOT DATE: 2-10-21

Rev.	DATE:
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PLAN #

1795

SHEET NO.

A3



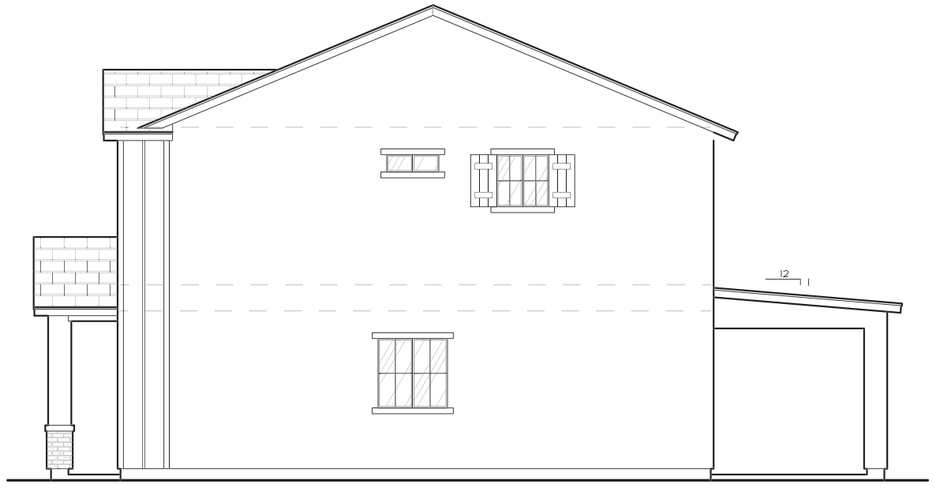
REAR ELEVATION 'B'

FARMHOUSE SCALE: 1/4" = 1'-0"



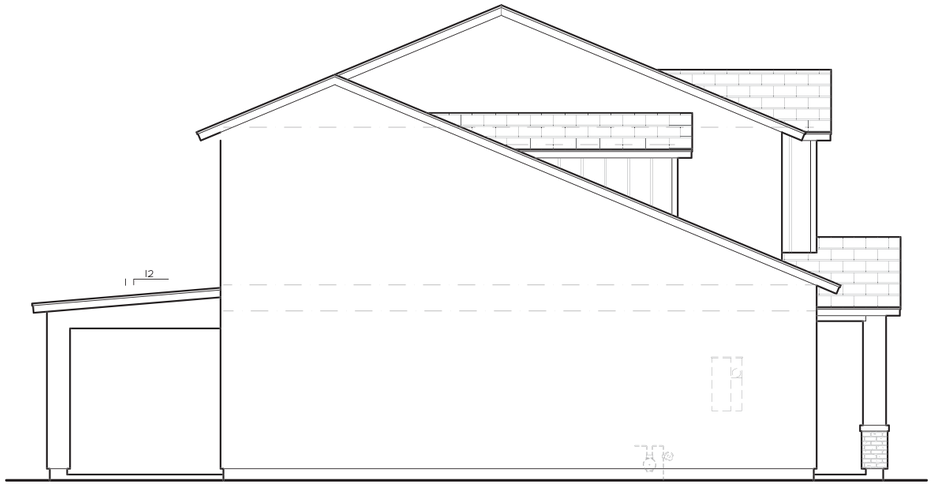
FRONT ELEVATION 'B'

FARMHOUSE SCALE: 1/4" = 1'-0"



RIGHT ELEVATION 'B'

FARMHOUSE SCALE: 1/4" = 1'-0"



LEFT ELEVATION 'B'

FARMHOUSE SCALE: 1/4" = 1'-0"

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A3.1



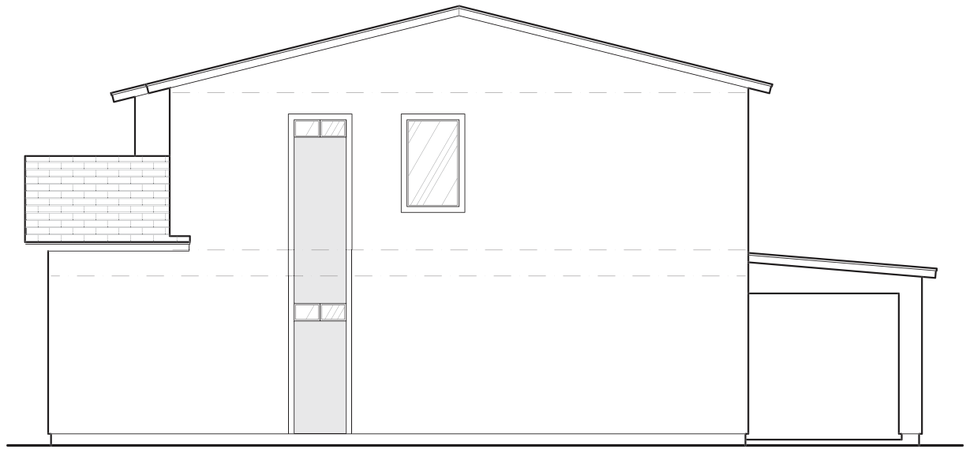
REAR ELEVATION 'A'

CONTEMPORARY SCALE: 1/4" = 1'-0"



FRONT ELEVATION 'A'

CONTEMPORARY SCALE: 1/4" = 1'-0"



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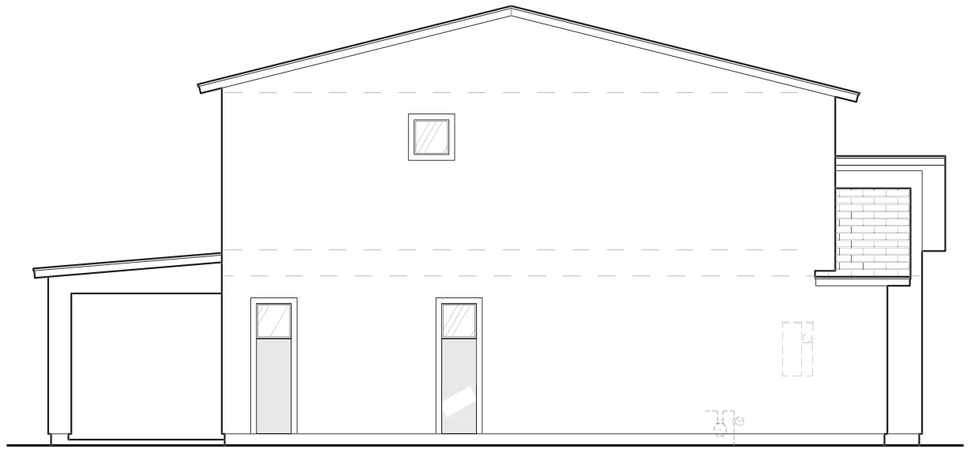

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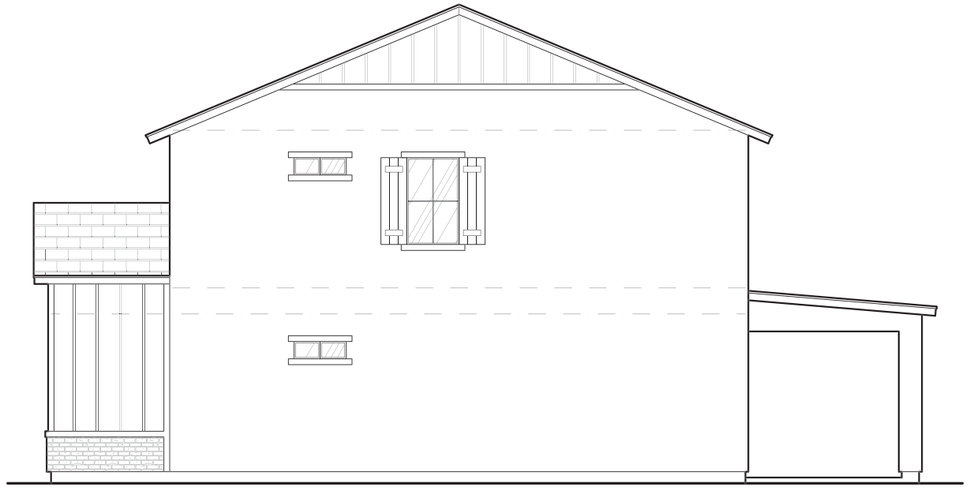
REAR ELEVATION 'B'

FARMHOUSE SCALE: 1/4" = 1'-0"



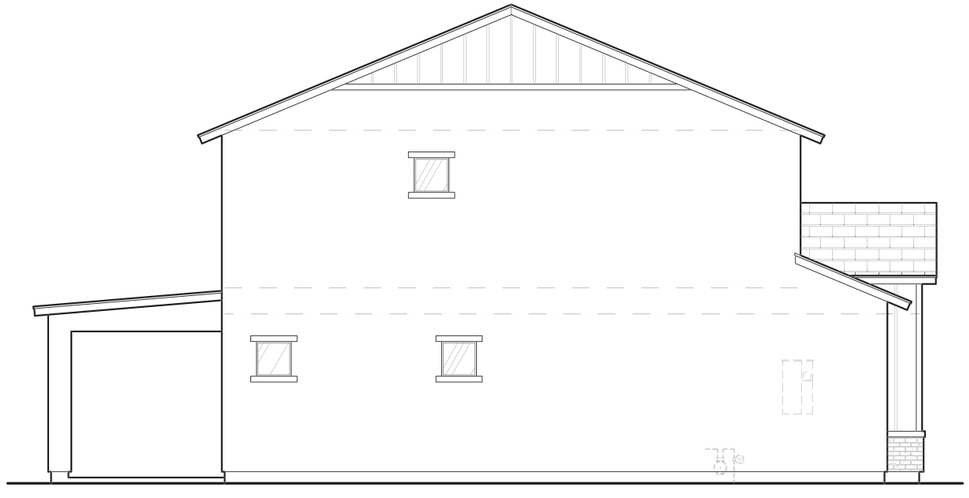
FRONT ELEVATION 'B'

FARMHOUSE SCALE: 1/4" = 1'-0"



RIGHT ELEVATION 'B'

FARMHOUSE SCALE: 1/4" = 1'-0"



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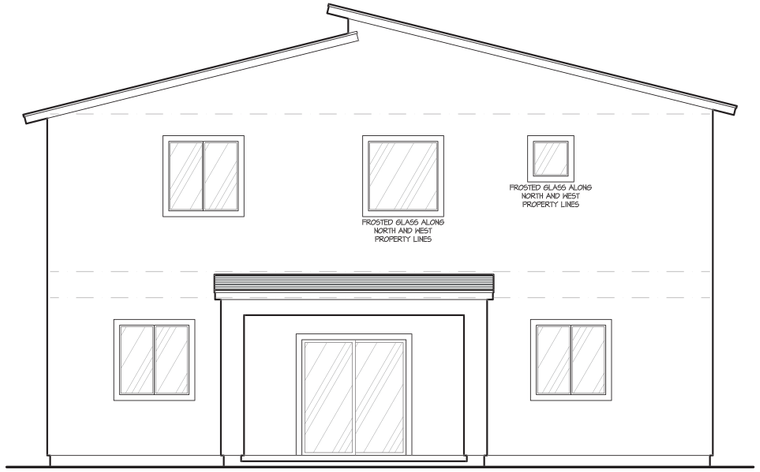

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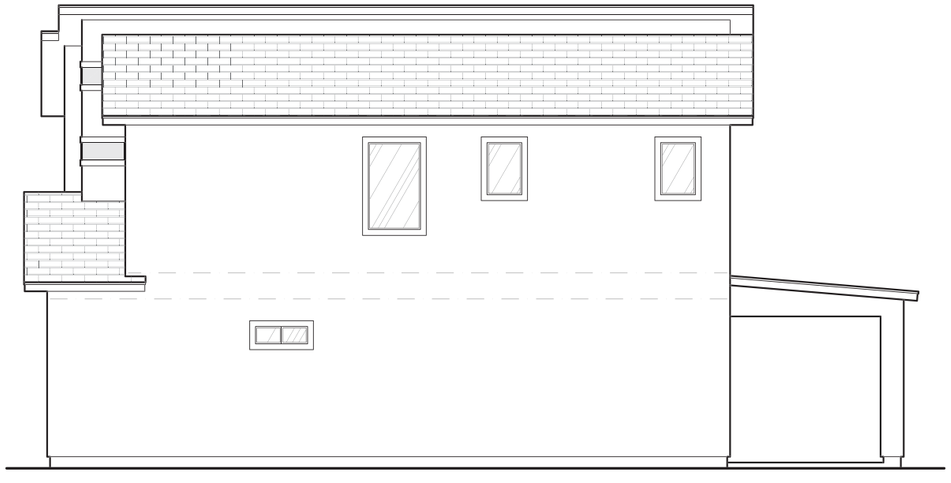
CONTEMPORARY SCALE: 1/4" = 1'-0"



FRONT ELEVATION 'A'

CONTEMPORARY SCALE: 1/4" = 1'-0"



RIGHT ELEVATION 'A'

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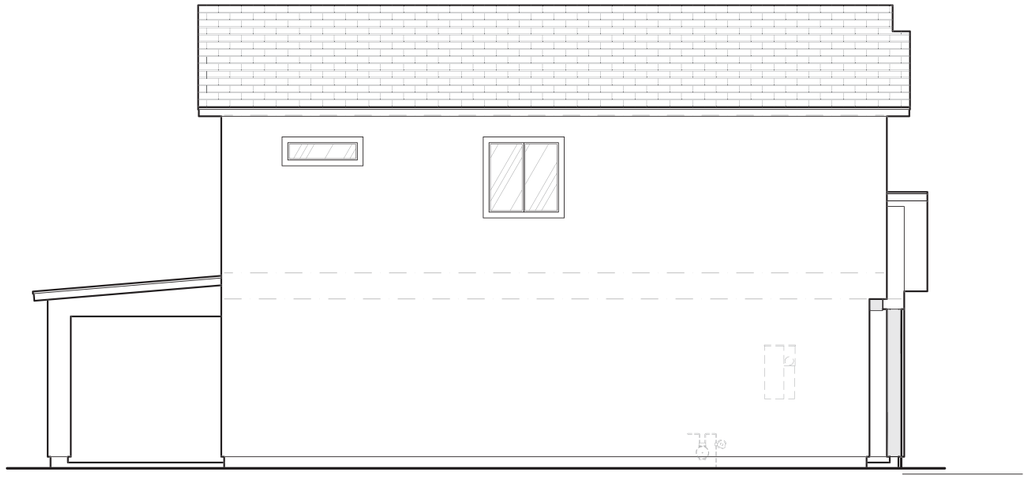

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A3



REAR ELEVATION 'B'

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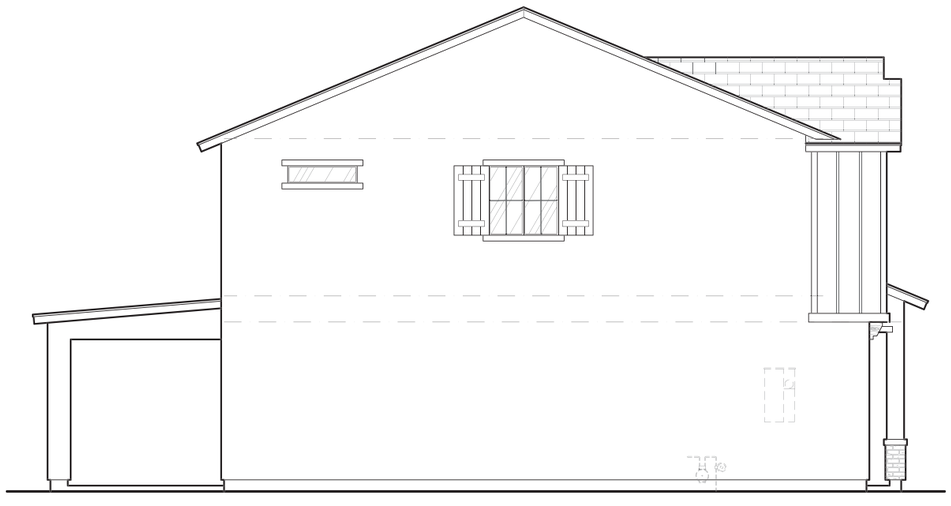
FRONT ELEVATION 'B'

FARMHOUSE SCALE: 1/4" = 1'-0"



RIGHT ELEVATION 'B'

FARMHOUSE SCALE: 1/4" = 1'-0"



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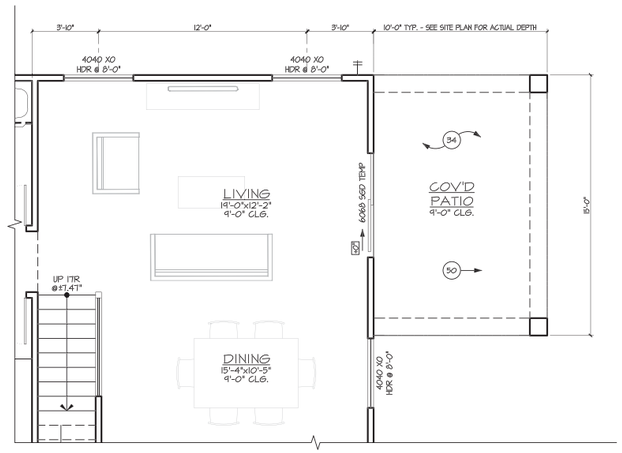
2292

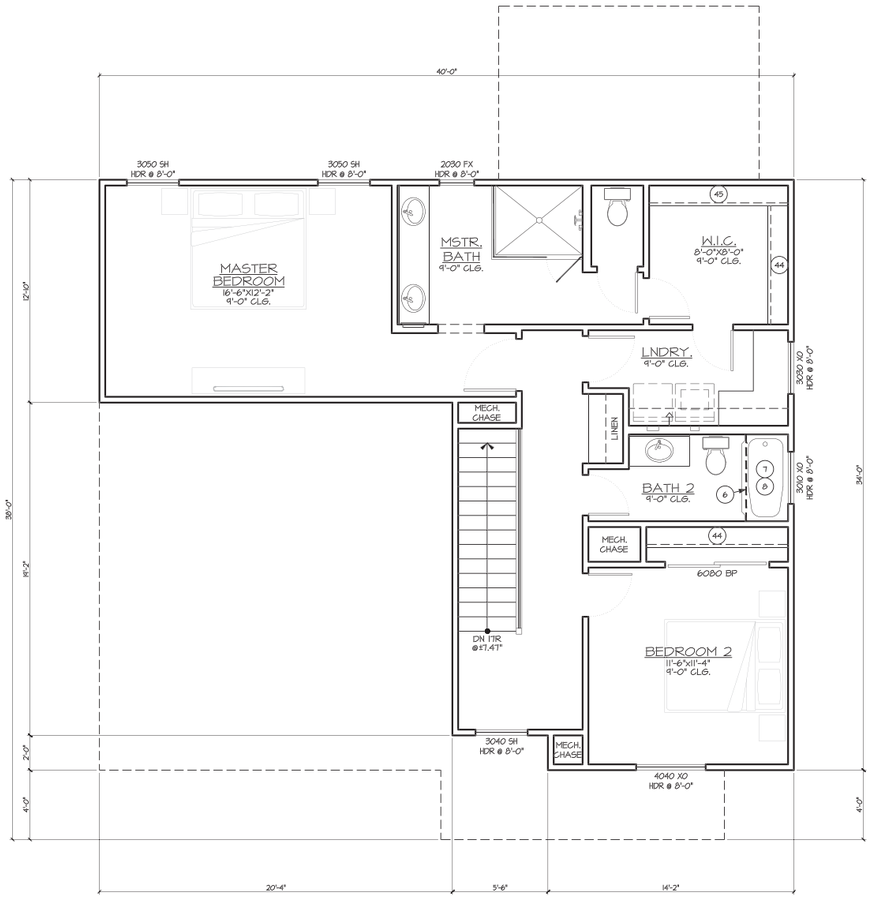
SHEET NO.

A3.1



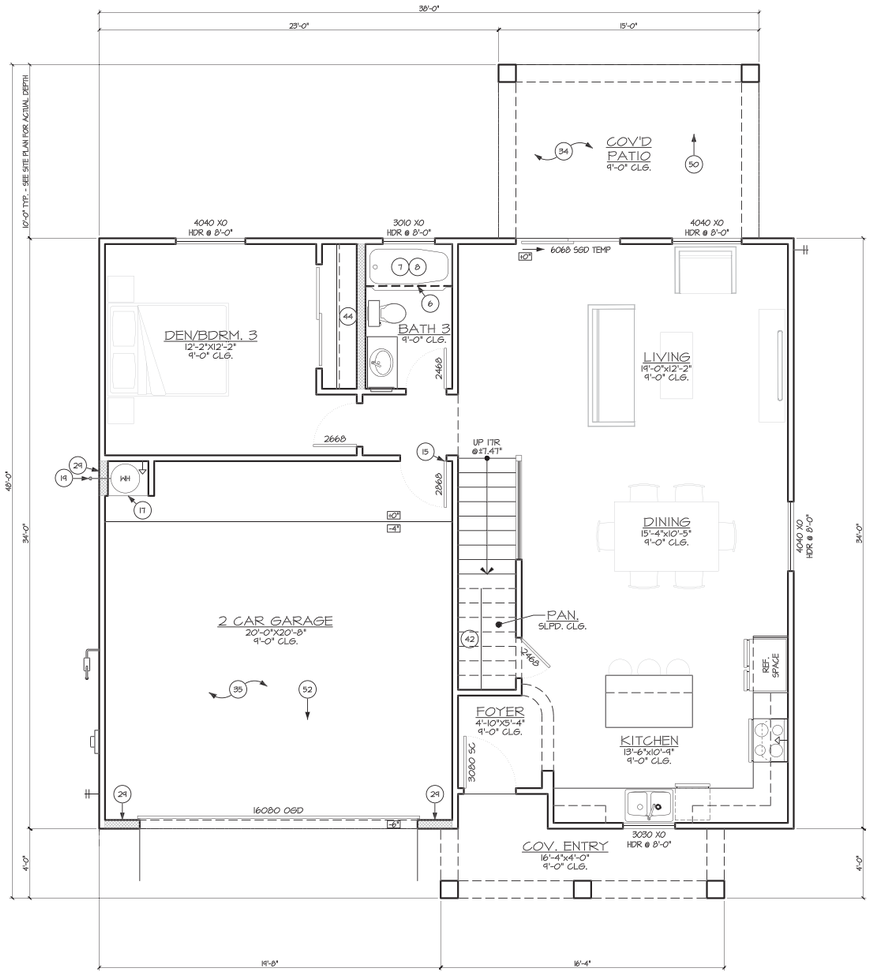
OPT. SIDE PATIO

1/4"=1'-0"



UPPER FLOOR PLAN

1/4"=1'-0"



MAIN FLOOR PLAN

1/4"=1'-0"

AREA CALC'S.

LIVABLE AREAS:	
MAIN LIVABLE	919 SQ.FT.
UPPER LIVABLE	876 SQ.FT.
TOTAL LIVABLE	1,795 SQ.FT.
COVERED AREAS:	
COVERED ENTRY	76 SQ.FT.
REAR COVERED PATIO	150 SQ.FT.
GARAGE:	
2 CAR GARAGE	431 SQ.FT.
TOTAL AREA	2,673 SQ.FT.
TOTAL FOOTPRINT/ROOF AREA	1,576 SQ.FT.

SERENE ESTATES

MOUNTAIN TOP BUILDERS, LLC
16211 North Scottsdale Road, AGA 605
Scottsdale, Arizona 85254
(602) 466-0959

jm design
2120 east southern avenue
apache junction, az 85119
studio...480.326.7543
jmdesignllc@gmail.com

FLOOR PLANS

PLOT DATE: 3-09-21

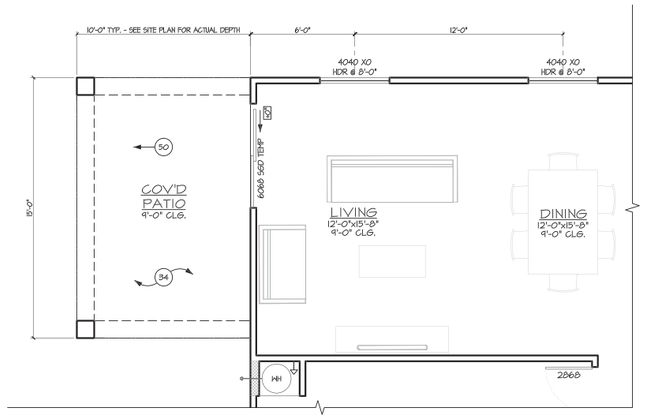
Rev.	DATE:
1	
2	
3	
4	

PLAN #

1795

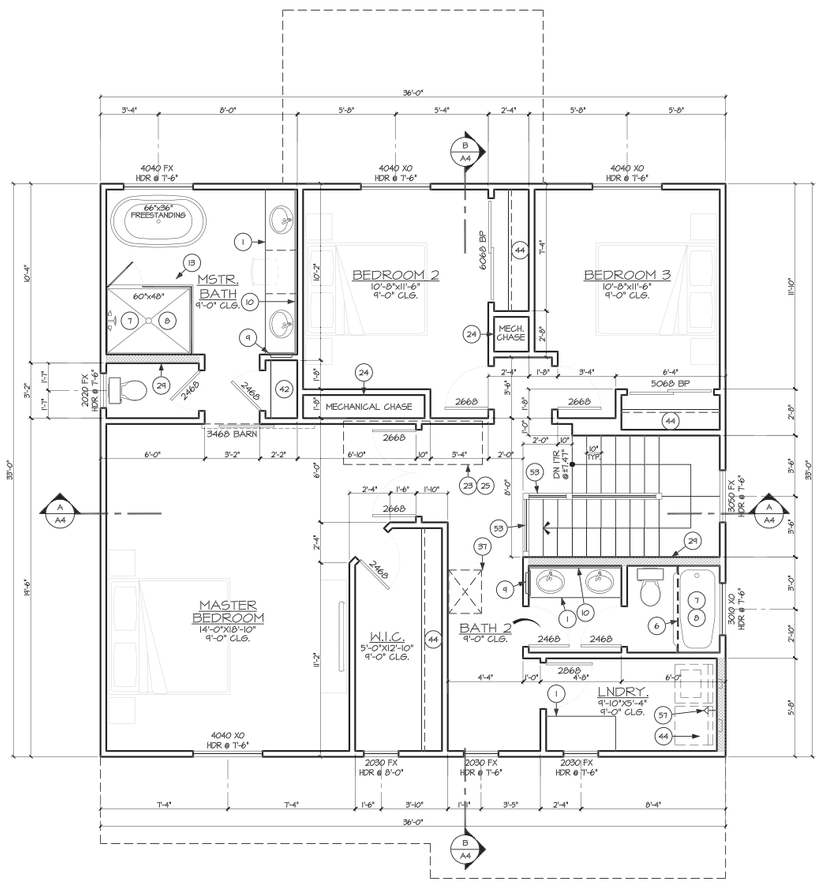
SHEET NO.

A1



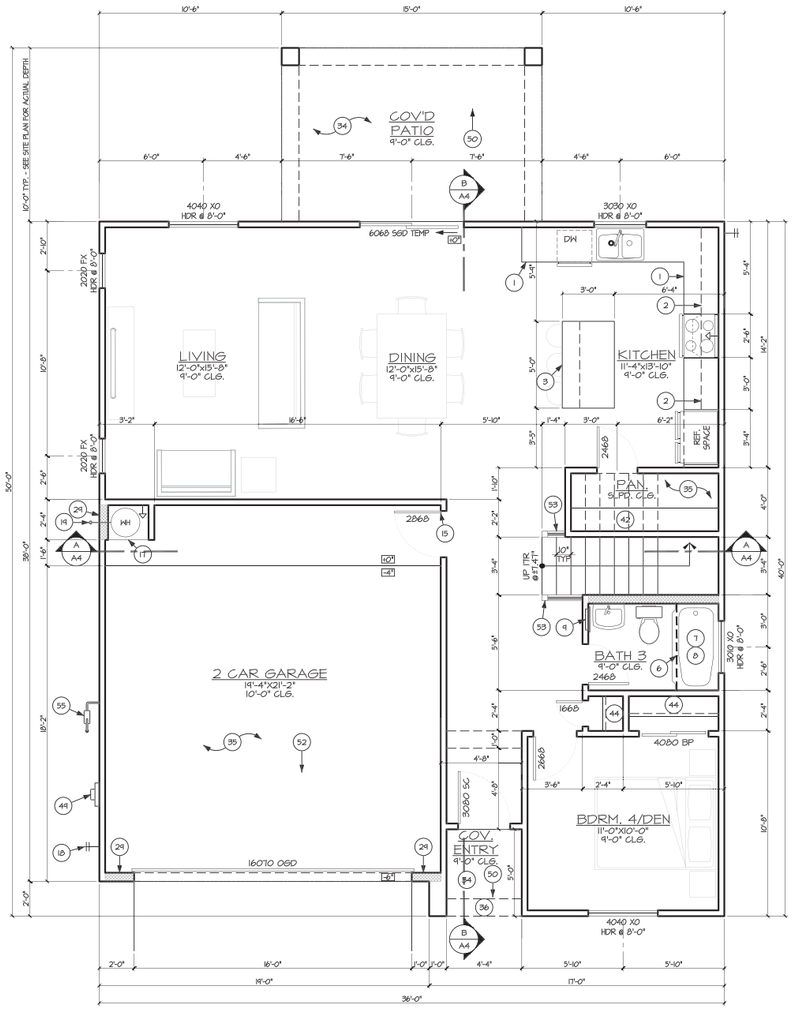
OPT. SIDE PATIO

1/4"=1'-0"



UPPER FLOOR PLAN

1/4"=1'-0"



MAIN FLOOR PLAN

1/4"=1'-0"

AREA CALC'S.

LIVABLE AREAS:	
MAIN LIVABLE	951 SQ.FT.
UPPER LIVABLE	1,121 SQ.FT.
TOTAL LIVABLE	2,072 SQ.FT.
COVERED AREAS:	
COVERED ENTRY	24 SQ.FT.
REAR COVERED PATIO	150 SQ.FT.
GARAGE:	
2 CAR GARAGE	427 SQ.FT.
TOTAL AREA	2,673 SQ.FT.
TOTAL FOOTPRINT/ROOF AREA	1,552 SQ.FT.

SERENE ESTATES

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16211 North Scottsdale Road, AGA 605
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2120 east southern avenue
apache junction. az 85119
studio...480.326.7543
jmdesignllc@gmail.com

FLOOR PLANS

PLOT DATE: 3-09-21

Rev.	DATE:
1	
2	
3	
4	

PLAN #

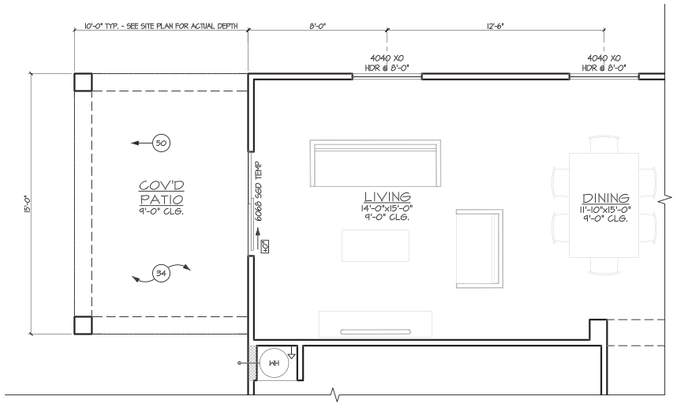
2072

SHEET NO.

A1

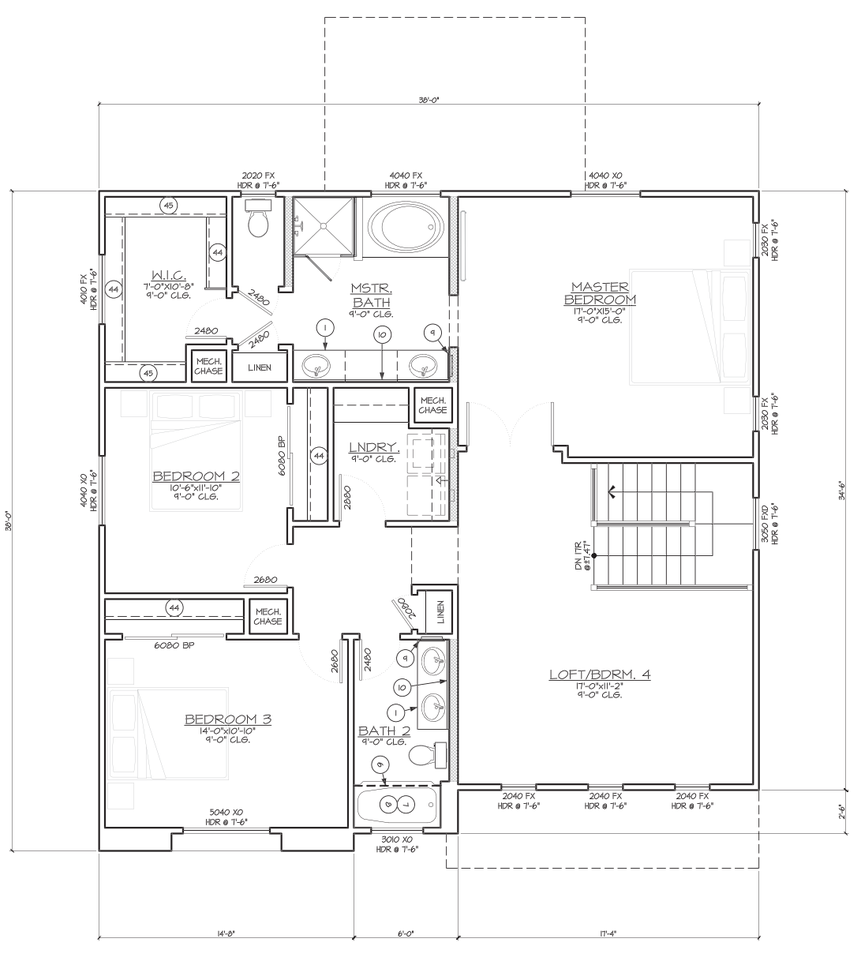
AREA CALC'S.

LIVABLE AREAS:	
MAIN LIVABLE	980 SQ.FT.
UPPER LIVABLE	1,312 SQ.FT.
TOTAL LIVABLE	2,292 SQ.FT.
COVERED AREAS:	
COVERED ENTRY	27 SQ.FT.
REAR COVERED PATIO	150 SQ.FT.
GARAGE:	
2 CAR GARAGE	435 SQ.FT.
TOTAL AREA	2,904 SQ.FT.
TOTAL FOOTPRINT/ROOF AREA	1,592 SQ.FT.



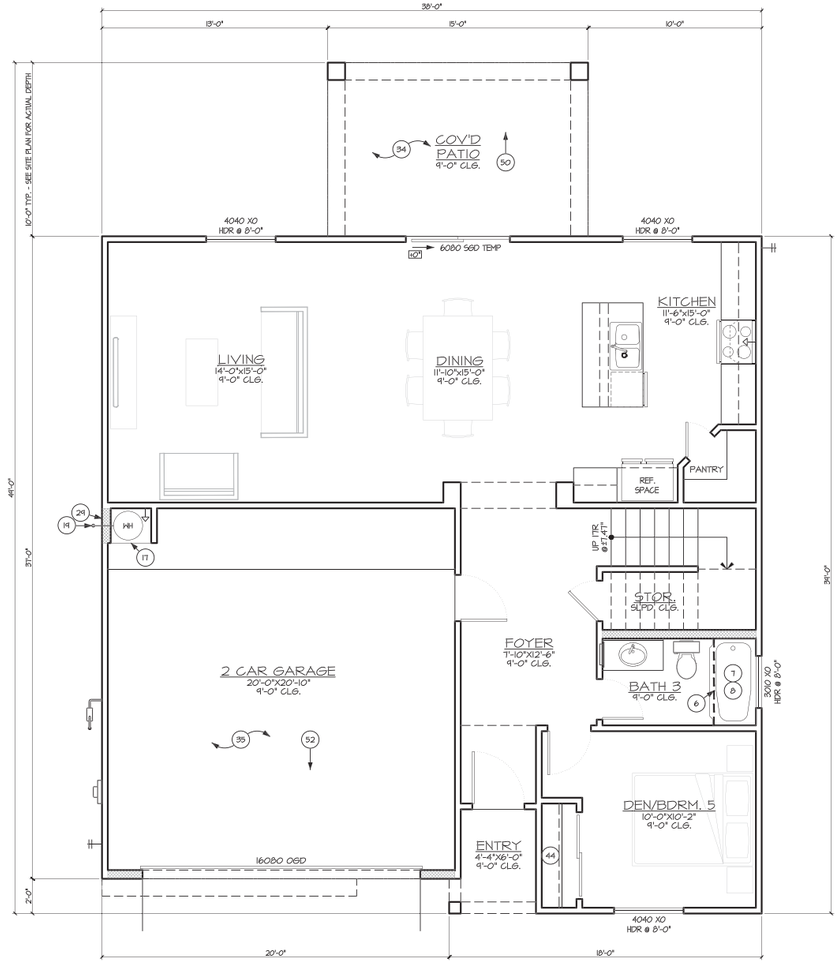
OPT. SIDE PATIO

1/4"=1'-0"



UPPER FLOOR PLAN

1/4"=1'-0"



MAIN FLOOR PLAN

1/4"=1'-0"

SERENE ESTATES

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Scottsdale, Arizona 85254
(602) 466-0959

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2120 east southern avenue
apache junction. az 85119
studio...480.326.7543
jmdesignllc@gmail.com

FLOOR PLANS

PLOT DATE: 3-09-21

Rev.	DATE:
1	
2	
3	
4	

PLAN #

2292

SHEET NO.

A1

LEGAL DESCRIPTION

A PARCEL OF LAND BEING ALL OF LOT 1 AS SHOWN ON THE MINOR LAND DIVISION MAP OF TRACT A OF SERENE HOMES RECORDED IN BOOK 953, PAGE 1, MARICOPA COUNTY RECORDS AS CONVEYED TO CAPITAL INVESTMENTS, LLC BY DEED OF RECORD INSTRUMENT NUMBER 2017-0968329, MARICOPA COUNTY RECORDS (MCR) AND LYING WITHIN THE NORTHWEST CORNER OF SECTION 28, TOWNSHIP 1 SOUTH, RANGE 5 EAST OF THE GILA & SALT RIVER MERIDIAN, CITY OF CHANDLER, MARICOPA COUNTY ARIZONA AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID LOT 1 FROM WHICH POINT A SOUTHEAST CORNER THEREOF BEARS N89°36'21"E A DISTANCE OF 196.87 FEET;

THENCE ALONG THE RIGHT-OF-WAY LINE OF AN ALLEY THE FOLLOWING THREE (3) COURSES AND DISTANCES

1) N0°27'37"W A DISTANCE OF 354.69 FEET;

2) N47°57'44"E A DISTANCE OF 19.91 FEET;

3) S83°36'56"E A DISTANCE OF 379.74 FEET TO A POINT ON THE WEST RIGHT-OF-WAY LINE OF HARTFORD STREET;

THENCE S0°28'41"E, ALONG SAID WEST RIGHT-OF-WAY LINE, A DISTANCE OF 134.06 FEET TO THE NORTHEAST CORNER OF LOT 2 AS SHOWN ON SAID MINOR LAND DIVISION MAP;

THENCE ALONG THE PERIMETER OF SAID LOT 2 THE FOLLOWING THREE (3) COURSES AND DISTANCES:

1) S89°29'40"W A DISTANCE OF 92.14 FEET;

2) S55°50'54"W A DISTANCE OF 123.79 FEET;

3) S0°28'41"E A DISTANCE OF 120.07 FEET TO A POINT ON THE NORTH RIGHT-OF-WAY LINE OF GALVESTON STREET;

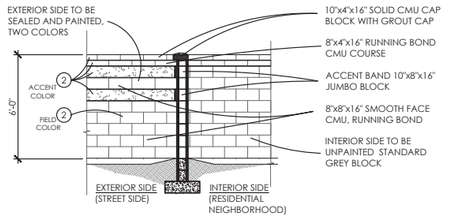
THENCE S89°36'21"W, ALONG SAID NORTH RIGHT-OF-WAY LINE, A DISTANCE OF 196.87 FEET TO THE POINT OF BEGINNING.

THE ABOVE DESCRIBED PARCEL CONTAINS 102,341.18 S.F. (2.3494 ACRES) OF LAND, MORE OR LESS INCLUDING ANY EASEMENTS OF RECORD.

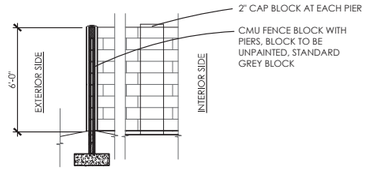
SITE SCREEN WALL SCHEDULE

1/4" - 1'-0"

WALL TYPE [A] 6'-0" WALL AT ENTRY



WALL TYPE [B] 6'-0" FENCE BLOCK WALL



SITE SCREEN WALL NOTES

PARKING SCREEN WALLS ARE TO BE 36"/48"/72" AS OCCURS ABOVE PAVED/LANDSCAPE AREA OR HIGHEST FINISHED GRADE OF PARKING AREA OR STREET CURB, WHICHEVER IS HIGHER

CONTRACTOR TO COORDINATE STEPPED FOOTINGS WITH CIVIL AND STRUCTURAL DRAWINGS, PROVIDE STEPS AT 2'-8" DECORATIVE PIERS.

PROVIDE WEEPS, OPENINGS IN WALLS AS REQUIRED, SEE CIVIL DRAWINGS

ALL CELLS BELOW GRADE TO BE GROUTED SOLID

SEE PLANS, CIVIL AND STRUCTURAL FOR STEPS, FOOTINGS, ETC.

1 site screen wall schedule
scale: 1/4" - 1'-0"

A1.2

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this plan/site plan has been prepared without the benefit of a survey. depictions may not be accurate or fully reflect all dimensions, data, etc. which may affect the design and usability of this site. all design shown here is strictly conceptual.

august 21, 2020 schematic design
august 31, 2020 design development
september 04, 2020 city submittal

CAPITAL INVESTMENTS

serene homes
620 n. hartford street,
chandler, arizona

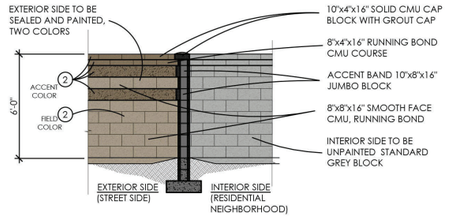


FINN architects, llc
1810 west loemann drive, queen creek, arizona 85142
finnarchitects.com
(480-206-8229)

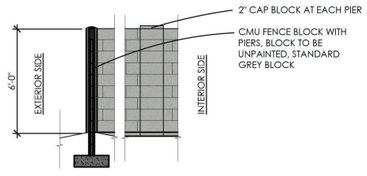
SITE SCREEN WALL SCHEDULE

1/4" - 1'-0"

WALL TYPE [A] 6'-0" WALL AT ENTRY



WALL TYPE [B] 6'-0" FENCE BLOCK WALL



SITE SCREEN WALL NOTES

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PROVIDE WEEPS, OPENINGS IN WALLS AS REQUIRED, SEE CIVIL DRAWINGS

ALL CELLS BELOW GRADE TO BE GROUTED SOLID

SEE PLANS, CIVIL AND STRUCTURAL FOR STEPS, FOOTINGS, ETC.

1 site screen wall schedule
scale: 1/4" - 1'-0"

A1.2

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august 21, 2020
schematic design

august 31, 2020
design development

CAPITAL INVESTMENTS

serene homes
620 n. hartford street,
chandler, arizona



FINN architects, llc
1810 west loemann drive, queen creek, arizona 85142
finnarchitects.com
(480-206-8229)

SERENE ESTATES

COLOR SELECTION CHART

ROOF: EAGLE (OR SIMILAR)
PAINT: SHERWIN WILLIAMS (OR SIMILAR)
STONE: CORONADO (OR SIMILAR)

ORIGINAL: SEPTEMBER 21, 2020

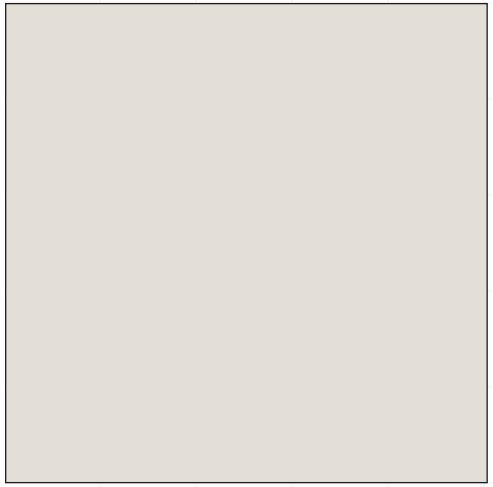
	SCHEMES 1-3 'A' CONTEMPORARY			SCHEMES 4-6 'B' FARMHOUSE		
SCHEME #	**1**	**2**	**3**	**4**	**5**	**6**
BASE STUCCO	SW 7670 GRAY SHINGLE	SW 7757 HIGH REFLECTIVE WHITE	SW 7627 WHITE HERON	SW 6003 PROPER GRAY	SW 7658 GRAY CLOUDS	SW7669 SUMMIT GRAY
POPOUTS, RECESSES, HEADERS, BEAMS	SW7028 INCREDIBLE WHITE	SW 9170 ACIER	SW 7505 MANOR HOUSE	SW 7019 GAUNTLET GRAY	SW7566 WESTHIGHLAND WHITE	SW7674 PEPPERCORN
FASCIA, EAVES, GARAGE	SW7625 MOUNT ETNA	SW 7048 URBANE BRONZE	SW 7505 MANOR HOUSE	SW 7019 GAUNTLET GRAY	SW7566 WESTHIGHLAND WHITE	SW7674 PEPPERCORN
SIDING	N/A	N/A	N/A	SW 7665 WALL STREET	SW7566 WESTHIGHLAND WHITE	SW7674 PEPPERCORN
SHUTTERS	N/A	N/A	N/A	SW7615 SEA SERPENT	SW6251 OUTERSPACE	SW2837 AURORA BROWN
FRONT ENTRY DOOR	SW7625 MOUNT ETNA	SW 6515 LEISURE BLUE	SW 2803 ROOKWOOD TERRA COTTA	SW7615 SEA SERPENT	SW6251 OUTERSPACE	SW2837 AURORA BROWN
TILE ROOF	4503 SIERRA MADRE	4595 DARK CHARCOAL	4503 SIERRA MADRE	5699 CHARCOAL RANGE	5503 SIERRA MADRE	5503 SIERRA MADRE
BRICK	N/A	N/A	N/A	WIRECUT WOLF GRAY	WIRECUT WOLF GRAY	WIRECUT WOLF GRAY
WINDOW FRAMES	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE



ENTRY DOOR



ROOFING



POPOUTS, RECESSES,
HEADERS, BEAMS



BASE STUCCO
COLOR



FASCIA, EAVES, GARAGE

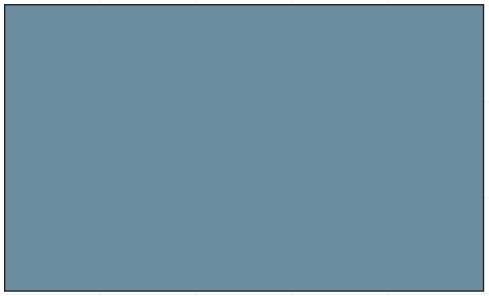
SERENE ESTATES

Chandler, Arizona
MOUNTAIN TOP BUILDERS, LLC
09/21/20

For exact color refer to manufacturer actual samples.

SCHEME 1

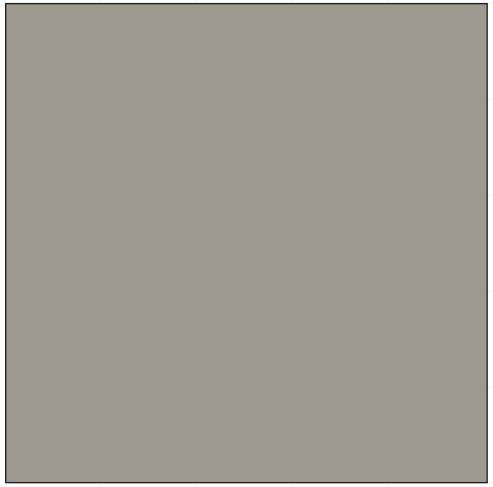
'A' Elevations Only
Contemporary



ENTRY DOOR



ROOFING



POPOUTS, RECESSES,
HEADERS, BEAMS



BASE STUCCO
COLOR



FASCIA, EAVES, GARAGE

SERENE ESTATES

Chandler, Arizona
MOUNTAIN TOP BUILDERS, LLC
09/21/20

For exact color refer to manufacturer actual samples.

SCHEME 2

'A' Elevations Only
Contemporary



ENTRY DOOR



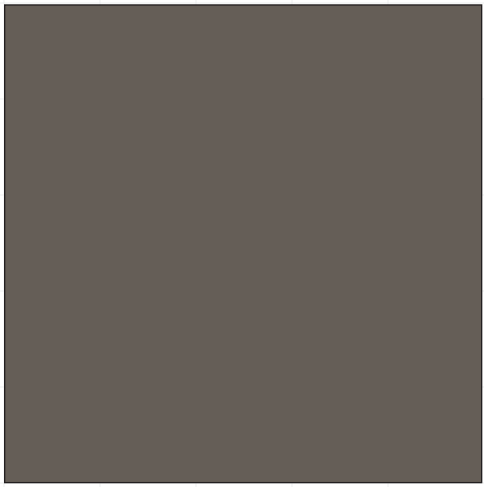
ROOFING



POPOUTS, RECESSES,
HEADERS, BEAMS



BASE STUCCO
COLOR



FASCIA, EAVES, GARAGE

SERENE ESTATES

Chandler, Arizona
MOUNTAIN TOP BUILDERS, LLC
09/21/20

For exact color refer to manufacturer actual samples.

SCHEME 3

'A' Elevations Only
Contemporary



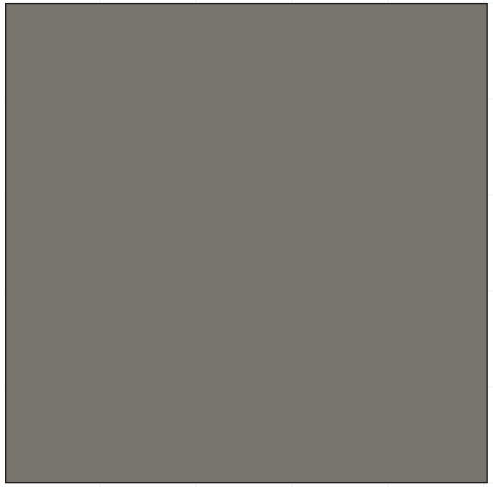
ENTRY DOOR, SHUTTERS



ROOFING



SIDING



POPOUTS, FASCIA, EAVES,
GARAGE, HEADERS, BEAMS



BASE STUCCO
COLOR



BRICK

SERENE ESTATES

Chandler, Arizona
MOUNTAIN TOP BUILDERS, LLC
09/21/20

For exact color refer to manufacturer actual samples.

SCHEME 4

'B' Elevations Only
Farmhouse



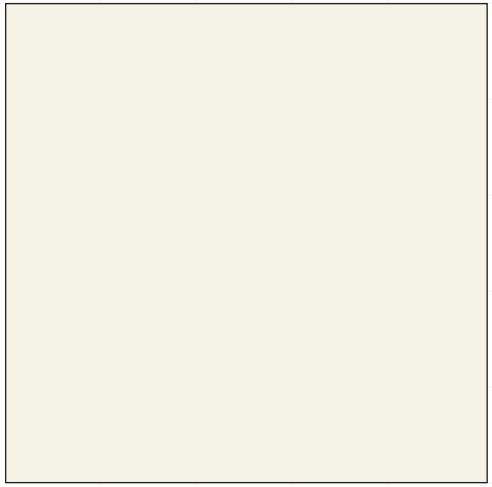
ENTRY DOOR, SHUTTERS



ROOFING



SIDING



POPOUTS, FASCIA, EAVES,
GARAGE, HEADERS, BEAMS



BASE STUCCO
COLOR



BRICK

SERENE ESTATES

Chandler, Arizona
MOUNTAIN TOP BUILDERS, LLC
09/21/20

For exact color refer to manufacturer actual samples.

SCHEME 5

'B' Elevations Only
Farmhouse



ENTRY DOOR, SHUTTERS



ROOFING



SIDING



POPOUTS, FASCIA, EAVES,
GARAGE, HEADERS, BEAMS



BASE STUCCO
COLOR



BRICK

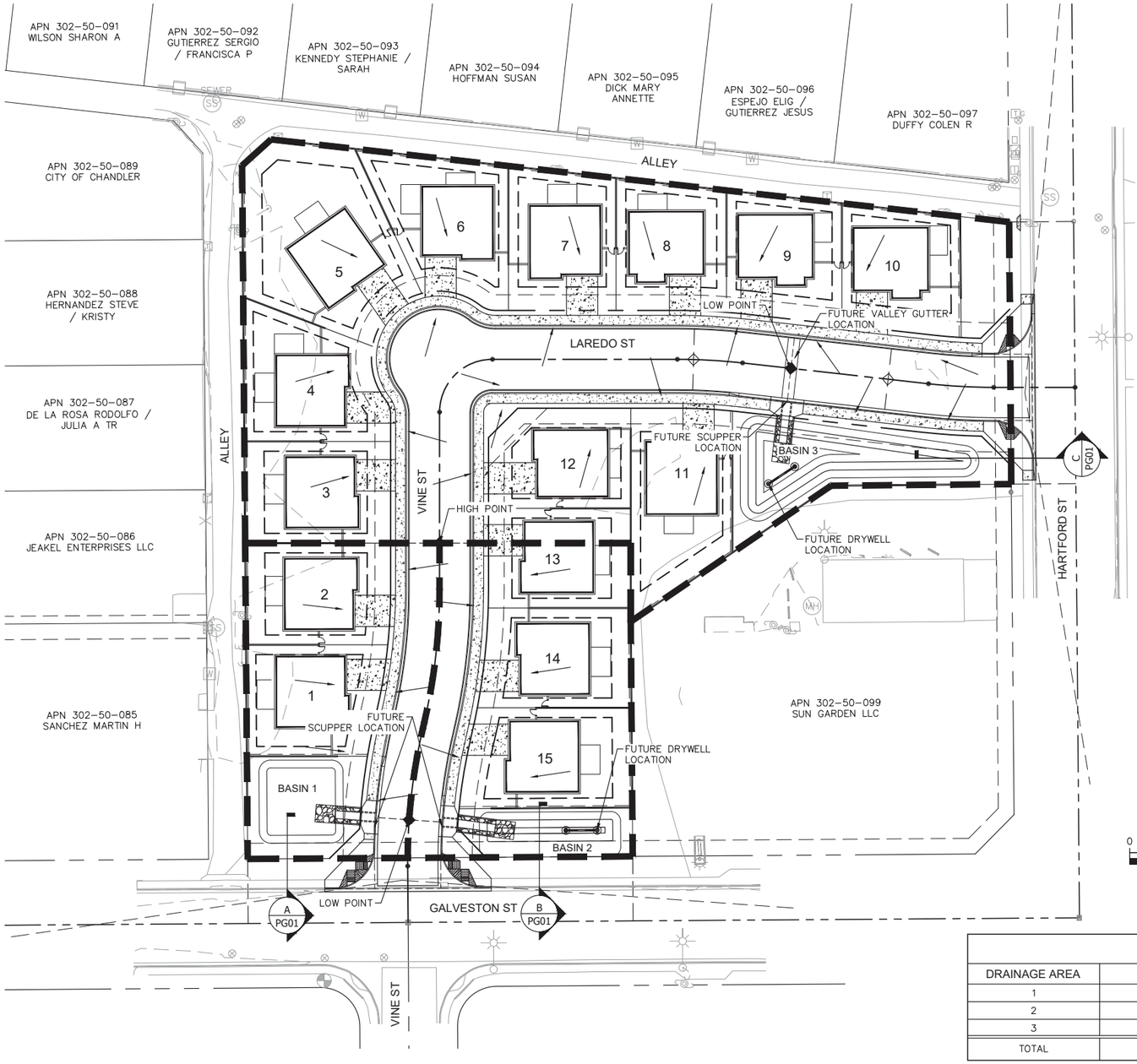
SERENE ESTATES

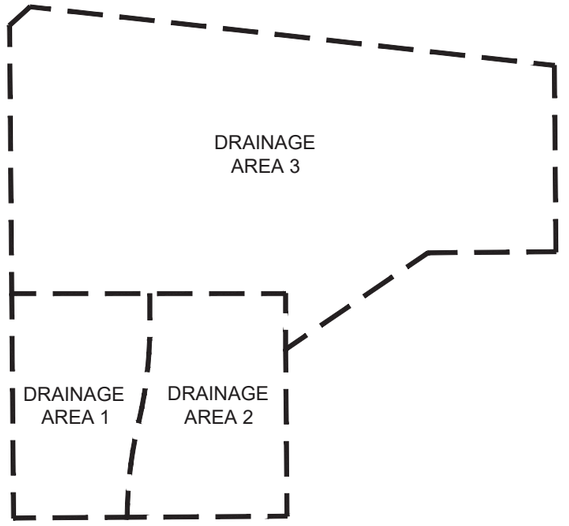
Chandler, Arizona
MOUNTAIN TOP BUILDERS, LLC
09/21/20

For exact color refer to manufacturer actual samples.

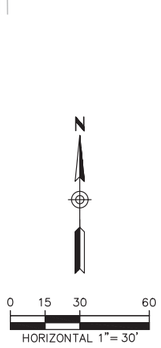
SCHEME 6

'B' Elevations Only
Farmhouse





KEY MAP



RETENTION CALCULATIONS:

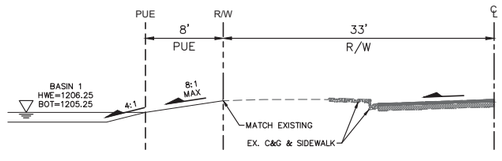
THIS PROJECT FALLS WITHIN THE GALVESTON BASIN AREA FOR THE CITY OF CHANDLER. AS SUCH, THE RAINFALL INTENSITY IS GIVEN BY C.O.C. TDM3 TABLE 6.8 TO BE 1.2". THE REQUIRED RETENTION VOLUME WAS DERIVED AS SHOWN IN THE CALCULATIONS BELOW.

$V_R = C \frac{P}{12} A$ = 7,676 CF (10% INCREASE = 8,443 CF)

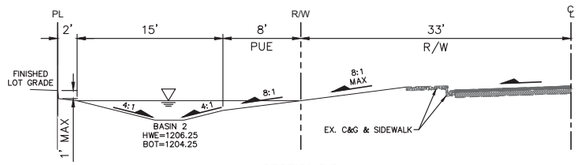
C = 0.75
P = 1.20"
A = 102,341 SF

V_P = 9,065 CF

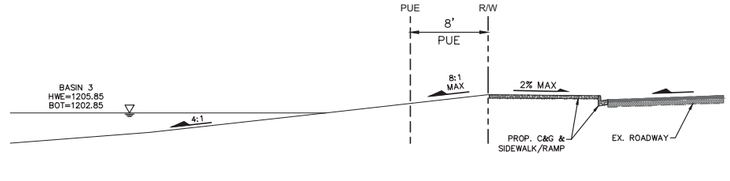
RETENTION BASIN TABLE				
DRAINAGE AREA	AREA	VOLUME REQUIRED	BASIN DEPTH	VOLUME PROVIDED
1	14,815 SF	1,222 CF	1'	1,495 CF
2	16,861 SF	1,391 CF	2'	1,611 CF
3	70,665 SF	5,830 CF	3'	5,960 CF
TOTAL	102,341 SF	8,443 CF		9,065 CF



SECTION A-A
NTS



SECTION B-B
NTS



SECTION C-C
NTS

PGD01

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august 21, 2020
schematic design
august 31, 2020
design development

CAPITAL INVESTMENTS

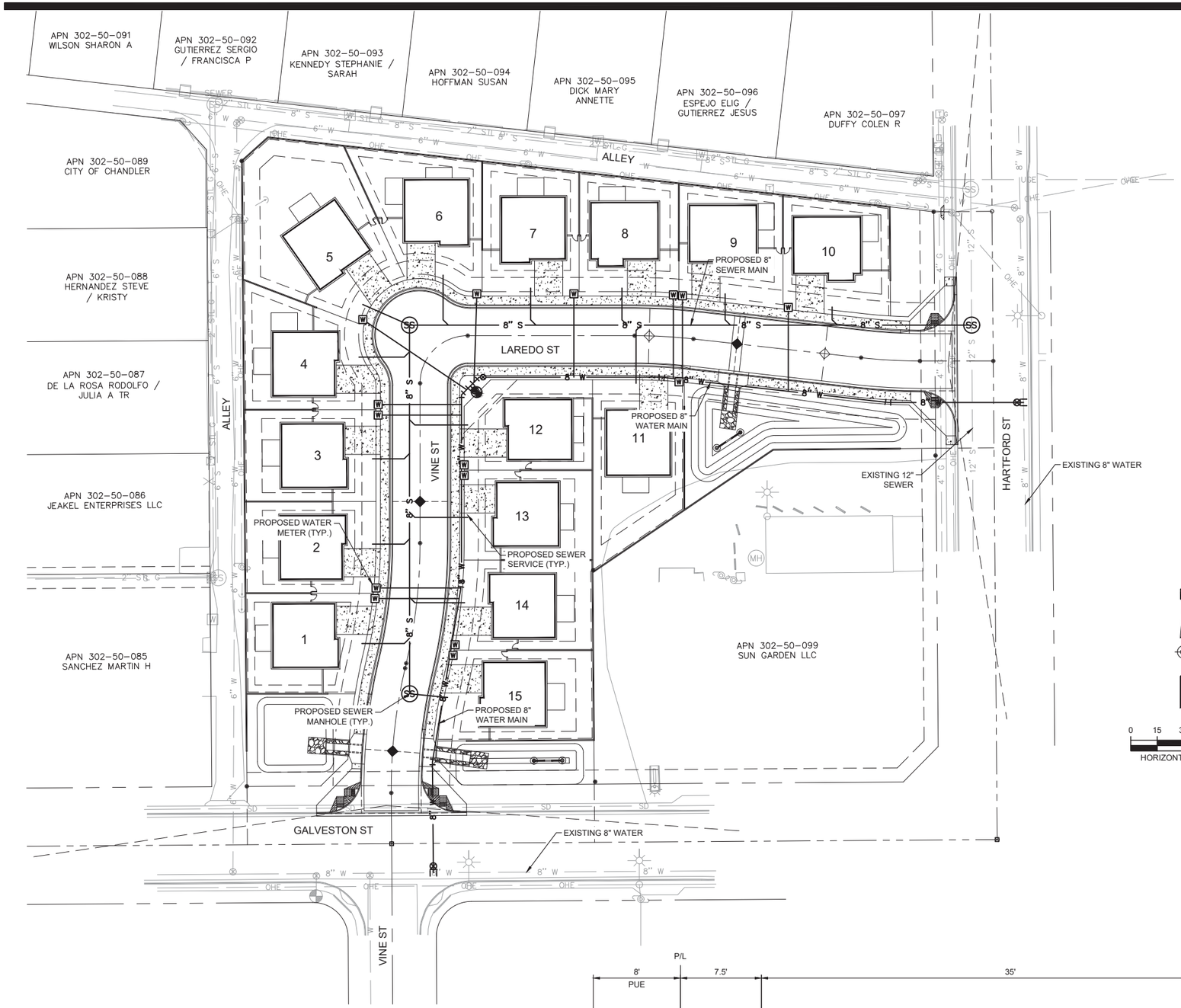
RPA RITOCH-POWELL & Associates

serene estates
preliminary grading exhibit
620 n. hartford street,
chandler, arizona

PRELIMINARY FOR BIDDING PROPOSES ONLY.
NOT FOR CONSTRUCTION

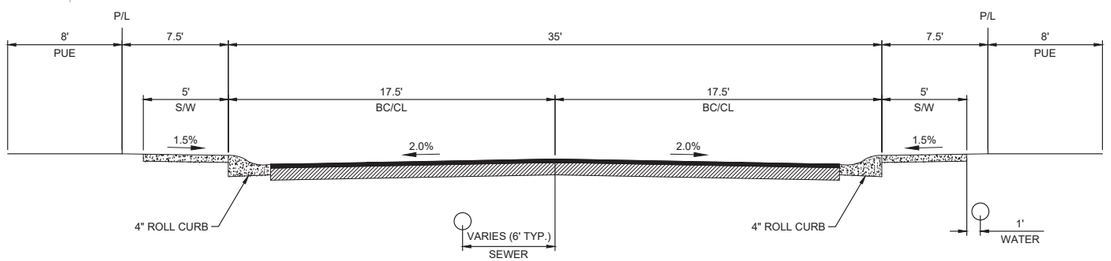
FINN architects, llc
1810 west loemann drive, queen creek, arizona 85142
finnarchitects.com
(480-206-8229)

UT01



LEGEND

- TAPPING SLEEVE AND VALVE
- WATER VALVE
- WATER METER
- SANITARY SEWER MANHOLE
- SANITARY SEWER SERVICE



TYPICAL LOCAL PRIVATE STEET
N.T.S
(LOOKING NORTH & EAST)

the architectural design, conception and data presented herein represents an instrument of service provided in connection with the design build agreement for the exclusive use of FINN architects, llc. any other use or release or these drawings may result in civil damages.

this plan/site plan has been prepared without the benefit of a survey. depictions may not be accurate or fully reflect all dimensions, data, etc. which may affect the design and usability of this site. all design shown here is strictly conceptual.

august 21, 2020
schematic design
august 31, 2020
design development

CAPITAL INVESTMENTS

RPA RITOCH-POWELL & Associates

serene estates
preliminary utility exhibit
620 n. hartford street,
chandler, arizona

PRELIMINARY FOR BIDDING PROPOSES ONLY.
NOT FOR CONSTRUCTION

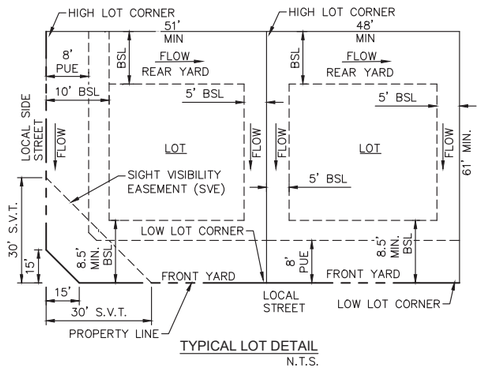
FINN architects, llc
1810 west loemann drive, queen creek, arizona 85142
finnarchitects.com
(480-206-8229)

PRELIMINARY PLAT
SERENE ESTATES SUBDIVISION
CHANDLER, ARIZONA

A PORTION OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 28, TOWNSHIP 1 SOUTH , RANGE 5 EAST OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA

LEGEND

- EXISTING FENCE
- EXISTING STORM DRAIN
- EXISTING IRRIGATION PIPE
- EXISTING OVERHEAD ELECTRIC
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING STORM DRAIN
- EXISTING TELEPHONE SERVICE
- EXISTING CABLE SERVICE
- EXISTING UNDERGROUND ELECTRIC
- EXISTING GAS LINE
- EXISTING POWER POLE
- EXISTING SIGN
- EXISTING JUNCTION BOX (JB)
- EXISTING WATER METER (W)
- EXISTING SEWER MANHOLE (SS)
- EXISTING STORM DRAIN MANHOLE (SD)
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING LIGHT
- EXISTING OVERHEAD LIGHT
- HANDHOLE
- BRASS CAP/ALUMINUM CAP
- SECTION LINE
- ROW LINE
- PROPERTY LINE
- EASEMENT/BUILDING SETBACK LINE
- GRADE BREAK
- GRADE CHANGE
- 1040 PROPOSED CONTOUR LINE
- 1040 EXISTING CONTOUR LINE
- FLOW ARROW
- FG XX.XX PROPOSED FINISHED GRADE ELEVATION
- EG XX.XX EXISTING GROUND ELEVATION
- PROPOSED STORMDRAIN/CULVERT PIPE
- PROPOSED WATER LINE
- PROPOSED WATER HARVESTING LINE
- PROPOSED SEWER LINE
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER METER (W)
- PROPOSED SEWER MANHOLE (SS)
- PROPOSED STORM DRAIN MANHOLE



TYPICAL LOT DETAIL
N.T.S.

PHASING OF LOTS ONLY:

1. PHASE 1 IS LOTS 1–5
2. PHASE 2 IS LOTS 6–10
3. PHASE 3 IS LOTS 11–15

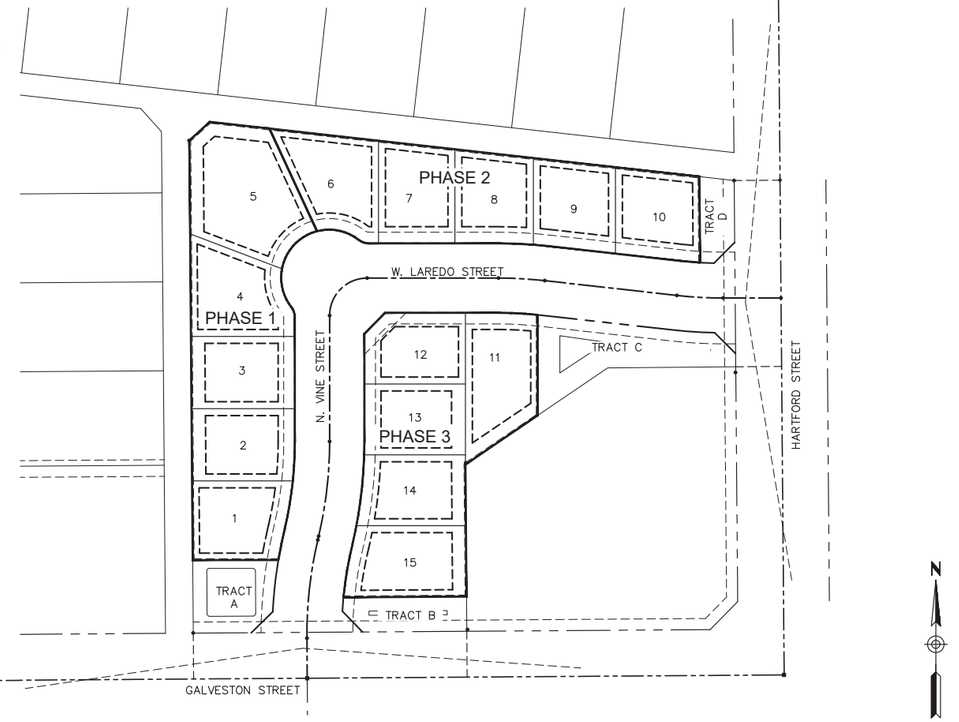
NOTE:
INFRASTRUCTURE WILL BE CONSTRUCTED ALL AT ONCE. ONLY HOMES WILL BE PHASED.

SETBACKS

FRONT: 8'–6" FEET MIN. (*)
SIDE(S): 5 FEET MIN.
REAR: 10 FEET MIN.
REAR (A): 5 FEET MIN. (**)

* DRIVEWAY LENGTH: 20 FEET MIN. CLEAR FROM BACK OF SIDEWALK TO GARAGE ENTRY/DOOR

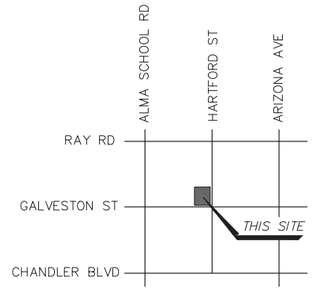
** REAR (A) ON LOTS 1,4,6,7,8,9,10 AND 12 ONLY



N. ¼ CORNER
SEC. 28, T1S, R5E
FND BRASS CAP IN HH
N=844323.59
E=720360.37

W ¼ CORNER
SEC. 28, T1S, R5E
FND BRASS CAP IN HH
N=841662.42
E=717694.63

SHEET INDEX MAP
SCALE: 1"=50'



VICINITY MAP
N.T.S.

NOTE: VISIBILITY EASEMENT RESTRICTIONS: ANY OBJECT, WALL, STRUCTURE, MOUND OR LANDSCAPING (MATURE) OVER 24" IN HEIGHT IS NOT ALLOWED WITHIN THE EASEMENT EXCEPT TREES TRIMMED TO NOT LESS THAN 6' ABOVE GROUND. TREES SHALL BE SPACED NOT LESS THAN 8' APART.

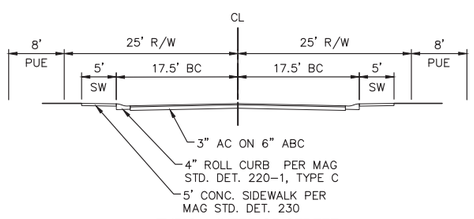
NOTES:

A — X = 10' FOR ALLEYS
15' FOR LOCAL-LOCAL INTERSECTIONS,
20' FOR ALL OTHER INTERSECTIONS,
PER MUNICIPAL CODE CHAPTER 48-10.2

B — GROUND COVER, FLOWERS, AND GRANITE LESS THAN 2' (MATURE) IN HEIGHT AND /OR TREES WITH BRANCHES NOT LESS THAN 6' ABOVE GROUND IN THIS AREA.
TREES SHALL NOT BE SPACED LESS THAN 8' APART.
PER MUNICIPAL CODE CHAPTER 35-2204

SEE STANDARD DETAIL NO. C-246, C-247 AND C-248 FOR SIGHT DISTANCE REQUIRED AT DRIVEWAYS AND INTERSECTIONS.

SIGHT VISIBILITY EASEMENT DETAIL
N.T.S.



TYPICAL INTERIOR STREET
N.T.S.

DEVELOPER/OWNER:
CAPITAL INVESTMENTS, LLC
OWNER: BLAKE JENSEN AND ROB HENKEL
ATTN: KELLY JENSEN
2857 E. SANDY COURT
GILBERT, ARIZONA 85297
PHONE: 480-459-0353
KJSELLSAZ@GMAIL.COM

ENGINEER / SURVEY
RITOCH-POWELL & ASSOCIATES
63 E MAIN ST, STE 502
MESA, AZ 85201
PHONE: 480-539-7497
ENGINEER: JOHN CATT, PE
PROJECT MGR: JOHN CATT, PE
EMAIL: JCATT@RPAENG.COM

LAND USE TABLES

GROSS AREA	102,341.18 SF	2.349 AC
NET AREA	74,123.22 SF	1.702 AC
AREA OF TRACTS	12,004.88 SF	0.276 AC
AREA OF ROW	28,217.96 SF	0.648 AC
AREA OF LOTS	62,118.34 SF	1.426 AC
TOTAL NUMBER OF LOTS	15	
AVERAGE AREA PER LOT	4,141.22 SF	0.095 AC
EXISTING ZONING	C-1	
MINIMUM LOT AREA	3612.83 SF	0.083 AC

TRACT USES

TRACT NAME	AREA(SF)	AREA (AC)	USE
TRACT A	3,063.88	0.070	DRAINAGE, LANDSCAPE, AND OPEN SPACE
TRACT B	2,237.86	0.051	DRAINAGE, LANDSCAPE, AND OPEN SPACE
TRACT C	5,181.61	0.119	DRAINAGE, LANDSCAPE, AND OPEN SPACE
TRACT D	1,521.53	0.035	LANDSCAPE, AND OPEN SPACE

UTILITY SERVICES

SEWER	CITY OF CHANDLER
WATER	CITY OF CHANDLER
GAS	SOUTHWEST GAS
ELECTRICITY	APS
TELEPHONE	CENTURYLINK
POLICE	CITY OF CHANDLER
FIRE	CHANDLER FIRE DEPARTMENT
SOLID WASTE	CITY OF CHANDLER

BENCHMARKS:

BENCHMARK NO.1 - COC BM#28A
SECTION 28, T1S, R5E, CITY OF CHANDLER BRASS CAP FLUSH AT THE INTERSECTION OF MONTEREY ST. AND IOWA ST.; ONE HALF MILE NORTH OF CHANDLER BLVD. AND 2100' WEST OF ARIZONA AVE.
(NAVD88) ELEVATION=1208.30

BENCHMARK NO.2 - COC BM#29
SECTION 29, T1S, R5E, 3" CITY OF CHANDLER BRASS CAP IN CONCRETE FLUSH BETWEEN CHANDLER BLVD. AND RAY RD.; 510' WEST OF ALMA SCHOOL RD AT INTERSECTION OF CHIPPEWA ST AND GALVESTON ST
(NAVD88) ELEVATON=1202.43

BASIS OF BEARING:

FOR THIS PROJECT IS N00°13'19"W FOR THE WEST LINE OF THE NORTHWEST QUARTER OF SECTION 28, TOWNSHIP 1 SOUTH, RANGE 5 EAST OF THE GILA & SALT RIVER MERIDIAN AS CALCULATED FROM AN PLSS SUBDIVISION RECORD OF SURVEY MARICOPA COUNTY GEODETIC DENSIFICATION AND CADASTRAL SURVEY RECORDED IN BOOK 669, PAGE 47, MARICOPA COUNTY RECORDS.

FLOODPLAIN STATEMENT:

PER FEMA FLOOD INSURANCE RATE MAP NO. 04013C2730M, DATED NOVEMBER 4, 2015, THE SUBJECT PROPERTY IS LOCATED IN ZONE X. ZONE X IS DESCRIBED AS: AREAS OF 0.2% ANNUAL CHANCE OF FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.

REQUIRED RETENTION:

THIS PROJECT FALLS WITHIN THE GALVESTON BASIN AREA FOR THE CITY OF CHANDLER, AS SUCH, THE RAINFALL INTENSITY IS GIVEN BY C.O.C. TDM3 TABLE 6.8 TO BE 1.2". THE REQUIRED RETENTION VOLUME WAS DERIVED AS SHOWN IN THE CALCULATIONS BELOW.

V_R = C X P/12 X A = 7,676 CF (10% INCREASE = 8,443 CF)
WHERE: C=0.75
P=1.20"
A=102,341 SF
V_P = 9,065 CF

NOTES:

1. THE IMPROVEMENTS SHOWN ON THIS PLAT WILL NOT BE FULLY APPROVED BY THE CITY AND THE CERITIFICATE OF OCCUPANCY OR ACCEPTANCE WILL NOT BE ISSUED UNTIL THE OVERHEAD UTILITY LINE UNDERGROUNDING REQUIREMENT HAS BEEN SATISFIED.
2. THE IMPROVEMENTS SHOWN ON THE SET OF PLANS WILL NOT BE FULLY APPROVED BY THE CITY AND THE CERTIFICATE OF OCCUPANCY WILL NOT BE ISSUED UNTIL THE IRRIGATION FACILITY UNDERGROUNDING REQUIREMENT HAS BEEN SATISFIED.
3. THE FINAL PLAT FOR THIS SUBDIVISION WILL NOT BE APPROVED OR RECORDED UNTIL A RECLAIMED WATER USE AGREEMENT IS EXECUTED BY THE DEVELOPER AND APPROVED BY THE CITY.
4. VISIBILITY EASEMENT RESTRICTIONS: ANY OBJECT, WALL, STRUCTURE, MOUND OR LANDSCAPING (MATURE) OVER 24" IN HEIGHT IS NOT ALLOWED WITHIN THE EASEMENT EXCEPT TREES TRIMMED TO NOT LESS THAN 6' ABOVE GROUND. TREES SHALL BE SPACED NOT LESS THAN 8' APART.

LEGAL DESCRIPTION

A PARCEL OF LAND BEING ALL OF LOT 1 AS SHOWN ON THE MINOR LAND DIVISION MAP OF TRACT A OF SERENE HOMES RECORDED IN BOOK 953, PAGE 1, MARICOPA COUNTY RECORDS AS CONVEYED TO CAPITAL INVESTMENTS, LLC BY DEED OF RECORD INSTRUMENT NUMBER 2017–0968329, MARICOPA COUNTY RECORDS (MCR) AND LYING WITHIN THE NORTHWEST CORNER OF SECTION 28, TOWNSHIP 1 SOUTH, RANGE 5 EAST OF THE GILA & SALT RIVER MERIDIAN, CITY OF CHANDLER, MARICOPA COUNTY ARIZONA AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID LOT 1 FROM WHICH POINT A SOUTHEAST CORNER THEREOF BEARS N89°36'21"E A DISTANCE OF 196.87 FEET;

THENCE ALONG THE RIGHT–OF–WAY LINE OF AN ALLEY THE FOLLOWING THREE (3) COURSES AND DISTANCES

1) N0°27'37"W A DISTANCE OF 354.69 FEET;

2) N47°57'44"E A DISTANCE OF 19.91 FEET;

3) S83°36'56"E A DISTANCE OF 379.74 FEET TO A POINT ON THE WEST RIGHT–OF–WAY LINE OF HARTFORD STREET;

THENCE S0°28'41"E, ALONG SAID WEST RIGHT–OF–WAY LINE, A DISTANCE OF 134.06 FEET TO THE NORTHEAST CORNER OF LOT 2 AS SHOWN ON SAID MINOR LAND DIVISION MAP;

THENCE ALONG THE PERIMETER OF SAID LOT 2 THE FOLLOWING THREE (3) COURSES AND DISTANCES:

1) S89°29'40"W A DISTANCE OF 92.14 FEET;

2) S55°50'54"W A DISTANCE OF 123.79 FEET;

3) S0°28'41"E A DISTANCE OF 120.07 FEET TO A POINT ON THE NORTH RIGHT–OF–WAY LINE OF GALVESTON STREET;

THENCE S89°36'21"W, ALONG SAID NORTH RIGHT–OF–WAY LINE, A DISTANCE OF 196.87 FEET TO THE POINT OF BEGINNING.

THE ABOVE DESCRIBED PARCEL CONTAINS 102,341.18 S.F. (2.3494 ACRES) OF LAND, MORE OR LESS INCLUDING ANY EASEMENTS OF RECORD.

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA 811
Call 811 or click Arizona811.com

NO.	DATE	BY	REVISION

RITOCH-POWELL & Associates
RPA
602-263-1177
www.ritochpowell.com

Registered Professional Land Surveyor
CERTIFICATE NUMBER
57420
JOHN W. CATT
Date Signed 10/31/21
ARIZONA, U.S.A.
EXPIRES 06/30/2023

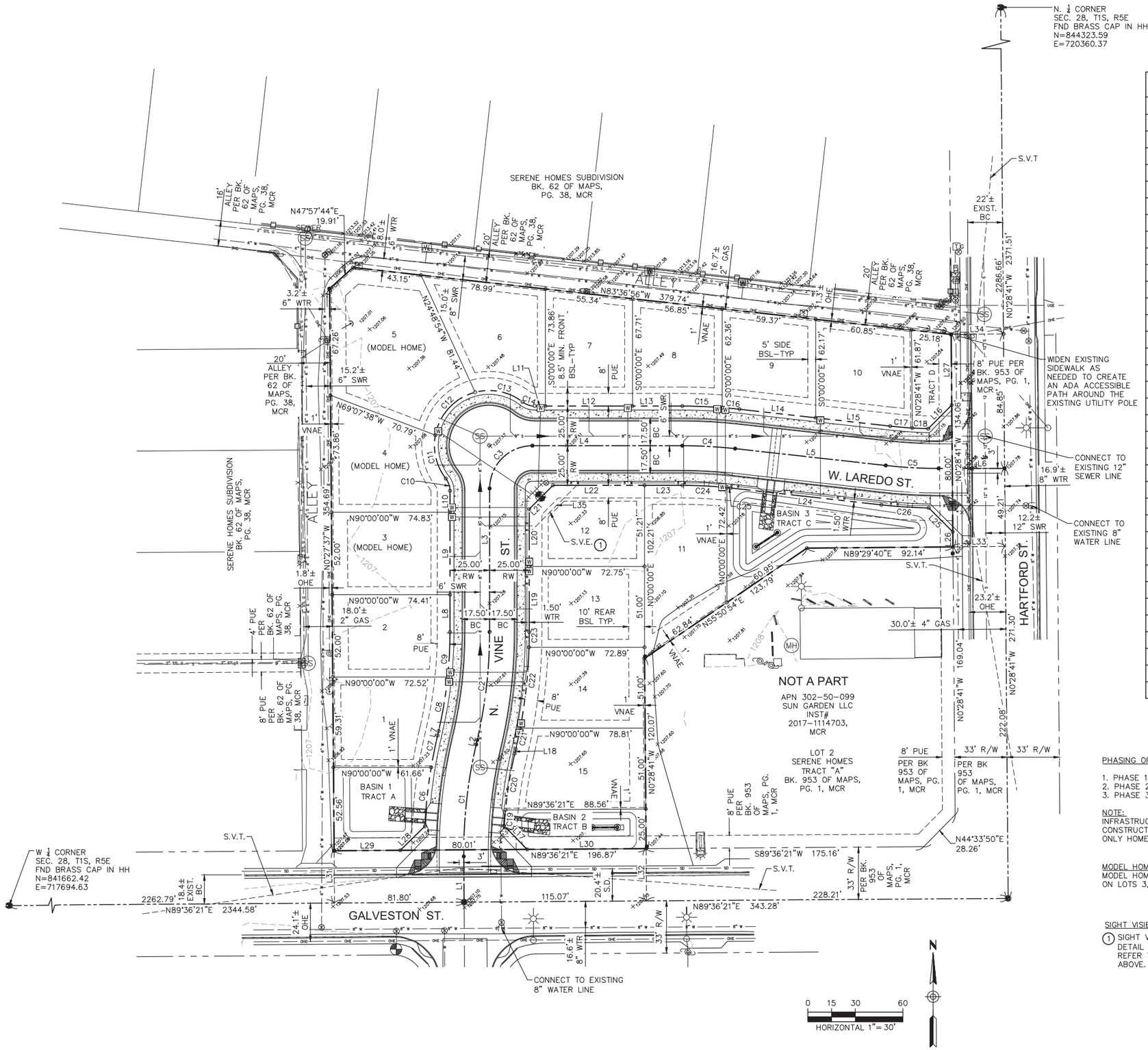
SERENE ESTATES SUBDIVISION
PRELIMINARY PLAT
COVER SHEET
CHANDLER, ARIZONA
MARICOPA COUNTY

JOB NO.:	220076
DESIGN BY:	JB
DRAWN BY:	JB
CHECKED:	JC
DATE:	3/10/21

DWG. PP01
SHEET 01 OF

COC LOG NO. PLT20-0039

DATE: Mar 10, 2021 FILE: J:\2020 Jobs\220076 - Serene Homes Subdivision\CAD Files\Sheets\PreplatPP-01.dwg



LINE TABLE		
LINE	BEARING	LENGTH
L1	S0°28'34"E	28.81'
L2	S13°07'58"W	2.84'
L3	S0°00'00"E	90.61'
L4	N90°00'00"E	94.57'
L5	S83°37'02"E	95.65'
L6	N90°00'00"W	41.59'
L7	S13°07'58"W	2.84'
L8	N0°00'00"E	23.61'
L9	N0°00'00"E	52.00'
L10	N0°00'00"E	13.56'
L11	N90°00'00"E	6.77'
L12	N90°00'00"E	55.00'
L13	N90°00'00"E	31.36'
L14	S83°37'02"E	48.31'
L15	S83°37'02"E	47.34'
L16	N44°54'54"E	21.07'
L17	S44°11'51"E	20.78'
L18	S13°07'58"W	2.84'
L19	N0°00'00"E	41.40'
L20	N0°00'00"E	36.21'
L21	N45°00'00"E	21.21'
L22	N90°00'00"E	57.75'
L23	N90°00'00"E	23.82'
L24	S83°37'02"E	95.65'
L25	S45°07'38"E	21.34'
L26	N0°28'41"W	9.48'
L27	N0°28'41"W	44.57'
L28	N45°35'05"E	21.59'
L29	N89°36'21"E	41.78'
L30	N89°36'21"E	75.08'
L31	S0°23'39"E	33.00'
L32	N0°23'39"W	33.00'
L33	S89°31'26"W	33.00'
L34	N89°31'19"E	33.00'
L35	N45°00'00"E	42.43'

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C1	13°36'32"	300.00'	71.26'
C2	13°07'58"	300.00'	68.76'
C3	90°00'00"	27.00'	42.41'
C4	6°22'58"	300.00'	33.42'
C5	6°22'58"	300.00'	33.42'
C6	6°35'41"	325.00'	37.41'
C7	3°37'18"	325.00'	20.54'
C8	7°12'24"	275.00'	34.59'
C9	5°55'34"	275.00'	28.44'
C10	37°46'54"	12.50'	8.24'
C11	48°16'08"	34.50'	29.06'
C12	64°48'40"	34.50'	39.03'
C13	52°29'01"	34.50'	31.60'
C14	37°46'54"	12.50'	8.24'
C15	4°26'13"	325.00'	25.17'
C16	1°56'45"	325.00'	11.04'
C17	2°55'02"	275.00'	14.00'
C18	2°05'11"	275.00'	10.01'
C19	2°05'29"	275.00'	10.04'
C20	7°31'20"	275.00'	36.10'
C21	2°23'10"	325.00'	13.53'
C22	9°03'13"	325.00'	51.36'
C23	1°41'36"	325.00'	9.60'
C24	5°52'53"	275.00'	28.23'
C25	0°30'05"	275.00'	2.41'
C26	5°17'22"	325.00'	30.00'

LOT AREA		
TRACT OR LOT #	AREA (SF)	AREA (AC)
R/W	28217.96	0.6480
A	3063.89	0.0703
B	2237.86	0.0514
C	5181.61	0.1190
D	1521.53	0.0349
1	3847.91	0.0883
2	3844.59	0.0883
3	3880.20	0.0891
4	4253.50	0.0976
5	6748.70	0.1549
6	4332.35	0.0995
7	3893.17	0.0894
8	3655.06	0.0839
9	3668.74	0.0842
10	3774.08	0.0866
11	4744.64	0.1089
12	3612.83	0.0829
13	3710.53	0.0852
14	3832.46	0.0880
15	4319.58	0.0992
TOTAL	102341.18	2.3494

PHASING OF LOTS ONLY:

1. PHASE 1 IS LOTS 1–5
2. PHASE 2 IS LOTS 6–10
3. PHASE 3 IS LOTS 11–15

NOTE:
INFRASTRUCTURE WILL BE CONSTRUCTED ALL AT ONCE. ONLY HOMES WILL BE PHASED.

MODEL HOMES:
MODEL HOMES WILL BE LOCATED ON LOTS 3,4 AND 5.

SIGHT VISIBILITY EASEMENTS

(1) SIGHT VISIBILITY EASEMENT PER DETAIL ON SHEET PP01 (1 OF 2). REFER TO L35 IN LINE TABLE ABOVE.

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA 811
Call 811 or click ArizonaBlue.com

NO.	DATE	BY	REVISION

RITOCH-POWELL & Associates
RPA
602-263-1177
www.ritochpowell.com

Registered Professional Engineer
JOHN W. CATT
57420
Certificate No.
Date Signed 3/10/21
ARIZONA, U.S.A.
EXPIRES 06/30/2023

SERENE ESTATES SUBDIVISION
PRELIMINARY PLAT
PRELIMINARY PLAT SHEET
MARICOPA COUNTY CHANDLER, ARIZONA

JOB NO.:	220076
DESIGN BY:	JB
DRAWN BY:	JB
CHECKED:	JC
DATE:	3/10/21

DWG. PP02
SHEET 02 OF

COC LOG NO. PLT20-0039

DATE: Mar 10, 2021 FILE: J:\2020 Jobs\220076 - Serene Homes Subdivision\CAD Files\Sheets\PreplatPP-02.dwg

Request Detail Report

2/25/2021
12:04 PM

Request #: **21-02-0576** **Status: Completed** **As Of:** **2/25/2021 12:04 PM**

Requestor

Phone Number:	4808219935	**Util Acct #:**	
Name:	John Biewer	**Business:**	
Address:	420 N EVERGREEN ST		
X Street:			
City, State Zip:	Chandler AZ 85225		
Country:	USA	**Parcel:**	
Building Type:		**Email:**	jbiewer2@hotmail.com
Home Phone:	4808219935	**Work Phone:**	
Phone 1:		**Phone 2:**	

Category:	Planning Admin	**Follow-up Date:**	2/24/2021
Problem:	Citizen Input		
Cause:			
Priority:	Five Day	**Facility:**	
Address:			
Address2:			
Gen Location:			
City:	Chandler	**Parcel Number:**	
State:		**Zip Code:**	**Country:**
Department:		**Building Type:**	
Supervisor:	Catherine Flores	**Location X:**	
Affected Utility:		**Location Y:**	

Scripts

Atten> Lauren Schumann. I just listened to the meeting about Serene Estates. I hope it is approved as is. I have lived in the neighborhood for 20 years, the city for 45. I also work at Hartford Elementary the past eight years, 20 with cusd. We need to breathe new life and ideas into these older neighborhoods. Contrary to some people, there are some two story homes in the neighborhood. Not alot but some. Plus some of there older homes are eyesores. I think it is unrealistic to have new homes with similar lot sizes, etc. Let's see new growth! This project can only help and improve the neighborhood. Thank you.

Comments:

Showed up in queue
Refer to Planning L.S.
Information passed on to Planner.

Michael Fisher + Allison Fisher

We dont support the Serene Estates project I dont want the 2-story built behind our house

601 W. Monterey St
Chandler, AZ 85225

To: Chandler City Council

From: Marc VanHorne

Address: 643 W. Monterey St. Chandler, AZ 85225

Date: 3/16/21

Subject: Serene Estates 2-Story detached townhome project

The Serene Estates project will add over density problems and lower neighbor's home values.

We currently have difficulties within our neighborhood due to three apartment complexes located in the same street. In addition to the social challenges, these apartment complexes bring in, additional police and first responder services will be required due to Hartford Elementary and Chandler High School traffic located along the same street.

Encroaching fifteen detached townhomes in a land parcel where five or six median-sized detached homes fit will bring traffic, coexistence, and quality of life issues to a neighborhood currently moving up. Repeatedly Chandler citizens have asked the local government to stop building apartments because they are ruining our quality of life. Serene Estates is just another "new apartment" building style that attempts to transform a beautiful 1950's historical single-detached home neighborhood into an urban center. The project fails to adapt to the current decor and architecture.

This neighborhood is currently 98% one-story single-family homes. The only exception being two apartment complexes in each corner. It is unfair to steal neighbors home equity by building two-story townhomes.

To: Chandler City Council

From: Katie Moser

Address: 619 N. Sunset dr. Chandler Az 85225

Date: 03/16/21

Subject: Serene Estates 2-Story detached townhome project

The Serene Estates project will add over density problems and lower neighbor's home values.

We currently have difficulties within our neighborhood due to three apartment complexes located in the same street. In addition to the social challenges, these apartment complexes bring in, additional police and first responder services will be required due to Hartford Elementary and Chandler High School traffic located along the same street.

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This neighborhood is currently 98% one-story single-family homes. The only exception being two apartment complexes in each corner. It is unfair to steal neighbors home equity by building two-story townhomes.



To: Chandler City Council
From: Jesus Gutierrez
Address: 615 W Monterey
Date:
Subject: Serene Estates 2-Story detached town home project

I do not support the Serene Estates Project. It will bring down the value of my home.

ITEM 11

City Council Memorandum **Fire Memo No.** N/A

Date: April 19, 2021

To: Mayor and Council

Thru: Joshua H. Wright, Acting City Manager
Thomas Dwiggins, Fire Chief

From: Robin Miller, Fire Management Coordinator

Subject: Resolution No. 5465 authorizing an Intergovernmental Agreement between the City of Chandler and the Gila River Indian Community for the provision of mutual aid services, and authorizing the Fire Chief or designee to execute the agreement

Proposed Motion:

Move City Council pass and adopt Resolution No. 5465, authorizing the City of Chandler to enter into an Intergovernmental Agreement with the Gila River Indian Community for the provision of mutual aid services, and authorizing the Fire Chief or designee to execute the agreement.

Background:

In 1996, the City of Chandler entered into a Mutual Aid Agreement with the Gila River Indian Community, formalizing mutual aid operating procedures between the two entities. Mutual aid differs from automatic aid, in which the closest Fire Department unit responds to emergencies regardless of municipal boundaries. Mutual aid is not an automatic response, but rather a request for assistance from a neighboring department with an active incident.

The mutual aid agreement formalizes the operating procedures and limitations to the assistance that will be provided. With the previous agreement being in excess of 20 years old, this agreement provides updated language and details on when to approve or disapprove mutual aid services and the process of seeking and giving approval.

The term of this agreement commences on the effective date of the contract and continues for five (5) years, or until terminated by a formal act of the parties.

Attachments

Gila River Mutual Aid Agreement
Resolution 5464 v2

INTERGOVERNMENTAL AGREEMENT
BETWEEN
THE CITY OF CHANDLER
AND
GILA RIVER INDIAN COMMUNITY
FOR MUTUAL AID RESPONSE FOR FIRE PROTECTION AND OTHER EMERGENCY SERVICES

AGREEMENT NO. _____

This Intergovernmental Agreement ("Agreement") is entered into _____, 2021 ("Effective Date"), by and between the City of Chandler, for and on behalf of the Chandler Fire Department ("the City"), and Gila River Indian Community ("the Community"), a federally recognized Indian tribe. Throughout this Agreement, the City and the Community individually may be referred to as "Party" and may be referred to collectively as "Parties" to this Agreement.

RECITALS

WHEREAS, the City Manager of Chandler, is authorized and empowered by provisions of the City Charter to execute contracts; and,

WHEREAS, the City is authorized and empowered to enter into intergovernmental agreements for the provision of services or for joint or cooperative action pursuant to Arizona Revised Statutes (A.R.S.) §11-952; and,

WHEREAS, agreements for mutual assistance in fire protection and response to other emergencies have existed between municipalities and governmental jurisdictions; and,

WHEREAS, the safety of the employees of each Participant is paramount; and,

WHEREAS, it is the desire of the municipalities, governmental jurisdictions, agencies and fire districts participating in this Agreement, to continue and improve the nature and coordination of emergency assistance to incidents that threaten the loss of life or property within the geographic boundaries of their respective jurisdictions; and,

WHEREAS, it is further the determination of each of the Parties thereto that the decision to enter into this Mutual Aid Agreement constitutes a fundamental governmental policy of the Parties hereto which is discretionary in nature, and includes the determination of the proper use of the resources available to each of the Parties hereto with respect to the providing of governmental services and the utilization of existing resources of each of the Parties hereto, including the use of equipment and personnel; and,

WHEREAS, this Agreement shall encourage the development of cooperative procedures and protocols, including, but not limited to, the possibility of joint purchasing, coordination of communications, training, health and safety, fire prevention, public education, fire investigations and other activities that will enhance each Participant's ability to fulfill its mission; and,

WHEREAS, it is the desire of the municipalities and governmental jurisdictions to initiate and/or renew a "Mutual Aid Agreement" for fire department services.

AGREEMENT

NOW THEREFORE, in consideration of the mutual promises, inducements, covenants, agreements, conditions and other good and valuable consideration, the receipt and sufficiency which is acknowledged, the Parties agree as follows:

ARTICLE I. PURPOSE

1. **Purpose:**
   All Parties to this Agreement agree that its purpose is to provide for mutual assistance to fires, medical emergencies, hazardous materials incidents, technical rescues and other types of emergency incidents that are within the scope of services provided by fire departments.

2. **Definition:**
   The Parties agree that mutual aid is defined as, any Fire Department emergency response and/or incident mitigation assistance provided by one Party to the other Party when no formal automatic assistance agreement has been instituted. Any mutual aid assistance provided will be the result of a formal request for assistance from one Party to the other Party, as prescribed in this agreement.

3. **Effect on Prior Agreements:**
   The Parties further understand that this Agreement supersedes any previous mutual aid agreements between any of the Parties hereto.

4. **Effect on current Intergovernmental Agreement for the Regional Metropolitan Phoenix Fire Service Automatic Aid Agreement:**
   Any response to a mutual aid jurisdiction or mutual aid response area by a Participant in the current Intergovernmental Agreement for the Regional Metropolitan Phoenix Fire Service Automatic Aid Agreement (Agreement) will not bind any other Participant in the Agreement to provide any assistance in support of the mutual aid request.

ARTICLE II. PARAMETERS FOR ASSISTANCE TO BE PROVIDED

1. Municipalities, governmental jurisdictions, and fire districts joining this discretionary agreement agree, for the purpose of emergency response, that certain formal operating procedures shall be followed in terms of requesting, dispatching and redeploying emergency units and operating at the scene of emergency incidents. At no time, will one Party be required to operate outside of that Parties Standard Operating Procedures (S.O.P.).

2. Upon request for assistance, it is understood and agreed that the Fire Chief or their designee of the Party being requested for assistance shall have the sole responsibility of determining, pursuant to the governmental policy of his/her jurisdiction, the level and amount of resources including equipment and personnel to be devoted in response to the request. Neither Party is in any way liable to the other or to any other person, firm or corporation for the determination to supply or not to supply, or to limit the amount of assistance upon such request following such determination.

3. It is understood and agreed that the assisting fire department units shall operate under the direction of the Fire Chief or other authorized person in command of emergency operations for the jurisdiction requesting assistance. At no time will the assisting units operate in violation of their respective S.O.P.'s.

4. It is understood that the equipment and personnel of the Party providing mutual aid assistance are to be released from service and returned to the Party's jurisdiction by the commanding officer in charge of operations as soon as conditions warrant.

ARTICLE III. REQUEST FOR ASSISTANCE

1. It is understood that at any time a jurisdiction that is outside of the Regional Metropolitan Automatic Aid Response System may exceed their response capabilities. When the Fire Chief or their designee determines, that assistance is needed to mitigate an emergency incident within their jurisdiction, a request for assistance can be made to either Party of this agreement.

2. All requests for mutual aid assistance will follow the process below:

2.1 The requesting jurisdiction will contact the Phoenix Fire Department Regional Dispatch Center (PFDRDC) to request assistance. The request must include the type of incident, the type and number of resources being requested, current number of resources assigned to the emergency incident and the current incident strategy being utilized.

2.2 Upon receipt of the information, the PFDRDC staff will determine, to the best of their ability, the closest appropriate supporting jurisdiction to fulfill the

request. Upon that determination, the PFDRDC will contact the on-duty Shift Commander or Battalion Chief of the proposed supporting jurisdiction to obtain approval to dispatch requested resources.

2.3 The following criteria will be utilized by the Fire Chief or their designee to determine the level of support that will be provided:

2.3.1 What is the incident type and nature?

2.3.2 What is the immediate or foreseeable life hazard?

2.3.3 Has the responsible agency dispatched resources to the incident? If yes, what is their estimated time of arrival to the incident.

2.3.4 Is a different jurisdiction closer that can provide the requested support? If yes, refer the request to that jurisdiction?

2.3.5 Is the requested support appropriate to ensure scene safety and to operate within the Phoenix Fire Departments Volume 2 procedures? If no, what resources would be needed?

2.3.6 What is the current overall resource availability of the jurisdiction being requested? What impact will the fulfillment of the request have on the system?

2.3.7 Are the resources being requested appropriate for the incident and able to have an impact. Specific consideration should be applied to request for ladder companies.

2.4 After thoroughly assessing the criteria in section 2.3 above, the Fire Chief or their designee will make a determination whether to fully or partially support the mutual aid request, or to deny the request. Upon this determination, the supporting jurisdiction Fire Chief or designee will advise the PFDRDC of the level of response, if any, that will be provided.

2.5 If assistance will be provided, the PFDRDC will immediately dispatch the determined resources and notify the requesting jurisdiction of the status of their request for assistance.

ARTICLE IV - MISCELLANEOUS

1. Jurisdictions joining in this agreement should seek to adopt standard operating procedures to provide for incident command and management, communications, safety and such aspects of operations as are necessary to provide for the health and safety of the public and emergency response personnel.

2. The Parties further agree to participate in multi-jurisdictional drills and exercises, training programs, pre-incident planning, post-incident critiques and other activities to enhance safe effective emergency operations when practical and feasible to participate.

3. Nothing in this agreement shall limit the ability of either Party from agreeing to participate in more specific contracts for services, mutual assistance or automatic response; nor shall this prohibit any Party from providing emergency assistance to another jurisdiction which is not a participant in this agreement.

4. It is understood that no Party to this agreement by the execution of said agreement or by the requesting or providing of assistance under this agreement has assumed any binding legal responsibility to provide the resources, equipment, facilities or personnel of such responding jurisdiction outside its geographic area of jurisdiction, either in the instance of the initial request for assistance or any future request for assistance.

5. Neither Party shall be reimbursed by the other Party for any costs incurred pursuant to the agreement.

6. Both Parties shall retain ownership of any equipment or property it brings to the performance of this agreement.

ARTICLE V. TERM OF THE AGREEMENT

1. Term; Renewal:

This Agreement shall commence on the Effective Date referenced above, regardless of the date of recordation with the Maricopa County Recorder's Office, and shall continue in force for five (5) years, or until terminated by formal act of the Parties.

2. Termination:

Either Party may terminate this Agreement at any time by providing ninety days (90) written notice to the other Party. That terminating Party's termination will then be effective on the 91st day after notice has been provided, unless the notice to terminate has been withdrawn. The Parties at their convenience, by written notice, may terminate this Agreement. Termination can be with, or without, cause. In addition, the Parties acknowledge that, to the extent applicable by law, this Agreement is subject to cancellation by either Party pursuant to the provisions of A.R.S. § 38-511.

ARTICLE VI. GENERAL TERMS AND CONDITIONS

1. Governing Law; Forum; Venue:

This Agreement is executed and delivered in the State of Arizona, and the substantive laws of the State of Arizona (without reference to choice of law principles) will govern their interpretation and enforcement. Any action brought to

interpret or enforce any provision of this Agreement that cannot be administratively resolved, or otherwise related to or arising from this Agreement, will be commenced and maintained in the state or federal courts of the State of Arizona, Maricopa County, and each of the Parties, to the extent permitted by law, consents to jurisdiction and venue in such courts for such purposes.

2. Implied Contract Terms:
Each and every provision of law and any clause required by law to be in this Contract shall be read and enforced as though it were included herein, and, if through mistake or otherwise, any such provision is not inserted, or is not correctly inserted, then upon the application of either Party, the Contract shall be physically amended to make such insertion or correction.

3. Parol Evidence:
This Agreement is intended by the undersigned Parties as the final expression of their agreement and is intended to be the complete and exclusive statement of the terms of the agreement between the Parties. No course of prior dealings between the Parties and no usage in the trade shall be relevant to supplement or explain any term used in this Agreement. Acceptance or acquiescence in a course of performance rendered under this Contract shall not be relevant to determine the meaning of this Agreement.

4. Third-Party Beneficiary Clause:
The Parties expressly agree that this Agreement is neither intended by any of its provisions to create any right of the public or any member thereof as a third Party beneficiary, nor to authorize anyone not a Party to this Agreement to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of this Agreement.

5. Fund Appropriation Contingency:
The Parties understand that the continuation of this Agreement is subject to the budget of the Parties providing for the contract item as an expenditure. The Parties cannot assure that funding this Agreement will be approved in the future. In such event, either Party may terminate this Agreement.

6. No Joint Venture:
No term or provision in this Agreement is intended to create a partnership, joint venture or agency arrangement between any of the Parties.

7. Assignment and Delegation:
Neither this Agreement, nor any of its rights or obligations, may be transferred or assigned by either Party without the prior written consent of both Parties. Any attempt to assign this Agreement without prior written consent will be void and may result in penalties up to and including termination of the Agreement.

8. Entire Contract; Amendment, No Oral Modification:
This Agreement constitutes the complete agreement of the Parties. It supersedes all

previous representations, understandings, and agreements, written or oral, relating to the subject matter of this Agreement. This Agreement and its terms may not be modified or changed except in writing signed by both Parties.

9. Invalidity of Any Provisions:

This Agreement will remain in effect even if one or more of its terms or provisions have been held to be invalid or unenforceable. Such a holding will result in the offending term or provision being ineffective to the extent of this Agreement, which would subsequently be construed as though the invalid or unenforceable term or provision never existed. Upon discovery by either Party of invalid terms or provisions, written notice will be given to the other Party within ten (10) business days.

10. Independent Contractor Status:

The Parties agree that neither Party shall be deemed to be an employee or agent of the other Party to this Agreement and that the relationship created by this Agreement is that of independent contractors. Neither Party nor any of either Party's agents, employees or helpers will be deemed to be the employee, agent, or servant of the other Party. Neither Party, its employees and subcontractors are entitled to worker's compensation benefits from the other Party.

11. Workers' Compensation:

Pursuant to A.R.S. §23-1022(D), for the purposes of workers' compensation coverage, all employees of each Party covered by this Agreement shall be deemed to be an employee of all Parties. The agency which regularly employs an employee entitled to workers' compensation arising out of work associated with this Agreement shall be the agency solely liable for payment of all workers' compensation and related benefits.

12. Severability:

The provisions of this Agreement are severable to the extent that any provision or application held to be invalid shall not affect any other provision or application of the Agreement which shall remain in effect without the invalid provision or application.

13. Non-Waiver:

Any City delay or failure to exercise or enforce any right, power, privilege, or remedy under this Agreement may not be deemed a waiver, release, or modification of the requirements of this Agreement or any of its terms or provisions.

14. Compliance with Laws:

To the extent required by law, the Parties will comply with all applicable existing and subsequently enacted federal, state and local laws, ordinances, codes, and regulations that are, or become applicable to this Agreement. If a subsequently enacted law imposes substantial additional costs, a request for an amendment may be submitted pursuant to this Agreement.

15. Compliance with Non-Discrimination Laws:
To the extent required by law, the Parties agree to comply with all applicable state and federal laws, rules, regulations and executive orders governing equal employment opportunity, non- discrimination and affirmative action.

16. Drug Free Workplace:
The Parties will comply with the Drug Free Workplace Act of 1988 and will permit inspection of its personnel records to verify such compliance. A Party's breach of the above-mentioned warranty shall be deemed a material breach of the Agreement and may result in the termination of the Agreement.

17. Immigration and Legal Worker Requirements:
To the extent required by law, the Parties will comply with the Immigration Reform and Control Act of 1986 ("IRCA") and will permit inspection of its personnel records to verify such compliance. To the extent required by law and applicable under A.R.S. § 41-4401, each Party warrants compliance with all federal immigration laws and regulations that relate to its employees and the City warrants compliance with the E-verify requirements under A.R.S. § 23-214(A).

18. Disposition of Property.
Pursuant to the provisions of A.R.S. § 11-952(B)(4), it is expressly acknowledged and und understood that upon cancellation or termination of this agreement, all right, title, and interest in and to equipment and property shall at all times remain the property of the Purchaser.

ARTICLE VII. INSURANCE AND INDEMNIFICATION

1. Indemnification:
From the time of arrival to the time of departure at the emergency scene, the Party providing assistance shall be considered for all purposes to be under the direction and control of the Party requesting assistance. In proceeding to and returning from the emergency scene, the Party providing assistance shall be considered to be an independent contractor for all purposes, and not under the direction and control of the Party requesting assistance. To the extent permitted by law, each Party shall indemnify, defend, save and hold harmless the other Party and its officers, officials, agents, and employees from and against any and all claims, actions liabilities, damages, losses, or expenses (including court costs, attorneys' fees, and costs of claim processing, investigation and litigation) (hereinafter referred to as "Claims") for bodily or personal injury (including death), or loss or damage to tangible or intangible property caused, or alleged to be caused, in whole or in part, by the negligent or willful acts or omissions of each Party or any of its respective owners, officers, directors, agents, employees or subcontractors.

2. Indemnifications Survive:
The provisions of this Agreement wherein a Party has explicitly indemnified the

other Party shall survive the expiration or earlier termination of this Agreement

ARTICLE VIII. NON-WAIVER OF SOVEREIGN IMMUNITY

1. SOVEREIGN IMMUNITY:
Nothing in this Agreement shall be construed as a waiver of the Community's sovereign immunity, and is not intended to impair, limit, or affect the status of the Community or its sovereignty.

ARTICLE IX. NOTICES

1. Any notice, consent, or other communication ("notice") required or permitted under this Agreement must be in writing and either delivered in person, sent by facsimile transmission, deposited in the United States mail, postage prepaid, registered or certified mail, return receipt requested, or deposited with any commercial air courier or express service addressed as follows:

If to CITY:	If to COMMUNITY
City of Chandler Fire Department 151 E. Boston St. Chandler, AZ 85225 Attn: Thomas Dwiggins Fire Chief Chandler Fire Department Telephone: (480) 782-2120 Fax: (480)782-2150 With a Copy to: City Attorney's Office City of Chandler Mail Stop 602 P.O. Box 4008 Chandler, AZ 85244-4008	Gila River Fire Department 5002 North Maricopa Road Chandler, AZ 85226 Attn: Kathy Garcia Gila River Fire Department Telephone: (520) 796-5900 Fax: With a Copy to: Gila River Indian Community Office of General Counsel PO Box 97 Sacaton, AZ 85147

Notice will be deemed received at the time it is personally served or, on the day it is sent by facsimile transmission or, upon deposit with any commercial air courier or express service or, if mailed, ten (10) days after the notice is deposited in the United States mail as provided above. Either Party may change its mailing address, fax number, or the contact information for the person to receive notice by notifying the other Party as provided herein. Notice sent by facsimile transmission must also be sent by regular mail to the recipient at the above address. This requirement for duplicate notice is not intended to change the effective date of the notice sent by facsimile transmission.

IN WITNESS WHEREOF, this Agreement is executed as provided below. Further, in signing this Agreement, the signatories below affirm and attest that they are authorized to execute this Agreement on behalf of their respective Party.

CITY OF CHANDLER, a municipal corporation
Joshua Wright, Acting City Manager

By: _____
Thomas Dwiggins, Fire Chief

ATTEST:

_____
City Clerk, City of Chandler

APPROVED AS TO FORM:

_____
City Attorney, City of Chandler

GILA RIVER INDIAN COMMUNITY

By: _____
Stephen R. Lewis, Governor

APPROVED AS TO FORM:

_____
Linus Everling, General Counsel

_____
Kathy Garcia, Fire Chief
Gila River Fire Department

RESOLUTION NO. 5465

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CHANDLER, ARIZONA, AUTHORIZING AN INTERGOVERNMENTAL AGREEMENT BETWEEN THE CITY OF CHANDLER AND THE GILA RIVER INDIAN COMMUNITY FOR PROVISION OF MUTUAL AID SERVICES AND AUTHORIZING THE FIRE CHIEF OR DESIGNEE, TO EXECUTE THE AGREEMENT ON BEHALF OF THE CITY OF CHANDLER.

WHEREAS, the City of Chandler and the Gila River Indian Community wish to continue the partnership between the two entities that began in 1996, and enter into an updated Mutual Aid Intergovernmental Agreement for the provision of mutual aid; and

WHEREAS, it is mutually beneficial for both Parties to enter into an agreement to provide fire and medical services for the citizens of Chandler and the Gila River Indian community; and

WHEREAS, the Parties have the authority to enter into such an Agreement pursuant to the emergency management provisions of A.R.S. § 26-308(A) as well as the provisions of A.R.S. § 11-952(A) that enable public agencies to enter into intergovernmental agreements; and

WHEREAS, the Parties voluntarily agree to aid and assist each other when appropriate during an active incident.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Chandler, Arizona, as follows:

Section 1. Approves the Intergovernmental Agreement, attached hereto.

Section 2. Authorizes the Fire Chief, or designee, to execute the Intergovernmental Agreement.

Section 3. Authorizes and directs the various City officers and employees to perform all acts necessary to give effect to this Resolution.

PASSED AND ADOPTED by the Council of the City of Chandler, Arizona, this _____ day of April, 2021.

ATTEST:

_____ _____

CITY CLERK MAYOR

CERTIFICATION

I HEREBY CERTIFY that the above and foregoing Resolution No. 5465 was duly passed and adopted by the City Council of the City of Chandler, Arizona, at a regular meeting held on the _____ day of April, 2021 and that a quorum was present thereat.

_____
CITY CLERK

APPROVED AS TO FORM:

_____
CITY ATTORNEY

CHANDLER arizona
Community of Innovation

City Council Memorandum **Fire Memo No.** CP21-124

Date: April 19, 2021

To: Mayor and Council

Thru: Joshua H. Wright, Acting City Manager
Debra Stapleton, Assistant City Manager
Thomas Dwiggins, Fire Chief
Andrew Goh, Capital Projects Manager

From: Kimberly Moon, Principal Engineer

Subject: Professional Services Agreement No. FI2001.201 with HDA Architects, LLC, for Chandler Fire Station No. 282 Reconstruction, in an amount not to exceed $559,279.00

Proposed Motion:

Move City Council award Professional Services Agreement No. FI2001.201, to HDA Architects, LLC, for Chandler Fire Station No. 282 Reconstruction, in an amount not to exceed $559,279.00.

Background/Discussion:

Fire Station 282 is located near the intersection of Alma School and Warner roads. This station responds within the busiest area of the City, with approximately 4,500 calls for service annually. The facility was originally constructed in 1986 and has had multiple renovations and repairs to maintain functionality over the years.

This project provides for phased removal of existing building and installation of a new larger building for apparatus bays, dorm rooms and bathrooms on the existing parcel. The fire station will remain operational during construction. Once rebuilt, Fire Station 282 will have the space necessary to house two engines, one ambulance, and one low-acuity unit.

The project scope of work consists of architectural design services, site civil engineering, survey, geotechnical, drainage, plans, specifications, and permitting. The contract completion time is 300 calendar days following Notice to Proceed.

Consistent with the City Council's goal of Quality of Life, the rebuild of Fire Station 282 will allow for greater, more comprehensive coverage of the district, ensuring that residents receive rapid, life-saving interventions when they need it most.

Evaluation:

The City's selection process was conducted in accordance with City policy and procedure and State law. Staff recommends approval of this agreement with HDA Architects, LLC, based on qualifications, relevant firm experience, team experience, project understanding, and project approach.

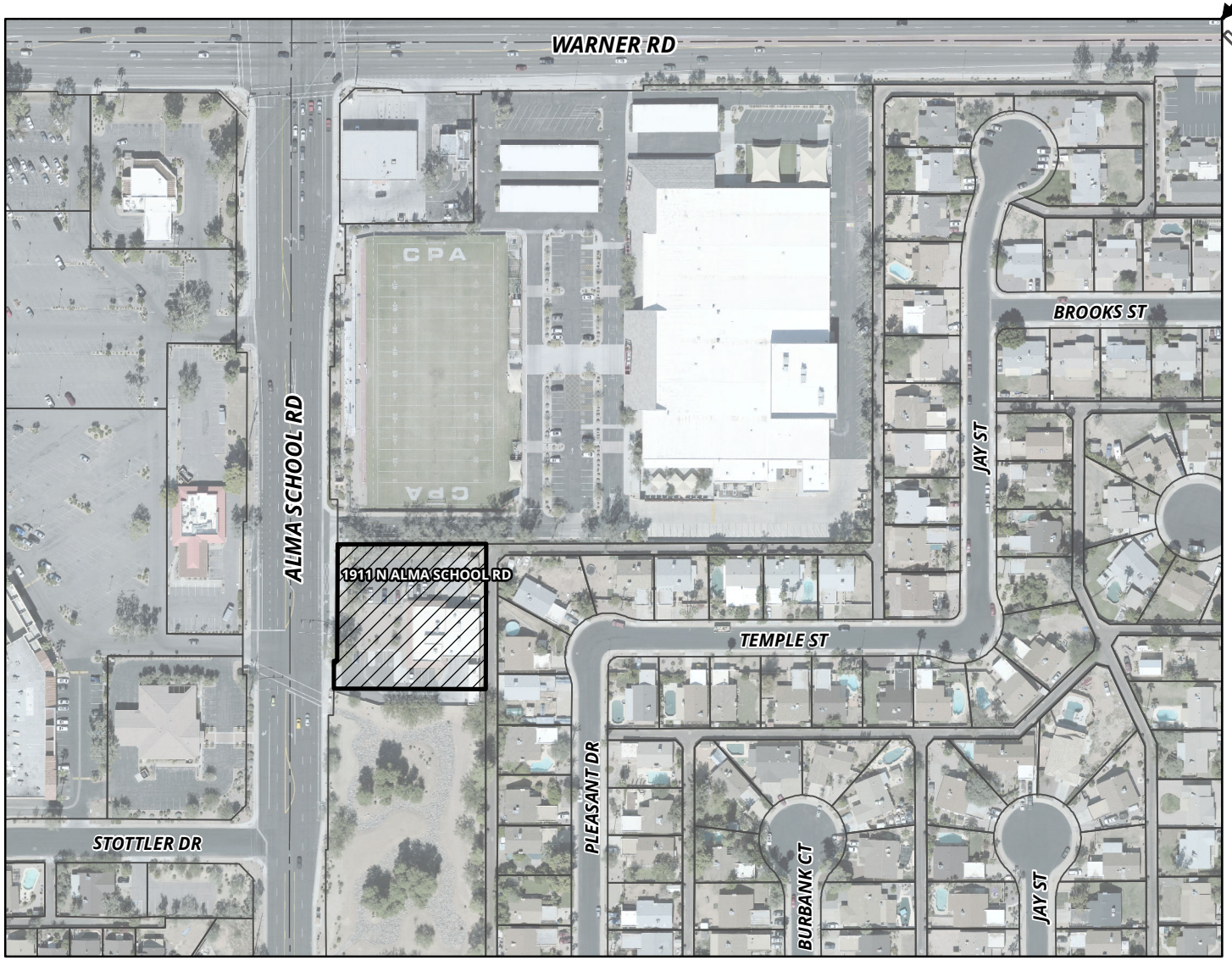
Fiscal Impact

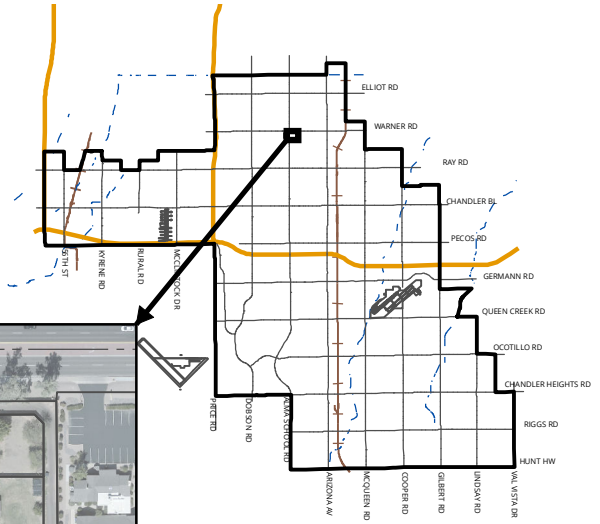
Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
401.2250.5219.6FI649	General Government Capital Projects	Rebuild Fire Station #282	$559,279.00	Y

Attachments

Vicinity Map
Agreement - HDA Architects

PROFESSIONAL SERVICES AGREEMENT NO. FI2001.201 WITH HDA ARCHITECTS, LLC, FOR CHANDLER FIRE STATION NO. 282 RECONSTRUCTION





MEMO NO. CP21-124

PROJECT SITE

NTS

ChanGIS

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PROFESSIONAL SERVICES AGREEMENT
Design Services
FIRE STATION #282 RECONSTRUCTION

Project No. FI2001.201

Council Date: April 22, 2021 Item No.

THIS AGREEMENT ("Agreement") is made and entered into on the _____ day of_____, 2021 ("Effective Date"), by and between City of Chandler, an Arizona municipal corporation, ("City"), and **HDA Architects, LLC**, an Arizona limited liability company, ("Consultant") (City and Consultant may individually be referred to as "Party" and collectively referred to as "Parties").

RECITALS

A. City proposes to engage Consultant to provide Design Services for **FIRE STATION #282 RECONSTRUCTION** project as more fully described in **Exhibit "A"**, which is attached to and made a part of this Agreement by this reference.

B. Consultant is ready, willing, and able to provide the services described in **Exhibit "A"** for the compensation and fees set forth and as described in **Exhibit "B"**, which is attached to and made a part of this Agreement by this reference.

C. City desires to contract with Consultant to provide these services under the terms and conditions set forth in this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the premises and the mutual promises contained in this Agreement, City and Consultant agree as follows:

SECTION I--CONSULTANT'S SERVICES

Consultant must perform the services described in **Exhibit "A"** to City's satisfaction within the terms and conditions of this Agreement and within the care and skill that a person who provides similar services in Chandler, Arizona exercises under similar conditions. All work or services furnished by Consultant under this Agreement must be performed in a skilled and workmanlike manner. All fixtures, furnishings, and equipment furnished by Consultant as part of the work or services under this Agreement must be new, or the latest model, and of the most suitable grade and quality for the intended purpose of the work or service.

SECTION II--PERIOD OF SERVICE

Consultant must perform the services described in **Exhibit "A"** for the term of this Agreement. Unless amended in writing by the Parties, the Agreement term expires **300** calendar days after the Notice to Proceed (NTP) Date.

SECTION III--PAYMENT OF COMPENSATION AND FEES

Unless amended in writing by the Parties, Consultant's compensation and fees as more fully described in **Exhibit "B"** for performance of the services approved and accepted by City under this Agreement must not exceed **$559,279** for the full term of the Agreement. Consultant may not increase any compensation or fees under this Agreement without the City's prior written consent. Consultant must submit monthly requests for payment of services approved and accepted during the previous billing period and must include, as applicable, detailed invoices and receipts, a narrative description of the tasks accomplished during the billing period, a list of any deliverables submitted, and any subconsultant's or supplier's actual requests for payment plus similar narrative and listing of their work. Consultant must submit an Application and Certification for Payment Sheet with the monthly request for payment to: CapitalProjects.Payables@chandleraz.gov. Payment for those services negotiated as a lump sum will be made in accordance with the percentage of the work completed during the preceding billing period. Services negotiated as a not-to-exceed fee will be paid in accordance with the work effort expended on the service during the preceding month. All requests for payment must be submitted to City for review and approval. City will make payment for approved and accepted services within 30 calendar days of City's receipt of the request for payment. Consultant bears all responsibility and liability for any and all tax obligations that result from Consultant's performance under this Agreement.

SECTION IV--CITY'S OBLIGATIONS

As part of Consultant's services under this Agreement, City will provide furnished items, services, or obligations as detailed in **Exhibit "D"**.

SECTION V--GENERAL CONDITIONS

5.1 Notices. Unless otherwise provided herein, demands under this Agreement must be in writing and will be deemed to have been duly given and received either (a) on the date of service if personally served on the party to whom notice is to be given, or (b) on the third day after the date of the postmark of deposit by first class United States mail, registered or certified, postage prepaid and properly addressed as follows:

To City:	City of Chandler Public Works & Utilities Department Attn: CIP City Engineer P.O. Box 4008, Mail Stop 407 Chandler, AZ 85244-4008 Phone: 480-782-3343 Email: andrew.goh@chandleraz.gov
With a Copy to:	Project Manager City of Chandler Public Works & Utilities Department P.O. Box 4008, Mail Stop 407 Chandler, AZ 85244-4008
To Consultant:	HDA Architects, LLC 459 N. Gilbert Rd., Ste. C-200, Gilbert AZ 85234-4737 Statutory Agent Name: n/a Statutory Agent Physical Address: n/a Statutory Agent Mailing Address: n/a Consultant's Authorized Project Representative: Name: Bruce R. Scott, RA Title: Principal Physical Address: 459 N. Gilbert Rd., Ste. C-200, Gilbert AZ 85234-4737 Mailing Address: same as above Phone: 480-980-0977 Email: bruces@hd-architects.com

5.2 Records/Audit. Records of Consultant's direct personnel payroll, reimbursable expenses pertaining to this Agreement and records of accounts between City and Consultant must be kept on the basis of generally accepted accounting principles and must be made available to City and its auditors for up to three years following City's final acceptance of the services under this Agreement (this requirement is increased to five years if construction of this project is federally funded). City, its authorized representative, or any federal agency, reserves the right to audit Consultant's records to verify the accuracy and appropriateness of all cost and pricing data, including data used to negotiate this Agreement and any amendments. City reserves the right to decrease the total amount of Agreement price or payments made under this Agreement or request reimbursement from Consultant following final contract payment on this Agreement if, upon audit of Consultant's records, the audit discloses Consultant has provided false, misleading, or inaccurate cost and pricing data. Consultant will include a similar provision in all of its contracts with subconsultants who provide services under the Agreement to ensure that City, its authorized representative, or the appropriate federal agency, has access to the subconsultants' records to verify the accuracy of all cost and pricing data. City reserves the right to decrease Contract price or payments made on this Agreement or request reimbursement from

Consultant following final payment on this Agreement if the above provision is not included in subconsultant agreements, and one or more subconsultants refuse to allow City to audit their records to verify the accuracy and appropriateness of all cost and pricing data. If, following an audit of this Agreement, the audit discloses Consultant has provided false, misleading, or inaccurate cost and pricing data, and the cost discrepancies exceed 1% of the total Agreement billings, Consultant will be liable for reimbursement of the reasonable, actual cost of the audit.

5.3 Alteration in Character of Work. Whenever an alteration in the character of work results in a substantial change in this Agreement, thereby materially increasing or decreasing the scope of services, cost of performance, or Project schedule, the work will be performed as directed by City. However, before any modified work is started, a written amendment must be approved and executed by City and Consultant. Such amendment must not be effective until approved by City. Additions to, modifications, or deletions from this Agreement as provided herein may be made, and the compensation to be paid to Consultant may accordingly be adjusted by mutual agreement of the Parties. It is distinctly understood and agreed that no claim for extra services or materials furnished by Consultant will be allowed by City except as provided herein, nor must Consultant do any work or furnish any materials not covered by this Agreement unless such work is first authorized in writing. Any such work or materials furnished by Consultant without prior written authorization will be at Consultant's own risk, cost, and expense, and Consultant hereby agrees that without written authorization Consultant will make no claim for compensation for such work or materials furnished.

5.4 Termination. City and Consultant hereby agree to the full performance of the covenants contained herein, except that City reserves the right, at its discretion and without cause, to terminate or abandon any service provided for in this Agreement, or abandon any portion of the Project for which services have been performed by Consultant. In the event City abandons or suspends the services, or any part of the services as provided in this Agreement, City will notify Consultant in writing and immediately after receiving such notice, Consultant must discontinue advancing the work specified under this Agreement. Upon such termination, abandonment, or suspension, Consultant must deliver to City all drawings, plans, specifications, special provisions, estimates and other work entirely or partially completed, together with all unused materials supplied by City. Consultant must appraise the work Consultant has completed and submit Consultant's appraisal to City for evaluation. City may inspect Consultant's work to appraise the work completed. Consultant will receive compensation in full for services performed to the date of such termination. The fee will be paid in accordance with Section Ill of this Agreement, and as mutually agreed upon by Consultant and City. If there is no mutual agreement on payment, the final determination will be made in accordance with the "Disputes" provision in this Agreement. However, in no event may the fee exceed the fee set forth in Section Ill of this Agreement nor as amended in accordance with Section "Alteration in Character of Work." City will make the final payment within 60 days after Consultant has delivered the last of the partially completed items and the Parties agree on the final fee. If City is found to have improperly terminated the Agreement for cause or default, the termination will be converted to a termination for convenience in accordance with the provisions of this Agreement.

5.5 Indemnification. To the extent permitted by law, the Consultant ("lndemnitor") must indemnify, save and hold harmless City and its officers, officials, agents and employees ("lndemnitee") from any and all claims, actions, liabilities, damages, losses or expenses (including court costs, attorneys' fees and costs of claim processing, investigation and litigation) ("Claims") caused or alleged to be caused, in whole or in part, by the wrongful, negligent or willful acts, or errors or omissions of Consultant or any of its owners, officers, directors, agents, employees, or subconsultants in connection with this Agreement. This indemnity includes any claim or amount arising out of or recovered under workers' compensation law or on account of the failure of Consultant to conform to any federal, state or local law, statute, ordinance, rule, regulation or court decree. Consultant must indemnify lndemnitee from and against any and all Claims, except those arising solely from lndemnitee's own negligent or willful acts or omissions. Consultant is responsible for primary loss investigation, defense and judgment costs where this indemnification applies. In consideration of the award of this Agreement, Consultant agrees to waive all rights of subrogation against lndemnitee for losses arising from or related to this Agreement. The obligations of Consultant under this provision survive the termination or expiration of this Agreement.

5.6 Insurance Requirements. Consultant must procure insurance under the terms and conditions and for the amounts of coverage set forth in **Exhibit "C"** against claims that may arise from or relate to performance of the work under this Agreement by Consultant and its agents, representatives, employees, and subconsultants. Consultant and any subconsultant must maintain this insurance until all of their obligations have been discharged, including any warranty periods under this Agreement. These insurance requirements are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement. City in no way warrants that the minimum limits stated in **Exhibit "C"** are sufficient to protect Consultant from liabilities that might arise out of the performance of the work under this Agreement by Consultant, Consultant's agents, representatives, employees, or subconsultants. Consultant is free to purchase such additional insurance as may be determined necessary.

5.7 Cooperation and Further Documentation. Consultant agrees to provide City such other duly executed documents as may be reasonably requested by City to implement the intent of this Agreement.

5.8 Successors and Assigns. City and Consultant each bind itself, its partners, successors, assigns, and legal representatives to the other party to this Agreement and to the partners, successors, assigns, and legal representatives of such other party in respect to all covenants of this Agreement. Neither City nor Consultant may assign, sublet, or transfer its interest in this Agreement without the written consent of the other party. In no event may any contractual relation be created between any third party and City.

5.9 Disputes. In any dispute arising out of an interpretation of this Agreement or the duties required not disposed of by agreement between Consultant and City, the final determination at the administrative level will be made by City Engineer.

5.10 Completeness and Accuracy of Consultant's Work. Consultant must be responsible for

the completeness and accuracy of Consultant's services, data, and other work prepared or compiled under Consultant's obligation under this Agreement and must correct, at Consultant's expense, all willful or negligent errors, omissions, or acts that may be discovered. Correction of errors disclosed and determined to exist during any construction of the project on architectural or engineering drawings and specifications must be accomplished by Consultant. The cost of the design necessary to correct those errors attributable to Consultant and any damage incurred by City as a result of additional construction costs caused by such engineering or architectural errors will be chargeable to Consultant and will not be considered a cost of the Work. The fact that City has accepted or approved Consultant's work will in no way relieve Consultant of any of Consultant's responsibilities.

5.11 Reporting. Written monthly reports, along with updated work schedules, will be made by Consultant in the format prescribed by City. These reports will be delivered to City per schedule. When requested by City, Consultant will attend Council meetings and provide finished documents including correspondence for Council action, supporting charts, graphs, drawings and colored slides of same.

5.12 Withholding Payment. City reserves the right to withhold funds from Consultant's payments up to the amount equal to the claims City may have against Consultant until such time that a settlement on those claims has been reached.

5.13 City's Right of Cancellation. The Parties acknowledge that this Agreement is subject to cancellation by City under the provisions of Section 38-511, Arizona Revised Statutes (A.R.S.).

5.14 Independent Consultant. For this Agreement Consultant constitutes an independent contractor. Any provisions in this Agreement that may appear to give City the right to direct Consultant as to the details of accomplishing the work or to exercise a measure of control over the work means that Consultant must follow the wishes of City as to the results of the work only. These results must comply with all applicable laws and ordinances.

5.15 Project Staffing. Prior to the start of any work under this Agreement, Consultant must submit to City detailed resumes of key personnel that will be involved in performing services prescribed in the Agreement. City hereby acknowledges its acceptance of such personnel to perform services under this Agreement. At any time hereafter that Consultant desires to change key personnel while performing under the Agreement, Consultant must submit the qualifications of the new personnel to City for prior approval. Key personnel include, but are not limited to, principals-in-charge, project manager, and project Consultant. Consultant will maintain an adequate and competent staff of qualified persons, as may be determined by City, throughout the performance of this Agreement to ensure acceptable and timely completion of the Scope of Services. If City objects, with reasonable cause, to any of Consultant's staff, Consultant must take prompt corrective action acceptable to City and, if required, remove such personnel from the Project and replace with new personnel agreed to by City.

5.16 Consultants or Subconsultants. Prior to beginning the work, Consultant must furnish City for approval the names of consultants or subconsultants to be used under this Agreement. Any subsequent changes are subject to City's written prior approval.

5.17 Force Majeure. If either party is delayed or prevented from the performance of any act required under this Agreement by reason of acts of God or other cause beyond the control and without fault of the Party (financial inability excepted), performance of that act may be excused, but only for the period of the delay, if the Party provides written notice to the other Party within ten days of such act. The time for performance of the act may be extended for a period equivalent to the period of delay from the date written notice is received by the other Party.

5.18 Compliance with Federal Laws. Consultant understands and acknowledges the applicability of the Americans with Disabilities Act, the Immigration Reform and Control Act of 1986 and the Drug Free Workplace Act of 1989 to it. Consultant agrees to comply with these laws in performing this Agreement and to permit City to verify such compliance.

5.19 No Israel Boycott. By entering into this Agreement, Consultant certifies that Consultant is not currently engaged in, and agrees for the duration of the Agreement, not to engage in a boycott of Israel as defined by state statute.

5.20 Legal Worker Requirements. A.R.S. § 41-4401 prohibits City from awarding a contract to any consultant who fails, or whose subconsultants fail, to comply with A.R.S. § 23-214(A). Therefore, Consultant agrees Consultant and each subconsultant it uses warrants their compliance with all federal immigration laws and regulations that relate to their employees and their compliance with § 23-214, subsection A. A breach of this warranty will be deemed a material breach of the Agreement and may be subject to penalties up to and including termination of the Agreement. City retains the legal right to inspect the papers of any Consultant's or subconsultant's employee who provides services under this Agreement to ensure that Consultant and subconsultants comply with the warranty under this provision.

5.21 Lawful Presence Requirement. A.R.S. §§ 1-501 and 1-502 prohibit City from awarding a contract to any natural person who cannot establish that such person is lawfully present in the United States. To establish lawful presence, a person must produce qualifying identification and sign a City-provided affidavit affirming that the identification provided is genuine. This requirement will be imposed at the time of contract award. This requirement does not apply to business organizations such as corporations, partnerships, or limited liability companies.

5.22 Covenant Against Contingent Fees. Consultant warrants that no person has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, and that no member of the Chandler City Council, or any City employee has any interest, financially, or otherwise, in Consultant's firm. For breach or violation of this warrant, City may annul this Agreement without liability or, at its discretion, to deduct from the Agreement price or consideration, the full amount of such commission, percentage, brokerage, or contingent fee.

5.23 Non-Waiver Provision. The failure of either Party to enforce any of the provisions of this Agreement or to require performance of the other Party of any of the provisions hereof

must not be construed to be a waiver of such provisions, nor must it affect the validity of this Agreement or any part thereof, or the right of either Party to thereafter enforce each and every provision.

5.24 Disclosure of Information Adverse to City's Interests. To evaluate and avoid potential conflicts of interest, Consultant must provide written notice to City, as set forth in this Section, of any work or services performed by Consultant for third parties that may involve or be associated with any real property or personal property owned or leased by City. Such notice must be given 7 business days prior to commencement of the services by Consultant for a third party, or 7 business days prior to an adverse action as defined below. Written notice and disclosure must be sent in accordance with Section 6.7 above. An adverse action under this Agreement includes, but is not limited to: (a) using data as defined in the Agreement acquired in connection with this Agreement to assist a third party in pursuing administrative or judicial action against City; or (b) testifying or providing evidence on behalf of any person in connection with an administrative or judicial action against City; or (c) using data to produce income for Consultant or its employees independently of performing the services under this Agreement, without the prior written consent of City. Consultant represents that except for those persons, entities, and projects identified to City, the services performed by Consultant under this Agreement are not expected to create an interest with any person, entity, or third party project that is or may be adverse to City's interests. Consultant's failure to provide a written notice and disclosure of the information as set forth in this Section constitute a material breach of this Agreement.

5.25 Data Confidentiality and Data Security. As used in the Agreement, "data" means all information, whether written or verbal, including plans, photographs, studies, investigations, audits, analyses, samples, reports, calculations, internal memos, meeting minutes, data field notes, work product, proposals, correspondence and any other similar documents or information prepared by, obtained by, or transmitted to Consultant or its subconsultants in the performance of this Agreement. The Parties agree that all data, regardless of form, including originals, images, and reproductions, prepared by, obtained by, or transmitted to Consultant or its subconsultants in connection with Consultant's or its subconsultant's performance of this Agreement is confidential and proprietary information belonging to City. Except as specifically provided in this Agreement, Consultant or its subconsultants must not divulge data to any third party without City's prior written consent. Consultant or its subconsultants must not use the data for any purposes except to perform the services required under this Agreement. These prohibitions do not apply to the following data provided to Consultant or its subconsultants have first given the required notice to City: (a) data which was known to Consultant or its subconsultants prior to its performance under this Consultant or its subconsultants by a third party, who to the best of Consultant's or its subconsultants' knowledge and belief, had the legal right to make such disclosure and Consultant or its subconsultants are not otherwise required to hold such data in confidence; or (c) data which is required to be disclosed by virtue of law, regulation, or court order, to which Consultant or its subconsultants are subject. In the event Consultant or its subconsultants are required or requested to disclose data to a third party, or any other information to which Consultant or its subconsultants became privy as a result of any other contract with City, Consultant must first notify City as set forth in this Section of the request or demand for the data. Consultant or its subconsultants must give City

sufficient facts so that City can be given an opportunity to first give its consent or take such action that City may deem appropriate to protect such data or other information from disclosure. All data must continue to be subject to the confidentiality agreements of this Agreement. Consultant or its subconsultants assume all liability to maintain the confidentiality of the data in its possession and agrees to compensate City if any of the provisions of this Section are violated by Consultant, its employees, agents or subconsultants. Solely for the purposes of seeking injunctive relief, it is agreed that a breach of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. Consultant agrees that the requirements of this Section must be incorporated into all subagreements entered into by Consultant. A violation of this Section may result in immediate termination of this Agreement without notice.

5.26 Personal Identifying Information-Data Security. Personal identifying information, financial account information, or restricted City information, whether electronic format or hard copy, must be secured and protected at all times by Consultant or its subconsultants. At a minimum, Consultant or its subconsultants must encrypt or password-protect electronic files. This includes data saved to laptop computers, computerized devices, or removable storage devices. When personal identifying information, financial account information, or restricted City information, regardless of its format, is no longer necessary, the information must be redacted or destroyed through appropriate and secure methods that ensure the information cannot be viewed, accessed, or reconstructed. In the event that data collected or obtained by Consultant or its subconsultants in connection with this Agreement is believed to have been compromised, Consultant or its subconsultants must immediately notify City contact. Consultant agrees to reimburse City for any costs incurred by City to investigate potential breaches of this data and, where applicable, the cost of notifying individuals who may be impacted by the breach. Consultant agrees that the requirements of this Section must be incorporated into all subcontracts entered into by Consultant. It is further agreed that a violation of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. A violation of this Section may result in immediate termination of this Agreement without notice. The obligations of Consultant or its subconsultants under this Section must survive the termination of this Agreement.

5.27 Jurisdiction and Venue. This Agreement is made under, and must be construed in accordance with and governed by the laws of the State of Arizona without regard to the conflicts or choice of law provisions thereof. Any action to enforce any provision of this Agreement or to obtain any remedy with respect hereto must be brought in the courts located in Maricopa County, Arizona, and for this purpose, each Party hereby expressly and irrevocably consents to the jurisdiction and venue of such court.

5.28 Survival. All warranties, representations, and indemnifications by Consultant must survive the completion or termination of this Agreement.

5.29 Modification. Except as expressly provided herein to the contrary, no supplement, modification, or amendment of any term of this Agreement will be deemed binding or effective unless in writing and signed by the Parties.

5.30 Severability. If any provision of this Agreement or the application to any person or

circumstance may be invalid, illegal or unenforceable to any extent, the remainder of this Agreement and the application will not be affected and will be enforceable to the fullest extent permitted by law.

5.31 Integration. This Agreement contains the full agreement of the Parties. Any prior or contemporaneous written or oral agreement between the Parties regarding the subject matter is merged and superseded.

5.32 Time is of the Essence. Time of each of the terms, covenants, and conditions of this Agreement is hereby expressly made of the essence.

5.33 Date of Performance. If the date of performance of any obligation or the last day of any time period provided for should fall on a Saturday, Sunday, or holiday for City, the obligation will be due and owing, and the time period will expire, on the first day after which is not a Saturday, Sunday or legal City holiday. Except as may otherwise be set forth in this Agreement, any performance provided for herein will be timely made if completed no later than 5:00 p.m. (Chandler time) on the day of performance.

5.34 Third Party Beneficiary. Nothing under this Agreement will be construed to give any rights or benefits in the Agreement to anyone other than City and Consultant, and all duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of City and Consultant and not for the benefit of any other party.

5.35 Conflict in Language. All work performed must conform to all applicable City of Chandler codes, ordinances, and requirements as outlined in this Agreement. If there is a conflict in interpretation between provisions in this Agreement and those in **Exhibit "A"**, the provisions in this Agreement prevail.

5.36 Document/Information Release. Documents and materials released to Consultant, which are identified by City as sensitive and confidential, are City's property. The document/material must be issued by and returned to City upon completion of the services under this Agreement. Consultant secondary distribution, disclosure, copying, or duplication in any manner is prohibited without City's prior written approval. The document/material must be kept secure at all times. This directive applies to all City documents, whether in photographic, printed, or electronic data format.

5.37 Exhibits. The following exhibits are made a part of this Agreement and are incorporated by reference:

Exhibit A - Scope of Services / Schedule
Exhibit B - Compensation and Fees
Exhibit C - Insurance Requirements
Exhibit D - Special Conditions
Exhibit E – Federal Requirements (if applicable)

5.38 Special Conditions. As part of the services Consultant provides under this Agreement, Consultant agrees to comply with and fully perform the special terms and conditions set

forth in **Exhibit "D"**, which is attached to and made a part of this Agreement.

5.39 Non-Discrimination and Anti-Harassment Laws. Consultant must comply with all applicable City, state, and federal non-discrimination and anti-harassment laws, rules, and regulations.

5.40 Licenses and Permits. Beginning with the Effective Date and for the full term of this Agreement, Consultant must maintain all applicable City, state, and federal licenses and permits required to fully perform Consultant's services under this Agreement.

5.41 Warranties. Consultant must furnish a one-year warranty on all work and services performed under this Agreement. Consultant must furnish, or cause to be furnished, a two-year warranty on all fixtures, furnishings, and equipment furnished by Consultant, subconsultants or suppliers under this Agreement. Any defects in design, workmanship, or materials that do not comply with this Agreement must be corrected by Consultant (including, but not limited to, all parts and labor) at Consultant's sole cost and expense. All written warranties and redlines for as-built conditions must be delivered to City on or before City's final acceptance of Consultant's services under this Agreement.

5.42 Cooperative Purchasing Agreement (S.A.V.E. – Strategic Alliance for Volume Expenditures). In addition to City of Chandler and with the approval of Consultant, this Agreement may be extended for use by other municipalities, school districts, and government agencies of the State. Any such usage by other entities must be in accordance with the ordinance, charter, or procurement rules and regulations of the respective political entity.

5.43 Budget Approval into Next Fiscal Year. This Agreement will commence on the Effective Date and continue in full force and effect until it is terminated or expires in accordance with the provisions of this Agreement. The Parties recognize that the continuation of this Agreement after the close of the City's fiscal year, which ends on June 30 of each year, is subject to the City Council's approval of a budget that includes an appropriation for this item as an expenditure. The City does not represent that this budget item will be actually adopted. This determination is solely made by the City Council.

SIGNATURE PAGE TO FOLLOW

This Agreement will be in full force and effect only when it has been approved and executed by the duly authorized City officials.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the Effective Date.

"CITY"
CITY OF CHANDLER

_____
MAYOR

Recommended By:

_____
Andrew Goh, P.E.
CIP City Engineer

APPROVED AS TO FORM:

_____ MB
City Attorney

ATTEST:

_____
City Clerk Seal

"CONSULTANT"
HDA Architects, LLC

_____ 4-2-21
Signature Date

BRUCE SCOTT
Print Name

PRESIDENT
Title

bruces@hd-architects.com
Signer Email Address

EXHIBIT "A"
SCOPE OF SERVICES/SCHEDULE

HDA ARCHITECTS, LLC

BRUCE R. SCOTT, RA
MANAGING MEMBER

March 15, 2021

Ms. Kimberly Moon, P.E.
Assistant CIP City Engineer
City of Chandler
Mail Stop 407
P.O. Box 4008
Chandler, Arizona 85244

PROJECT: FIRE STATION NO. 282 RECONSTRUCTION
City of Chandler(COC)
Project No. FI2001.201

SUBJECT: Architectural and Engineering Design Fee Proposal

Dear Kim:

HDA Architects is pleased offer this fee proposal to provide architectural and engineering design services for the Chandler Fire Station 282 Reconstruction project. We understand the project is located at 1911 N. Alma School Rd. and includes designing a new larger fire station at the existing site to enhance services in this area of Chandler.

HDA's scope of work will include architectural design, structural engineering, mechanical engineering, electrical engineering, on-site civil engineering, and landscape design. Additionally, our scope and fee include topographic surveying and geotechnical surveying. This proposal is prepared in accordance with our understanding of the project as described in the initial RFQ dated October 30, 2020 as well as our scoping meeting on February 23, 2021 and the City of Chandler Professional Services Agreement dated October 16, 2020.

The following information summarizes our understanding of the fire station project:

GENERAL

- The existing fire station is to remain operational during construction.
- HDA will as-built the existing fire station and site to help determine demo and phasing requirements in order to maintain operations. Phasing provisions for emergency, power connectivity, fire alarm and protection will be provided.

HDA ARCHITECTS, LLC

BRUCE R. SCOTT, RA
MANAGING MEMBER

SITE IMPROVEMENTS

- Site area of work generally includes improvements to the current site and possibly utilizing a portion of the retention basin to the south depending on design direction.

- It is our understanding offsite street improvements are already complete. Our fee will include curb cuts as required for driveways.

- It is our understanding the COC would like to reuse the existing traffic signal if this meets operational and functional requirements.

BUILDING

- Approximately 13,000 s.f. four bay, single-story fire station with dorm rooms, dayroom, dining room, kitchen, individual toilet/shower rooms, and other normal support spaces per the RFQ. A two-story station may be considered if needed to meet operational, functional, and budget goals of the project.

Services not set forth above are specifically excluded from the scope of HDA's services. HDA assumes no responsibility to perform any services not specifically listed above. Several services **not included** in this proposal are as follows:

- Offsite design and Civil engineering.
- Security system and device design.
- LEED Certification.
- Fire protection design. HDA will provide performance specifications. Contractor will provide design/shop drawings for agency approval.
- Fire alarm system design. HDA will provide performance specifications. Contractor will provide design shop drawings for agency approval.
- Photovoltaic and/or solar water heating design.
- Communication fiber design to the site.
- FF&E Design.
- Bid Set reproduction costs.
- Paying for Regulatory Agency review and/or Permit fees.
- Detailed cost estimating. HDA will provide rough order of magnitude opinion of probable construction cost as part of our conceptual design efforts. HDA will provide detail review of cost estimates produced by the general contractor (CMAR) at various phases.
- Traffic signal design.
- Traffic Studies.
- Record Drawing documentation. HDA's scope includes transferring record drawing documentation provided by the contractor into ACAD format.
- 3D Renderings and/or animations

HDA ARCHITECTS, LLC

BRUCE R. SCOTT, RA
MANAGING MEMBER

PROPOSED FEES

Our proposed lump sum fee for the project is as follows:

Basic Design Services – These services are considered normal and customary architectural, structural, mechanical, electrical, onsite civil and landscape design.

o HDA Architects	$296,790.00
o Sub Consultants	$222,125.00
Sub-Total Basic Services	$518,915.00

Supplemental Services – These services are not included in basic services and are considered project specific:

o Stakeholder Meeting Allowance	$5,000.00
o Information Technology structured cable design	$7,500.00
o Energy modeling	$3,500.00
o Utility Rebates	$1,000.00
o Topographic Survey	$9,362.00
o Lot line adjustment, legal descriptions and exhibits	$1,570.00
o Drainage investigation and reports	$4,464.00
o Civil cost estimates and value engineering	$2,968.00
o Geotechnical Survey (allowance)	$5,000.00
Sub-total Supplemental Services	$40,364.00

Attached for your review and additional information is a hourly fee breakdown spreadsheet for HDA and including total fees from our engineering consultants.

HDA ARCHITECTS, LLC

BRUCE R. SCOTT, RA
MANAGING MEMBER

HDA looks forward to working with the entire City of Chandler team on this very exciting project. Please advise HDA Architects of any items you feel can be eliminated or should be added to this proposal. Feel free to contact me with any questions.

Sincerely,
HDA ARCHITECTS, LLC

Bruce Scott
Principal

BS/sh

Attachments

EXHIBIT "A"
SCOPE OF SERVICES/SCHEDULE

1. PROJECT DESCRIPTION & SCOPE OF CONSTRUCTION:

1.1 Consultant will provide services for the design, permitting, development of construction documents, and specified construction administration for the development of a new fire station 282 located at 1911 N. Alma School Rd., Chandler, Arizona, all as more specifically described herein below.

1.2 The facility design may include, but not be limited to, reconstruction to replace the existing fire station on the existing site with a new single-story, expanded and upgraded fire station with 4 apparatus bays, 13 individual dorm rooms, 5 individual bathrooms, living quarters, exercise rooms, transition area, turnout area, decontamination room, workshop, and a public entrance with adjacent restroom. The exterior improvements may include: increasing the number of public and personnel parking spaces, exterior break area, storm water retention, landscaping, connection to city fiber, relocation of generator and fuel dispensing.

1.3 Consultant will provide all design services for the Project including, but not limited to, normal architectural, landscape, civil, mechanical, structural and electrical engineering services.

1.4 Consultant will include phasing/demo plans for the existing station and site as required.

1.5 Consultant will include provisions for IT, low voltage structured cabling, data room/racks, wireless access points through coordination with Chandler IT.

2. ASSIGNMENT:

2.1 The design contract has been awarded to an architect based on their proposed personnel and specified consultants. Any deviations or substitutions of these team members must be pre-approved in writing by City. Those persons listed in Exhibit B will perform those portions of the work listed therein.

3. PROJECT SCHEDULE:

3.1 Consultant must perform the services within the times set forth in the Production Schedule included herein and made a part hereof by reference.

3.2 Consultant must adhere to the Production Schedule described herein and such schedule may not be modified or deviated from without written consent of City. Consultant must revise and submit for review an updated schedule whenever it is demonstrated that the time for completion of the Project Design or of any of the partial completion points listed in the schedule is delayed by two weeks or more. Such adjusted schedule will include a written explanation stating the reasons for the change and a plan for getting back on schedule. Consultant must take all reasonable actions necessary to get the project back on schedule and City will cooperate to assist Consultant.

4. PRELIMINARY RESEARCH:

4.1 As and for preliminary research before preparing the project design, Consultant will:

a. Perform a Document Search for utility as-builts.
b. Perform a Document search for rights-of-way.
c. Perform a Document search for survey ties and benchmarks.
d. Perform a Document search for City policies, regulations, standards, design manuals, and requirements, etc. relevant to project.
e. Research and/or obtain geotechnical reports and investigations, master plans, computer model data and field surveys.
f. Research all utility companies/agencies and acquire all available as-built and utility records.
g. Investigate existing conditions, make measured drawings, and verify accuracy of drawings or other information furnished by City.
h. Consultant must provide a survey of the project area that includes complete topographical and property data of the immediate site. Design must utilize established City of Chandler benchmarks and reference locations of benchmarks on the plans. Clearly define the benchmark location and elevation that will be utilized for construction of this facility. Include larger boundary area to include fire station 282 parcel, City alley east of fire station, school driveway to the north, full width street section of Alma School Rd. and City drainage parcel to the south.
i. Research existing fire station and site to develop potential phasing plans and possible multiple GMPs.
j. Include provisions for up to four (4) legal descriptions, and ALTA/NSPS land title survey for fire station parcel.
k. Include utility potholing

5. UTILITY/AGENCY COORDINATION:

5.1 Coordination with utility companies and agencies must be in accordance with the latest version of the "Public Improvement Project Guide" (PIPG).

5.2 Consultant must identify utility conflicts during the initial stages of the design process.

5.3 Consultant must coordinate the design and installation of the utilities, which includes, but is not limited to, services for electric, communications, water, storm drainage, irrigation and sanitary systems, etc.

5.4 Easements for these utilities must be identified early in the design stage of the project and necessary information provided to City's Real Estate Department to allow City to complete acquisition during the design phase.

5.5 Engineers employed by Consultant must provide the legal descriptions for the natural gas and electrical service easements.

5.6 Consultant must submit preliminary plans, specifications, and design calculations to utilities/agencies for review and use during their design for their service improvements or any necessary relocations.

5.7 Consultant must conduct utility meetings to coordinate relocations with utility/agency and establish relocation schedules.

5.8 Consultant must follow-up with the final design submittal for utility construction and coordination with the bid documents.

5.9 Consultant must incorporate the utility/agency private developer construction requirements into the bid documents.

6. GEOTECHNICAL INVESTIGATION:

6.1 Consultant must perform all soil and pavement borings necessary to complete their work.

6.2 Sub-surface soil conditions, established by the geotechnical investigations, must be incorporated into the bid documents in a manner usable to the excavation and foundation bidding and construction.

7. PROGRAMMING:

7.1 Consultant must meet with City staff to ascertain the requirements of the Project and will arrive at a mutual understanding of such requirements.

7.2 Consultant must facilitate "sub-committee" meetings to gather pertinent information from:

a. City staff
b. Facilities
c. Information Technology

7.3 Consultant must prepare a "Program" which will include:

a. Complete documentation of site survey from preliminary work
b. Define new buildings space needs
c. Define new building space requirements and amenities necessary to accommodate planned activities in each space
d. Define site requirements
e. Create a matrix of spaces, sizes and amenities

7.4 Based on the mutually agreed-upon program, schedule and construction budget requirements, Consultant must prepare, for approval by City, Schematic Design Documents consisting of drawings and other documents illustrating the scale and relationship of the Project components.

8. SCHEMATIC DESIGN (30% Document Review):

8.1 When the design is approximately thirty percent complete, Consultant must do the following:

a. Prepare a up to three (3) different single line concept drawing schemes, which depict the size and orientation of the project elements in relation to one another.
b. Present initial schemes to City and its representatives (to potentially include a contractor). Staff will collaborate with designers to manipulate the plans and mutually decide on the best scheme.
c. The final scheme must incorporate City's comments (and potentially a contractors' comments) and be cleaned up for reference and presentation to City Council if requested.
d. Prepare vertical sections across the site and through the building.
e. Prepare single line elevation drawing(s) and a perspective sketch of the exterior.
f. Complete a drainage analysis and provide solutions to mitigate the runoff.

g. Identify all necessary offsite improvements such as: streets, utilities, irrigation, etc., and depict the scope in a schematic design plan.
h. Submit the project to City for a Development Standards review.
i. Submit to City's Project Manager for comment two complete drawing sets with drainage & structural calculations, one of which must be reproducible.

9. DESIGN DEVELOPMENT (60% & 80% Document Review):

9.1 Based on the approved Schematic Design Documents and any adjustments authorized by City in the program, schedule or construction budget, Consultant must prepare, for approval by City, Design Development Documents consisting of drawings and other documents to fix and describe the size and character of the Project as to architectural, structural, mechanical and electrical systems, materials and such other elements as may be appropriate. When the design is approximately sixty percent (60%) complete and again when the design is approximately eighty percent (80%) complete, Consultant must do the following:

a. Allow and invite the Owner's Representative to attend the regular weekly design coordination meetings.
b. Develop a site plan. Design must utilize established City of Chandler benchmarks and reference locations of benchmarks on the plans.
c. Collaborate with City to define their requirements for building systems.
d. Create an outline specification.
e. Prepare plans, elevations, sections, schedules and notes as required to fix and describe the project as to civil, architectural, structural, mechanical, electrical, and special systems.
f. Perform code reviews and implement requirements into the design documents.
g. Consultant is required to review and complete the City's Constructability Review Checklist. All applicable checklist items are required to be incorporated in the design documents.
h. Value Engineer the design cooperatively with the entire design team and City's representatives. This effort will occur as early as effectively possible and consist of a focused meeting addressing: relationships of components, construction materials, and building systems.
i. Conduct a full document set (plans & specs) review in the presence of all consultants and City's representatives and any other stakeholders.
j. Submit once to City's Project Manager for comment two complete drawing sets, specifications, drainage & structural calculations, one of which will be reproducible. Include original redline drawings and comments received from previous review along with a review summary indicating action taken.

k. Schedule review meeting with plan check staff to discuss review comments. Clarify with the plan check staff what the design challenges are and decide the method in which they will be resolved.

10. CONSTRUCTION DOCUMENTS (98% Document Review):

10.1 Based on the approved Design Development Documents and any further adjustments in the scope or quality of the Project or in the construction budget authorized by City, Consultant must prepare, for approval by City, Construction Documents consisting of Drawings and Specifications setting forth in detail the requirements for the construction of the Project. When the design is approximately ninety eight percent (98%) complete Consultant must do the following:

a. Prepare plans, elevations, sections, schedules, notes and specifications as required to be able to bid and construct the project in its entirety.
b. Cover sheet to be provided by City on diskette (AutoCAD 2004).
c. Provide City of Chandler with a copy of the AutoCAD/BIM files. Each building system must be "layered" so as to be able to isolate trades or engineering from architectural components or vice versa.
d. Conduct a full document set (plans & Specs) review in the presence of all consultants and City's representatives.
e. Provide document coordination of work performed by separate contractors or by City's own forces (i.e.: systems furniture or exercise equipment provisions & installation, etc.).
f. Prepare bid alternates as necessary to assure budget can be met.
g. Submit to City's Project Manager for comment two complete drawing sets, specifications, drainage & structural calculations, one of which will be reproducible. Include original redline drawings and comments received from previous review along with a review summary indicating action taken.

11. BID & AWARD (100% Documents):

11.1 Submit bid documents to Development Services for building permit. All plans, calculations and specifications will be stamped. The specifications will be 8-1/2" x 11" and in electronic format on diskette in Microsoft Word 98. Plans will be black line prints as well as on diskette Auto CAD release 14 or R2000. Include original redline drawings and comments received from previous review along with a review summary indicating action taken.

11.2 Pick-up plan review final comments and prepare documents for reproduction. Provide City with pdf's and/or electronic files. City will have the bid sets reproduced from these pdf's or electronic files.

11.3 Assist City in the preparation of the Bid Form.

11.4 Attend and participate at the pre-bid conference for the purpose of answering technical questions from potential bidders.

11.5 Assist City in the evaluation of “substitutions and or-equals” and make a recommendation to accept or decline.

11.6 Prepare addenda for review and approval by City. City will distribute.

11.7 If bids are 10% over or under the “engineers estimate”, Consultant will be required to provide a detailed evaluation explaining differences. Then the documents will be modified and re-bid at no additional cost to City.

EXHIBIT "B"
COMPENSATION AND FEES

EXHIBIT B
DESIGN CONSULTANT MANHOURS AND FEE ESTIMATE BREAKDOWN

HDA ARCHITECTS, LLC.
159 North Gilbert Road, Suite C-251
Gilbert, Arizona 85234
(480) 739-6885

PROJECT TITLE: **Fire Station No. 282 Reconstruction - Proj. No. FI2001.201**
HDA ARCHITECTS

			Hourly Billing Rates	**Total Labor Cost Per Task**
Task 1 - Pre Design				
1.1	Kick off meeting			$584
1.2	Field verification and record findings (includes review of existing station)			$3,096
1.3	Coordinate topographic survey			$120
1.4	Coordinate consultants			$960
1.5	Review as-builts			$600
1.6	Geotechnical Survey			$120
1.7	Programming Meetings			$4,340
1.8	Conceptual designs - Potential phasing, station layouts, etc.			$9,155
		Subtotal - Task 1 (Pre Design)		**$18,975**
Task 2 - Schematic Design				
2.1	Prepare design documents			$36,699
2.2	Coordinate consultants			$1,288
2.3	Owner meeting			$1,752
2.4	Revisions			$1,910
2.5	Outline Specs			$1,124
		Subtotal - Task 2 (Schematic Design)		**$42,773**
Task 3 - Design Development				
3.1	Prepare design documents			$80,296
3.2	Coordiante consultants			$2,028
3.3	Owner meeting			$1,752
3.4	Revisions			$2,580
3.5	Coordinate Specs			$1,432
		Subtotal - Task 3 (Design Development)		**$88,088**
Task 4 - Construction Documents				
4.1	Interim (30%) drawings			$42,058
4.2	Interim (90%) drawings			$82,568
4.3	Final (100%) Contract Documents			$6,888
4.4	Meet with Owner (3)			$1,752
4.5	Submit drawings for plan review			$1,720
4.6	Coordinate consultants			$1,720
4.7	Permit correction response			$4,388
4.8	Coordinate Specs			$2,416
		Subtotal - Task 4 (Construction Documents)		**$143,510**
Task5 - Bidding				
5.1	Attend Pre-bid conference			$584
5.2	Bid services/RFI's			$2,860
		Subtotal - Task 5 (Bidding)		**$3,444**
		Sub-Total HDA Architects		**$296,790**
Sub-Consultants				
A	MBJ - Structural Engineer			$39,000
B	Sunrise - Civil Engineering			$96,575
C	Kraemer Consulting Engineers - Mechanical, Electrical and Fire Protection			$75,550
D	GK Flanagan - Landscape Architecture			$6,000
E	John Campbell - Specifications			$5,000
		Sub-Total Sub Consultants		**$222,125**
		TOTAL DESIGN TEAM FEE		**$518,915**
Allowances				
	Extra Sakeholder Meetings - Based on staff position hourly rates			$5,000
	Geotechnical Survey			$5,000

GK Flanagan Associates
4626 N 44th Street
Phoenix, AZ
85018
P 602.912.9691
F 602.912.9693
www.GKFassociates.com

March 10, 2021

HDA Architects
Bruce Scott
459 W. Gilbert, C-200
Gilbert, AZ 85234

PROJECT: **Chandler Fire Station 282, Chandler, Arizona**

PROPOSAL FOR PROFESSIONAL SERVICES
LANDSCAPE ARCHITECTURE
Services to be rendered:

Schematic Design (30% Set)	$ 1,375.00
Site Analysis / Site Investigation	
Inventory of Existing Plant Material	
Conceptual Planting Plan	
Meetings (1 Qty)	
Design Development (60% Set, 80% Set)	$ 2,450.00
Conceptual Planting Plan	
Color Rendered Planting Plan (1 Qty)	
Existing Irrigation Coordination / Demo Plan	
Cost Estimate Review	
Meetings (1 Qty)	
Construction Document Package (90% Set, 100% Set)	$ 2,175.00
Landscape Cover / Notes	
Planting Plan/Working Drawing	
Irrigation Plan/Working Drawing	
Existing Irrigation Coordination / Demo Plan	
Planting and Irrigation Details	
Cost Estimate Review	
Meetings (2 Qty)	
Construction Administration (If Required)	$ 1,000.00 N.T.E.
Punchlists (2 Qty)	
Meetings	
Tree Tagging	

FEE: **$ 1,375.00 SD**
$ 2,450.00 DR
$ 2,175.00 CD's
$ 6,000.00 Total

$ 1,000.00 CA Not to Exceed (If Required)

Services not included in fee:

- Any design services outside the scope of services specifically outlined above will be additional services.
- Any revised landscape drawings due to a revised site plan, or other changes requested by the client, owner, architect or engineer will be considered additional services.

Should this agreement meet with your approval, please retain the original for your records, and sign and return a copy to GK Flanagan Associates, Inc for our files. We look forward to working with you on this project. Every effort will be made to warrant your satisfaction.

Thank you for the opportunity,



Gregory K. Flanagan, RLA, ASLA
Principal
G.K. FLANAGAN ASSOCIATES, INC

PROJECT: **Chandler Fire Station 282, Chandler, Arizona**

AMOUNT: **$ 1,375.00 SD**
$ 2,450.00 DR
$ 2,175.00 CD's
$ 6,000.00 Total

$ 1,000.00 CA Not to Exceed (If Required)

ACCEPTED: _____

BY: _____

TITLE/COMPANY: _____

DATE: _____

Principals
Michael J. Kraemer, P.E.
Richard D. Redmond, P.E.
Troy P. Wurth
Jason M. Bush, P.E.
James M. Jones, Jr., P.E.

Kraemer Consulting Engineers, P.L.L.C.
Mechanical and Electrical Engineers

EXHIBIT "B-1"
Lump Sum Cost Per Task

	TASK DESCRIPTION	SUBTOTAL	
Task 1.0	**Project Description & Scope of Construction**		
Task 2.0	**Assignment**		
Task 3.0	**Project Schedule**		**$ -**
3.1	Production Schedule	$ -	
Task 4.0	**Quality Control**		**$ -**
4.1	Quality Control Plan	$ -	
Task 5.0	**Preliminary Research**		**$ 4,000.00**
5.1	Perform Document Search and Research	$ -	
5.2	Investigate Existing Conditions	$ *3,250.00*	
5.3	Flow Test	$ *750.00*	
Task 6.0	**Utility/Agency Coordination**		**$ 500.00**
6.1	Coordination with Utilities (PIPG)	$ *500.00*	
6.2	Identify Utility Conflicts	$ -	
6.3	Coordination Design of Utilities	$ -	
Task 7.0	**Geotechnical Investigation**		**$ -**
7.1	Soil and Pavement Borings	$ -	
Task 8.0	**Programming & Schematic Design (30%)**		**$ -**
8.1	Site Investigation & Information Gathering	$ -	
8.2	Prepare CAD Base Plans	$ -	
8.3	Prepare 30% SD & ROM Cost Estimate	$ -	
8.4	CofC Review/Meeting/Site Visit	$ -	
Task 10.0	**Design Development (60% & 80%)**		**$ 42,630.00**
10.1	Prepare 60% CAD Base Plans	$ -	
10.2	Coordinate Preliminary MP&E Engineering	$ -	
10.3	Prepare 60% Plans & Outline Specs	$ *42,630.00*	
10.4	Coordinate 60% Cost Estimate	$ -	
10.5	60% CofC Review/Meeting/Site Visit	$ -	
Task 11.0	**Construction Documents (90% & 100%)**		**$ 28,420.00**
11.1	Prepare 90% CAD Base Drwgs	$ -	
11.2	Coordinate MP&E Engineering	$ -	
11.3	Prepare 90% Plans & Draft Tech Specs	$ *21,315.00*	
11.4	Cordinate 90% Cost Estimate	$ -	
11.5	90% CofC Review/Meeting/Site Visit	$ -	
11.6	Coordinate 100% MP&E Engineering	$ -	
11.7	Prepare 100% Plans & Final Tech Specs	$ *7,105.00*	
11.8	100% Deliverables, Plan Review & Permit	$ -	
11.9	100% Engineer's Cost Estimate	$ -	
Task 12.0	**Contractor Coordination / Bidding**		**$ -**
12.1	Coordinate & Issue Bid Documents	$ -	
12.2	RFIs / Substitution Requests	$ -	
12.3	Issue Addenda as required	$ -	
ALLOWANCES			**$ -**
13.1	Allowance for Printing Expenses at Direct Cost	$ -	
13.2	Allowance for Cost Estimating Services	$ -	
13.3	Owner's Allowance	$ -	
	TOTAL COST:		**$ 75,550.00**

2050 W. Whispering Wind Dr., Suite 158, Phoenix, Arizona 85085-2864 ◆ Phone 602-285-1669 ◆ Fax 602- 285-9450

SHORT FORM AGREEMENT FOR STRUCTURAL ENGINEERING SERVICES

DATE: March 12, 2021 **PROJECT NUMBER:** P21.xxx.0
PROJECT DESCRIPTION: Chandler Fire Station 282
CLIENT: HDA Architects **ATTN: Bruce Scott**
ADDRESS: 459 N. Gilbert Rd., Suite C-200 | Gilbert, AZ 85234
TEL: 480-539-8800 **Email:** Bruces@hd-architects.com

THE CLIENT AUTHORIZES MEYER, BORGMAN AND JOHNSON, INC. TO:
☒ Proceed with new work effort ☐ Proceed with Additional Services

Scope of Service:
Provide structural engineering services for the Chandler Fire Station 282 located at 1911 N. Alma School Road, in Chandler, AZ. The location of the new fire station facility will be constructed adjacent to the existing station constructed in 1986.

The scope of this project includes a single story, 4-bay fire station with 13 individual dorm rooms, 5 individual bathrooms, exercise room, Dining, Kitchen and public entrance with adjacent restroom totaling roughly 13,000 sf. Exterior bearing walls are expected to be masonry supporting wood framing on the living quarters and exposed reinforced masonry construction supporting steel beams over the apparatus bays. There are expected to be 2 wood framed covered patios, including the main entry.

Our scope of services includes the following:

1. Structural drawings for permit and construction in two phases.
2. All documents will be prepared using Revit Structure 2021.
3. Structural calculations as required for permit submittal.
4. Edit structural sections of the architect's specifications in MS Word format.
5. Meetings during design (3 included).

Assumptions / Exclusions:

- The assumed foundation system is concrete spread footings. This foundation system and bearing pressure will be verified by the geotechnical engineer under contract with the HDA.
- The existing fire station will be demolished. We have included for phased demolition so a portion of the existing station (Apparatus Bays) can remain operational while new station is under construction.
- Strengthening of the existing structure to allow for phased demolition is not included but may be provided as an additional service if required.
- Cost estimates during design will be provided by a cost consultant and/or CMAR contractor.

- Reimbursable expenses for copies, prints, courier, etc. will be reimbursed at 1.1 times our cost. Local travel expenses for meetings, etc., are not reimbursable.

Our fee for this project is a lump sum fee divided into phases as noted below, and invoiced monthly. Authorized additional services will be charged at our published hourly rates as noted below unless alternate terms are authorized in writing prior.

Agreement incorporates and references the terms and conditions per the Consultant Agreement.

Compensation (invoiced monthly based on percentage of completion):

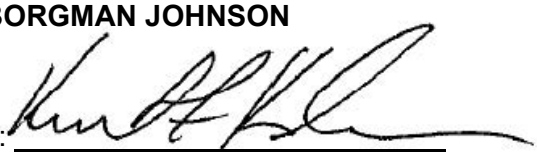
Schematic Design	$ 5,850.00
Design Development	$ 13,650.00
Construction Documents:	$ 19,500.00
Total:	$ 39,000.00
Reimbursable Expenses shall be invoiced at 1.1 our costs	
Estimated maximum Reimbursable Expenses:	$ 200.00

MBJ Standard Hourly Rates 2021

Principal Engineer IV	$230.00
Principal Engineer III	$200.00
Principal Engineer II	$185.00
Principal Engineer I	$175.00
Engineer V	$170.00
Engineer IV	$155.00
Engineer III	$135.00
Engineer II	$115.00
Engineer I	$100.00
BIM Specialist IV	$135.00
BIM Specialist III	$125.00
BIM Specialist II	$105.00
BIM Specialist I	$ 90.00
Office I	$ 70.00

Hourly rates are adjusted periodically but will not exceed 10% annually.

MEYER BORGMAN JOHNSON

SIGNED: 

BY: Kurt F. Kindermann, PE,SE

TITLE: Managing Principal

DATE: March 12, 2021

APPROVED BY CLIENT:

SIGNED: _____

BY: _____

TITLE: _____

DATE: _____

SUNRISE ENGINEERING

EXHIBIT B
Man-hour Estimate/Summary of Costs

Chandler FS 282 Reconstruction

COC Task	Work Task Description	Engineer V	Engineer (E.I.T.) II	Engineering Tech IV	CAD Technician IV	Admin III	Principal Surveyor	Registered Surveyor	Survey Crew Chief	Survey CAD Tech	Direct Costs	(hours)	($)
	Surveying												
5.0	ALTA / NSPS Survey						4	8		24		36	$4,660
5.0	Boundary Survey, Topo Survey, Base Mapping						4	12	36	60		112	$14,228
5.0	Legal Descriptions and Exhibits (4 max)						2	4		16		22	$2,770
												Subtotal	**$21,658**
	Engineering Design and Construction Plans												
5.0	Preliminary Research and Data Acquisition	4	8		4	8						24	$2,600
6.0	Utility Investigation and Coordination	4		24		8						36	$4,452
6.0	Potholing Allowance (anticipate 5-10 locations)										$4,500	0	$4,500
8.0	Programming and Schematic Design (30%)	10	6	24	40							80	$10,164
10.0	Drainage Investigation and Report	8	16	8								32	$4,464
10.0	Erosion and Sediment Control Plan	1	2	8								11	$1,503
10.0	Design Development (60% and 80%)	30	16	88	80							214	$28,054
11.0	Construction Documents (90% and 100%)	16	6	24	60							106	$13,454
12.0	Contractor Coordination / Bidding	2		8	12							22	$2,758
13.0	Allowances	6	2	12								20	$2,968
												Subtotal	**$74,917**
Sub-total Hours/Miles/Days		81	56	196	196	16	10	24	36	100	4500	715	$96,575
Hourly Billing Rate		$185.00	$119.00	$135.00	$109.00	$59.00	$185.00	$160.00	$138.00	$110.00			
Total Dollars		$14,985	$6,664	$26,460	$21,364	$944	$1,850	$3,840	$4,968	$11,000	$4,500	**SUBTOTAL**	**$96,575**
												GRAND TOTAL	**$96,575**

Sunrise Engineering, Inc.
3/10/2021

EXHIBIT "C"
INSURANCE REQUIREMENTS

1. General.

1.1 At the same time as execution of this Agreement, Consultant must furnish City a certificate of insurance on a standard insurance industry ACORD form. The ACORD form must be issued by an insurance company authorized to transact business in the State of Arizona possessing a current A.M. Best, Inc. rating of A-7, or better and legally authorized to do business in the State of Arizona with policies and forms satisfactory to City. Provided, however, the A.M. Best rating requirement will not be deemed to apply to required Workers' Compensation coverage.

1.2 Consultant and any of its subconsultants must procure and maintain, until all of their obligations have been discharged, including any warranty periods under this Agreement are satisfied, the insurances set forth below.

1.3 The insurance requirements set forth below are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement.

1.4 City in no way warrants that the minimum insurance limits contained in this Agreement are sufficient to protect Consultant from liabilities that might arise out of the performance of the Agreement services under this Agreement by Consultant, its agents, representatives, employees, subconsultants, and Consultant is free to purchase any additional insurance as may be determined necessary.

1.5 Failure to demand evidence of full compliance with the insurance requirements in this Agreement or failure to identify any insurance deficiency will not relieve Consultant from, nor will it be considered a waiver of its obligation to maintain the required insurance at all times during the performance of this Agreement.

1.6 Use of subconsultants: If any work is subcontracted in any way, Consultant must execute a written contract with subconsultant containing the same Indemnification Clause and Insurance Requirements as City requires of Consultant in this Agreement. Consultant is responsible for executing the Agreement with the subconsultant and obtaining Certificates of Insurance and verifying the insurance requirements.

2. Minimum Scope and Limits of Insurance. Consultant must provide coverage with limits of liability not less than those stated below.

2.1 *Professional Liability.* If the Agreement is the subject of any professional services or work performed by Consultant, or if Consultant engages in any professional services or work adjunct or residual to performing the work under this Agreement, Consultant must maintain Professional Liability insurance covering errors and omissions arising out of the work or services performed by Consultant, or anyone employed by Consultant, or anyone whose acts, mistakes, errors and omissions Consultant is legally liable, with a liability limit of $1,000,000 each claim and $2,000,000 all claims. In the event the Professional Liability

insurance policy is written on a "claims made" basis, coverage must extend for 3 years past completion and acceptance of the work or services, and Consultant, or its selected Design Professional will submit Certificates of Insurance as evidence the required coverage is in effect. The Design Professional must annually submit Certificates of Insurance citing that the applicable coverage is in force and contains the required provisions for a 3 year period.

2.2 *Commercial General Liability-Occurrence Form.* Consultant must maintain "occurrence" form Commercial General Liability insurance with a limit of not less than $2,000,000 for each occurrence, $4,000,000 aggregate. Said insurance must also include coverage for products and completed operations, independent contractors, personal injury and advertising injury. If any Excess insurance is utilized to fulfill the requirements of this paragraph, the Excess insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

2.3 *Automobile Liability-Any Auto or Owned, Hired and Non-Owned Vehicles*
Vehicle Liability: Consultant must maintain Business/Automobile Liability insurance with a limit of $1,000,000 each accident on Consultant owned, hired, and non-owned vehicles assigned to or used in the performance of Consultant's work or services under this Agreement. If any Excess or Umbrella insurance is utilized to fulfill the requirements of this paragraph, the Excess or Umbrella insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

2.4 *Workers Compensation and Employers Liability Insurance:* Consultant must maintain Workers Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Consultant employees engaged in the performance of work or services under this Agreement and must also maintain Employers' Liability insurance of not less than $1,000,000 for each accident and $1,000,000 disease for each employee.

3. Additional Policy Provisions Required.

3.1 *Self-Insured Retentions or Deductibles*. Any self-insured retentions and deductibles must be declared and approved by City. If not approved, City may require that the insurer reduce or eliminate any deductible or self-insured retentions with respect to City, its officers, officials, agents, employees, and volunteers.

3.1.1. Consultant's insurance must contain broad form contractual liability coverage.

3.1.2. Consultant's insurance coverage must be primary insurance with respect to City, its officers, officials, agents, and employees. Any insurance or self-insurance maintained by City, its officers, officials, agents, and employees will be in excess of the coverage provided by Consultant and must not contribute to it.

3.1.3. Consultant's insurance must apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

3.1.4. Coverage provided by Consultant must not be limited to the liability assumed under the indemnification provisions of this Agreement.

3.1.5. The policies must contain a severability of interest clause and waiver of subrogation against City, its officers, officials, agents, and employees, for losses arising from Work performed by Consultant for City.

3.1.6. Consultant, its successors and or assigns, are required to maintain Commercial General Liability insurance as specified in this Agreement for a minimum period of 3 years following completion and acceptance of the Work. Consultant must submit a Certificate of Insurance evidencing Commercial General Liability insurance during this 3 year period containing all the Agreement insurance requirements, including naming City of Chandler, its agents, representatives, officers, directors, officials and employees as Additional Insured as required.

3.1.7. If a Certificate of Insurance is submitted as verification of coverage, City will reasonably rely upon the Certificate of Insurance as evidence of coverage but this acceptance and reliance will not waive or alter in any way the insurance requirements or obligations of this Agreement.

3.2. *Insurance Cancellation During Term of Contract/Agreement.*

3.2.1. If any of the required policies expire during the life of this Agreement, Consultant must forward renewal or replacement Certificates to City within 10 days after the renewal date containing all the required insurance provisions.

3.2.2. Each insurance policy required by the insurance provisions of this Agreement must provide the required coverage and must not be suspended, voided or canceled except after thirty (30) days prior written notice has been given to City, except when cancellation is for non-payment of premium, then ten (10) days prior notice may be given. Such notice must be sent directly to Chandler Law-Risk Management Department, Post Office Box 4008, Mailstop 628, Chandler, Arizona 85225. If any insurance company refuses to provide the required notice, Consultant or its insurance broker must notify City of any cancellation, suspension, non-renewal of any insurance within seven (7) days of receipt of insurers' notification to that effect.

3.3 City as Additional Insured. The policies are to contain, or be endorsed to contain, the following provisions:

3.3.1. The Commercial General Liability and Automobile Liability policies are to contain, or be endorsed to contain, the following provisions: City, its officers, officials, agents, and employees are additional insureds with respect to liability arising out of activities performed by, or on behalf of, Consultant including City's general supervision of Consultant; Products and Completed operations of Consultant; and automobiles owned, leased, hired, or borrowed by Consultant.

3.3.2. City, its officers, officials, agents, and employees must be additional insureds to the full limits of liability purchased by Consultant even if those limits of liability are in excess of those required by this Agreement.

EXHIBIT "D"
SPECIAL CONDITIONS

Connection of Existing Fire Protection System. Consultant must provide City of Chandler Fire Marshall a copy of the 30% and 90% design documents for review. The cover letter to the Fire Marshall must request a review for all building fire protection connections to existing, new, or replaced water lines. When water lines of any size are included in the scope of work Consultant is responsible for obtaining information on all existing fire protection systems which could potentially be connected to the water line in the scope of work, and is responsible for the connection, reconnection, and identification of the fire protection system.

CHANDLER arizona
Community of Innovation

City Council Memorandum **Information Technology** **Memo No.** N/A

Date:	April 19, 2021
To:	Mayor and Council
Thru:	Joshua H. Wright, Acting City Manager Debra Stapleton, Assistant City Manager Sandip Dholakia, Chief Information Officer
From:	Kerstin Nold, IT Services Manager
Subject:	Purchase of Webex Annual Subscription

Proposed Motion:

Move City Council approve the purchase of Webex annual subscription from NTT America, Inc., utilizing 1GPA Contract No. 16-11PV-05, in the amount of $212,415, for a three-year period beginning May 1, 2021, through April 30, 2024, payable on an annual basis, and authorize the City Manager or designee to sign a linking agreement with NTT America, Inc.

Background/Discussion:

Since February 2020, City of Chandler Webex conferencing and colloaboration usage has increased more than 89%. The spike in Webex usage is in direct correlation to the impacts stemming from the COVID-19 pandemic where many City staff members required conferencing and collaboration services in order to continue providing City services while staying safe. This purchase will provide annual Webex conferencing and collaboration services for the City of Chandler. This agreement also allows for access to Webex technical support to escalate issues and obtain resolution to technical problems.

The linking agreement will incorporate the terms and conditions of the cooperative agreement.

Evaluation:

Paradise Valley Unified School District competitively solicited and awarded a contract on behalf of 1GPA for technology and audio visual solutions. The City has a current agreement with 1GPA that permits the cooperative use of 1GPA's contract.

Financial Implications:

The annual cost for each of the three years is as follows:

Year One	$70,805	May 1, 2021 - April 30, 2022
Year Two	$70,805	May 1, 2022 - April 30, 2023
Year Three	$70,805	May 1, 2023 - April 30, 2024

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
101.1200.5419.0.0.0	General Fund	N/A	$186,610	N

217.1280.6316.0.3AZ004.0	Grant Fund	CARES Act	$25,805	N

CHANDLER arizona
Community of Innovation

City Council Memorandum **Management Services** **Memo No.** 21-049

Date:	April 19, 2021
To:	Mayor and Council
Thru:	Joshua H. Wright, Acting City Manager Dawn Lang, Management Services Director
From:	Matthew Dunbar, Budget Manager
Subject:	Resolution No. 5466 - Pension Funding Policy Update

Proposed Motion:

Move City Council pass and adopt Resolution No. 5466, adopting the updated Pension Funding Policy and accepting the City's share of assets and liabilities under the Public Safety Personnel Retirement System Actuarial Valuation Report.

Background:

The City of Chandler has nine financial policies that exemplify high standards set for stewardship over Chandler's financial resources. They are also a guide for sound fiscal planning and budgeting, while maintaining fiscal integrity. The following financial policies currently exist: Operating Management, Capital Management, Reserves, Debt Management, Long-Range Financial Planning, Grants Management, Investment, Accounting, Auditing and Financial Reporting, and Pension Funding. Each year the financial policies are reviewed and recommended updates are brought forward by resolution for approval by Mayor and Council to be adopted as part of the annual budget. This update includes the Pension Funding Policy.

The City of Chandler's Pension Funding Policy was adopted by Resolution No. 5375 in May 2020 to meet the requirements of House Bill 2097 which passed in 2018 (Laws 2018, Chapter 112; Arizona Revised Statutes § 38-863.01). It requires the governing bodies of all Public Safety Personnel Retirement System (PSPRS) employers to annually adopt a pension funding policy and formally accept their share of the assets and liabilities based on the PSPRS Actuarial Valuation Report. The policy addresses Council's position on funding the PSPRS and Arizona State Retirement System (ASRS) Annual Required Contribution (ARC) or employer contributions each year.

Although the statutory requirements of Laws 2018, Chapter 112 are to address a pension funding policy for PSPRS, Chandler's Pension Funding Policy addresses both PSPRS and the ASRS. The Pension Funding Policy clearly communicates the Council's pension funding objectives and its commitment to City employees and the sound financial management of the City.

The updates to the City Financial Policies continue to institutionalize strong financial management practices, clarify the strategic intent for financial management, define boundaries, manage risks to financial condition, support good bond ratings to minimize borrowing costs, and comply with established public management best practices.

Financial Implications:

The City of Chandler's Pension Funding Policy details the assets, liabilities and current funding ratio of 64.9% combined for both Chandler Police and Fire PSPRS trust funds from the June 30, 2020, Actuarial Valuation Reports (up from 59.9%). The updated policy takes into account potential actuarial assumption changes by the PSPRS Board, as well as rate and ARC information calculated through utilizing the modeler provided by the PSPRS actuarial partner. The plan continues to focus on maintaining additional one-time payments which will allow us to meet the amortization timeline set forth by the PSPRS June 30, 2020, actuarial valuation of 100% funded by June 30, 2036, while minimizing future ongoing increases to the ARC or employer contributions.

The City will continue to commit additional payments above the annual employer contribution to save ongoing costs in future years. These projected additional payments may be adjusted annually based on the updated Unfunded Actuarial Accrued Liability (UAAL) in the annual Actuarial Valuation Report, the economic environment, as well as available General Fund one-time funds. The additional payment planned in FY 2021-22 Proposed Budget is $22 million.

Finally, the Pension Funding Policy continues to address Council's position on funding the PSPRS and ASRS ARC or employer contribution each year by stating that "funding of the ARC from operating revenues will be a priority during the annual budget process, before other service enhancements are considered".

Attachments

Resolution No. 5466

Exhibit A - Pension Funding Policy Blackline

RESOLUTION NO. 5466

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CHANDLER, ARIZONA, ADOPTING THE UPDATED PENSION FUNDING POLICY AND ACCEPTING THE CITY'S SHARE OF ASSETS AND LIABILITIES UNDER THE PUBLIC SAFETY PERSONNEL RETIREMENT SYSTEM ACTUARIAL VALUATION REPORT.

WHEREAS, the City Financial Policies were developed many years ago to set standards for stewardship over financial resources and practices; and

WHEREAS, the City Financial Policies institutionalize strong financial management practices, clarify the strategic intent for financial management, define boundaries, manage risks to financial condition, support good bond ratings to minimize borrowing costs, and comply with established public management best practices; and

WHEREAS, the City Financial Policies provide a guide for sound fiscal planning and budgeting, while maintaining fiscal integrity; and

WHEREAS, the City Financial Policies are reviewed annually and are divided into nine categories including, Operating Management, Capital Management, Reserves, Debt Management, Long-Range Financial Planning, Grants Management, Investment, Accounting, Auditing and Financial Reporting, and Pension Funding; and

WHEREAS, The Arizona State Legislature passed House Bill 2097 in 2018 (Laws 2018, Chapter 112; Arizona Revised Statutes § 38-863.01), which requires the governing bodies of all Public Safety Personnel Retirement System (PSPRS) employers to adopt a pension funding policy and formally accept their share of the assets and liabilities based on the PSPRS Actuarial Valuation Report annually; and

WHEREAS, the City Council desires the Pension Funding Policy attached as Exhibit A, provides updates based on the June 30, 2020 Actuarial Valuation Reports, and addresses both PSPRS and Arizona State Retirement System (ASRS), clearly communicates the Council's pension funding objectives, its commitment to City employees and the sound financial management of the City, and complies with the statutory requirements of Laws 2018, Chapter 112;

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Chandler, Arizona, as follows:

Section 1. The Council hereby adopts the Pension Funding Policy attached hereto as Exhibit A and incorporated herein by this reference.

Section 2. The Council hereby accepts, as set forth in the Pension Funding Policy, the City's share of assets and liabilities based on the PSPRS Actuarial Valuation Reports.

PASSED AND ADOPTED by the City Council of the City of Chandler, Maricopa County, Arizona, this 22nd day of April, 2021.

ATTEST:

CITY CLERK MAYOR

CERTIFICATION

I HEREBY CERTIFY that the above and foregoing Resolution No. 5466 as duly passed and adopted by the City Council of the City of Chandler, at a regular meeting held on the 22nd day of April, 2021, and that a quorum was present thereat.

CITY CLERK

APPROVED AS TO FORM:

CITY ATTORNEY

City of Chandler
Pension Funding Policy
Public Safety Personnel Retirement System and Arizona State Retirement System

The intent of this policy is to clearly communicate the Council's pension funding objectives, its commitment to our employees and the sound financial management of the City, and to comply with new statutory requirements of Laws 2018, Chapter 112, including reviewing and adopting this policy annually.

The Government Finance Officers Association (GFOA) recommends the adoption of a pension funding policy that address three core elements:

- **Actuarial Cost Method** – The technique used to allocate the total present value of future benefits over an employee's working career (normal cost/service cost).
- **Asset Smoothing Method** – The technique used to recognize gains or losses in pension assets over some period of time so as to reduce the effects of market volatility and stabilize contributions.
- **Amortization Policy** – The length of time and the structure selected for increasing or decreasing contributions to systematically eliminate any unfunded actuarial accrued liability or surplus.

In addition to the three core elements identified by the GFOA, this policy also addresses the Council's position on:

- **Pension Funding Goal**
- **Funding Pension Cost**

Several terms are used throughout this policy:

Unfunded Actuarial Accrued Liability (UAAL) – The difference between trust assets and the estimated future cost of pensions earned by employees. The UAAL reflects the difference between actual results (interest earnings, member mortality, disability rates, etc.) and the assumptions used in previous actuarial valuations.

Annual Required Contribution (ARC) – The annual amount required to pay into the pension funds, as determined through annual actuarial valuations. It is comprised of two primary components: normal pension cost (the estimated cost of pension benefits earned by employees in the current year) and amortization of UAAL (the cost needed to cover the unfunded portion of pensions earned by employees in previous years). The UAAL is collected over a period of time referred to as the amortization period. The ARC is a percentage of the current payroll.

Funded Ratio – The ratio of fund assets to actuarial accrued liability. The higher the ratio, the better funded the pension, with 100% representing fully funded.

Intergenerational Equity – Ensures that no generation is burdened by substantially more or less pension costs than past or future generations.

The City's police and fire employees who are regularly assigned hazardous duty participate in the Public Safety Personnel Retirement System (PSPRS). All other eligible employees are covered by the Arizona State Retirement System (ASRS).

Public Safety Personnel Retirement System (PSPRS)

PSPRS is administered as an agent multiple-employer pension plan. An agent multiple-employer plan has two main functions: 1) to comingle assets of all plans under its administration, thus achieving economy of scale for more cost efficient investments and investing those assets for the benefit of all members under its administration, and 2) to serve as the statewide uniform administrator for the distribution of benefits.

Under an agent multiple-employer plan, each agency participating in the plan has an individual trust fund reflecting that agencies' assets and liabilities. Under this plan, all contributions are deposited to and distributions are made from that trust fund's assets, each trust fund has its own funded ratio and contribution rate, and each trust fund has a unique annual actuarial valuation. The City of Chandler has two trust funds, one for police employees and one for fire employees.

The three core elements outlined by the GFOA guidance are addressed by the statewide PSPRS board and discussed in section G of the annual individual actuarial valuations, which can be found on the PSPRS website. http://www.psprs.com/investments--financials/annual-reports

Council formally accepts the assets, liabilities, and current funding ratio of the City's PSPRS trust funds for Tier 1 and Tier 2 members from the June 30, ~~2019~~2020 actuarial valuation, which are detailed below.

Trust Fund	Assets	Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio
Chandler Police	~~$163,495,339~~	~~$281,104,973~~	~~$117,609,634~~	~~58.2%~~
Chandler Fire	~~106,619,514~~	~~169,512,224~~	~~62,892,710~~	~~62.9%~~
City of Chandler Totals	~~**$270,114,853**~~	~~**$450,617,197**~~	~~**$180,502,344**~~	~~**59.9%**~~

Trust Fund	Assets	Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio
Chandler Police	$192,743,535	$307,211,347	$114,467,812	62.7%
Chandler Fire	123,776,647	180,448,891	56,672,244	68.6%
City of Chandler Totals	**$316,520,183**	**$487,660,238**	**$171,140,056**	**64.9%**

PSPRS Funding Goal

Pensions that are less than fully funded place the cost of service provided in earlier periods (amortization of UAAL) on the current taxpayers. Fully funded pension plans are the best way to achieve taxpayer and member intergenerational equity. Most funds in PSPRS are significantly underfunded and fall well short of the goal of intergenerational equity.

The Council's PSPRS funding ratio goal is to achieve 100% (fully funded) by June 30, 2036, and reduce the annual employer contribution. Council established this goal for the following reasons:

- The PSPRS trust funds represent only the City of Chandler's liability.
- The fluctuating cost of an UAAL causes strain on the City's budget, affecting our ability to maintain, enhance, or add new services in the future.
- A fully funded pension is the best way to achieve taxpayer and member intergenerational equity.

Council has taken the following actions to achieve this goal:

- The City chose the 20-year amortization period instead of the 30-year one-time option, did not defer the *Fields* case (paid the full employer contribution rate increase in one year versus spreading over 3 years), and did not take advantage of PSPRS's credit service model option related to the *Parker* case to apply toward future retirement payments when refunding excess employee contributions.
- The City pays the full estimated employer contribution at the beginning of the Fiscal Year versus paying the actual amount through bi-weekly payrolls, allowing PSPRS to invest at a higher rate thereby increasing the amount of interest applied towards the City's UAAL.
- The City maintains the ARC payment from operating revenues – Council is committed to maintaining the full ARC payment (normal cost and UAAL amortization) from operating funds. The estimated combined ARC for FY ~~2019-20~~2020-21 ~~is~~ WAS ~~$18.4~~19.9 million and FY ~~2020-21~~2021-22 is approximately ~~$19.9~~19.6 million and will be able to be paid from operating funds without diminishing City services.
- The City will commit additional payments above the ARC to achieve reduced ARC payments in the future. This projected additional payment to lower long term costs may be adjusted annually based on the updated UAAL, economic environment, and available General Fund one-time funds.
    - Additional payments to date total ~~$37~~52.5 million and include - $2.5 million in FY 2016-17, $5 million in FY 2017-18, $5 million in FY 2018-19, ~~and~~ $25 MILLION in FY 2019-20, AND $15 MILLION IN FY 2020-21.
    - The additional payment planned in FY ~~2020-21~~2021-22 is ~~$15~~22 million, ~~and will be held until COVID-19 impacts are known~~. The prior year's budget compared to

actual expenditures and updated UAAL will be reviewed annually and the excess payment will be adjusted accordingly.

Based on these actions, the Council's current plan is to achieve its goal of 100% funding by June 30, 2036, make additional payments early to save ongoing costs in future years, all while meeting the timeline set forth by the PSPRS June 30, ~~2019~~2020, actuarial valuation. The pay-down plan will be reviewed annually.

Funding PSPRS Pension Cost

It is the Council's policy that funding of the ARC from operating revenues will be a priority during the annual budget process before other service enhancements are considered.

Arizona State Retirement System (ASRS)

ASRS is administered as a cost-sharing multiple-employer pension plan. This means that all agencies statewide are part of the same trust which is administered by a single administrator. In this type of pension, the funded ratio and contribution rates are the same for all participating entities. The City of Chandler's proportionate share comprises approximately 0.~~76~~72% of the total system.

The three core elements outlined by the GFOA guidance are addressed by the statewide ASRS board and discussed in appendix III of the annual actuarial valuation, which can be found on the ASRS website. https://www.azasrs.gov/content/annual-reports

ASRS Funding Goal

Since the ASRS trust fund is comprised of all participating agencies, there is no ability for the City of Chandler to address or influence its individual funded ratio.

Funding ASRS Pension Cost

It is the Council's policy that funding of the ARC from operating revenues will be a priority during the annual budget process before other service enhancements are considered.

ITEM 15

City Council Memorandum **Management Services** **Memo No.** 21-047

Date: April 19, 2021

To: Mayor and Council

Thru: Joshua H. Wright, Acting City Manager
Dawn Lang, Management Services Director

From: Danielle Wells, Revenue and Tax Manager

Subject: New License Series 7, Beer and Wine Bar Liquor License application for Lauren Kay Merrett, Agent, Blacksheep Wine LLC, dba Blacksheep Wine & Merchant

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Proposed Motion:

Move for recommendation to the State Department of Liquor Licenses and Control for approval of State Liquor License No. 07070393, a Series 7, Beer and Wine Bar Liquor License, for Lauren Kay Merrett, Agent, Blacksheep Wine LLC, dba Blacksheep Wine & Merchant, located at 98 S. San Marcos Place, and approval of the City of Chandler, Series 7, Beer and Wine Bar Liquor License No. 300235 L7.

Discussion:

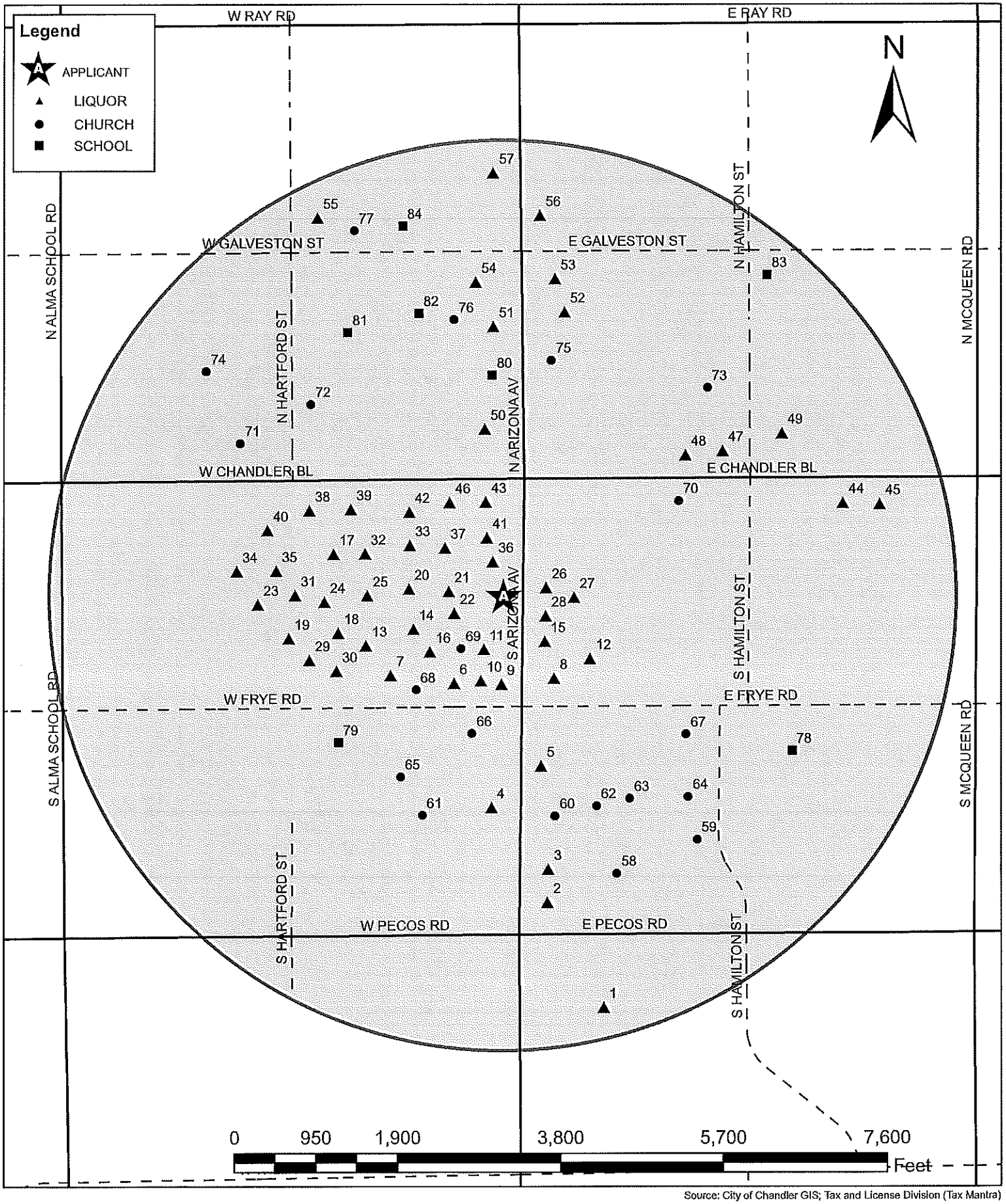
This application for the transfer of a liquor license was posted for hearing on April 22, 2021.

The Police Department reports no objections to the issuance of this license, and no written protests pursuant to A.R.S. 4-201(B) have been received. With a Series 7, Beer and Wine Bar Liquor License, the business may sell beer and wine only for on- or off-premise consumption.

Attachments

A-Map

B-Floor Plan



Source: City of Chandler GIS; Tax and License Division (Tax Mantra)

Liquor License Map - 98 S. San Marcos Place

Chandler • Arizona

This map shows the locations of all churches, schools and spirituous liquor outlets within a one (1) mile radius of the proposed location.

Please refer to attached list for additonal information

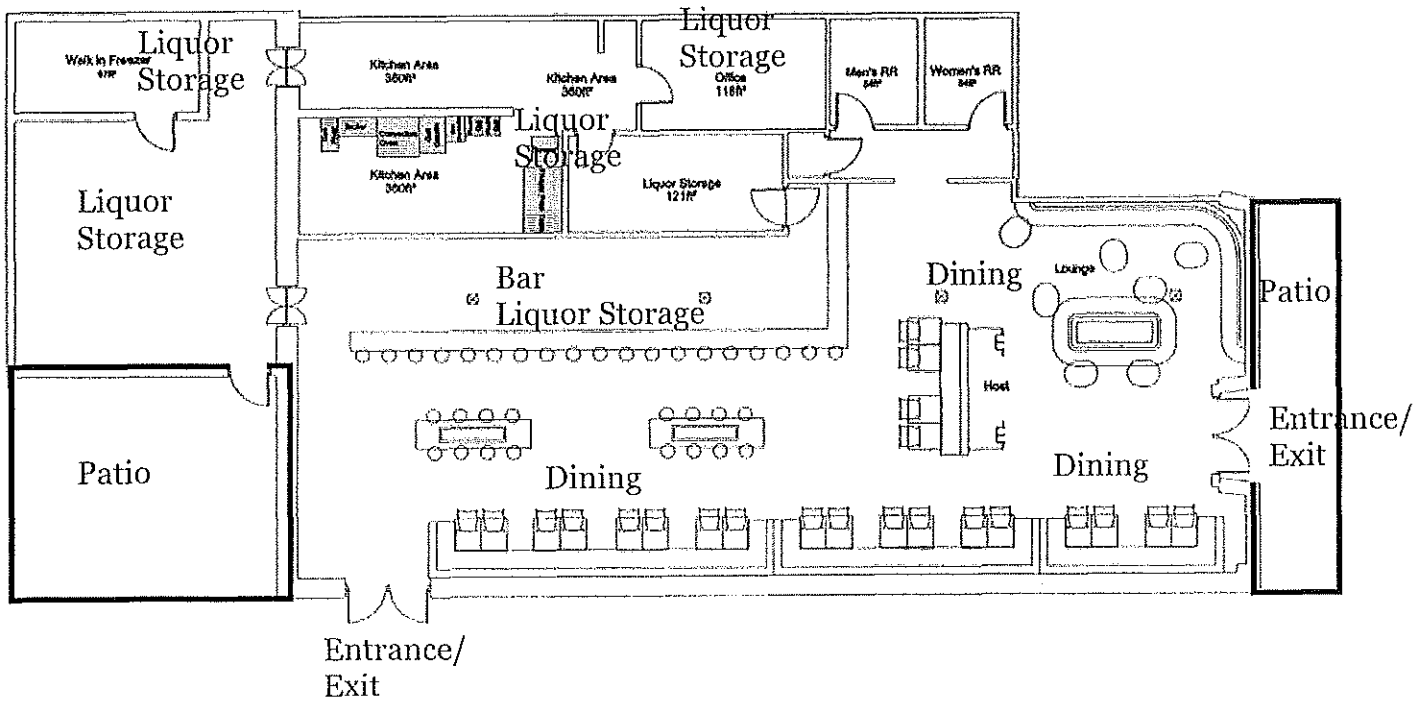
A Blacksheep Wine and Merchant
1 Walmart #2671
2 Veterans Of Foreign Wars #7401
3 El Herradero
4 Circle K Stores Inc #905
5 Payless Market
6 Gadzooks Enchiladas And Soup
7 The Sleepy Whale
8 Circle K Store #9187
9 Improvmania
10 Ghett Yo Taco
11 The Perch
12 Quarthaus
13 The Local Chandler
14 Downtown Chandler Steakhouse
15 Serrano's Mexican Food
16 Hilton Garden Inn Chandler Downtown
17 The Stillery
18 Jinya Ramen Noodle Bar
19 Charm Thai Cuisine
20 The Brickyard
21 Pedal Haus Brewery
22 Sasha'S Kitchen & Cocktails
23 Original Chop Shop Co
24 West Alley Bbq
25 Puro Cigar Bar
26 Inchin's Bamboo Garden
27 Soho 63
28 Tipsy Egg & The Uncommon
29 Cheba Hut
30 Bourbon Jacks Grill
31 Paletas Betty
32 Murphy'S Law Irish Pub
33 Mingle + Graze
34 Hidden House
35 San Tan Brewing Company Inc
36 Crust Simply Italian
37 Crowne Plaza - Chandler
38 Craft 64
39 Eastwind Sushi And Grill
40 Truland Burgers & Greens
41 Over Easy
42 San Marcos Golf Course
43 La Ristra
44 Singing Pandas Asian Restaurant & Bar
45 El Alamo Super Carniceria
46 Flix Brewhouse Az LLC
47 Rapid-O Mart
48 La Lumbrera Carniceria
49 Chandler Boulevard Lounge
50 Chandler Center For The Arts
51 Max And Teds 480
52 Chodang Tofu Restaurant
53 La Familia New Market
54 Chandler Liquors
55 Kwik Mart
56 Casa Maria Mexican Restaurant
57 7-Eleven 13011e
58 Grace Memorial
59 Chandler Foothills Community Church
60 Methodist Church
61 Chandler Church
62 Mount Olive Missionary Baptist Church
63 Pentacost Church of Jesus Christ
64 Centro De Alabanza Juda
65 Missionary Baptist Church
66 Azcend
67 Door Christian Center
68 Church of God
69 Iglesia Del Nazareno
70 Centro Evangelistico Church of God
71 Kingdom Hall Church
72 Church of Nazarene
73 East Valley Apostalic Church
74 Holy Trinity Lutheran Church
75 LDS Seminary
76 International Assembly of God
77 St Marys Church
78 Frye Elementary School
79 San Marcos Elementary School
80 Chandler High School
81 Austin Field
82 Arizona College Prep - Oakland Campus
83 Galveston Elementary School
84 St Mary-Basha Catholic School

NOTE: The information provided on this page represents all active Liquor Licenses which may include businesses in transition to a new owner/use. Therefore, the prior business name may still be listed since the license has

Blacksheep Wine & Merchant
98 S. San Marcos Pl.,
Chandler AZ 85225

N

2500 ft.^{2}



ITEM 16

City Council Memorandum **Management Services** **Memo No.** 21-048

Date: April 19, 2021

To: Mayor and Council

Thru: Joshua H. Wright, Acting City Manager
Dawn Lang, Management Services Director

From: Danielle Wells, Revenue and Tax Manager

Subject: New License Series 12, Restaurant Liquor License application for H J Lewkowitz, Agent, Chipotle Mexican Grill Inc., dba Chipotle Mexican Grill #3836

Proposed Motion:

Move for recommendation to the State Department of Liquor Licenses and Control for approval of the State Liquor Job No. 139220, a Series 12, Restaurant Liquor License, for H J Lewkowitz, Agent, Chipotle Mexican Grill Inc., dba Chipotle Mexican Grill #3836, located at 1055 W. Chandler Boulevard, and approval of the City of Chandler, Series 12, Restaurant Liquor License No. 300780 L12.

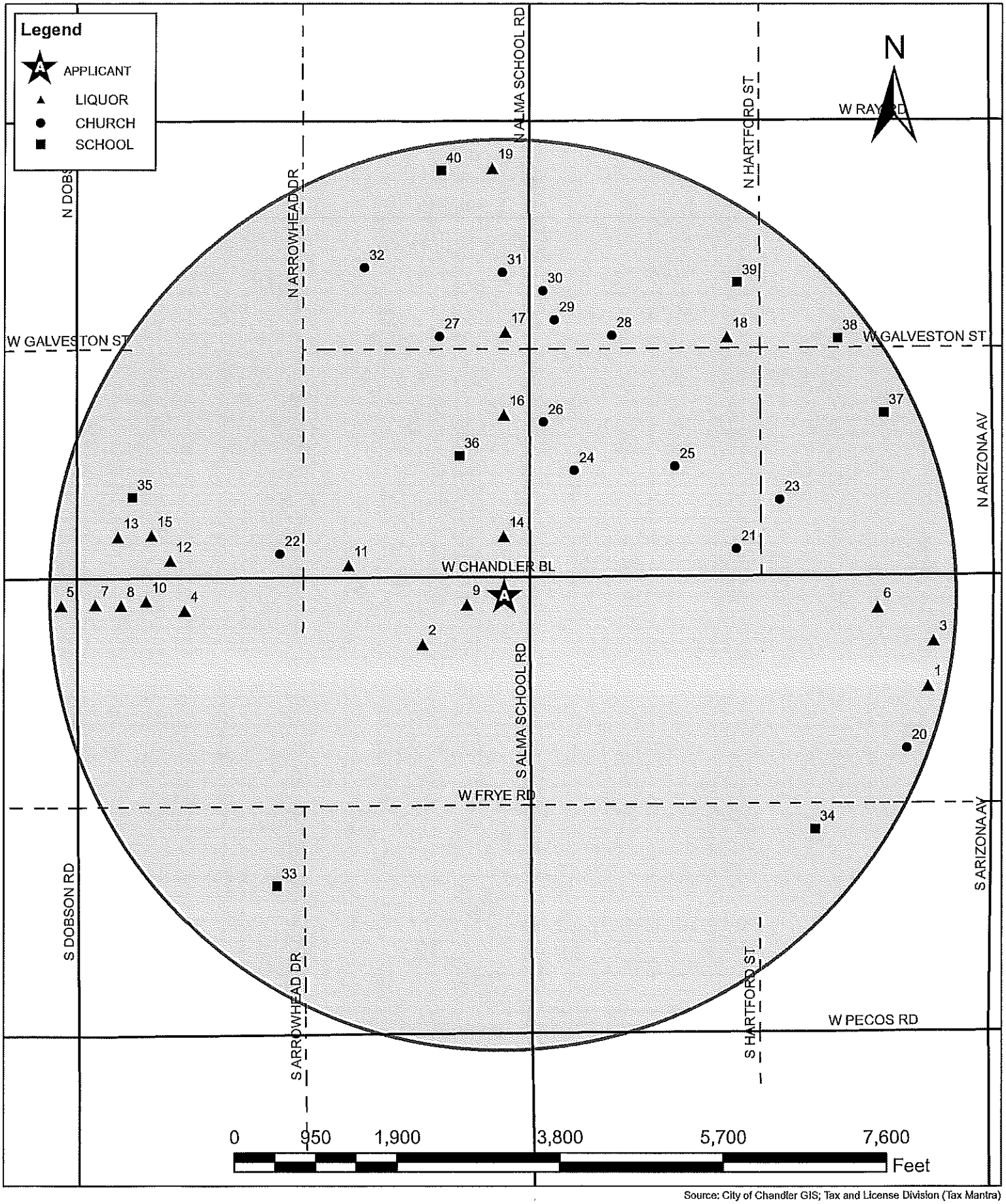
Discussion:

This application for a liquor license was posted for hearing on April 22, 2021.

The Police Department reports no objections to the issuance of this license, and no written protests pursuant to A.R.S. 4-201(B) have been received. With a Series 12, Restaurant Liquor License, the business may sell all liquors for on-premise consumption only, with a minimum of 40% of the gross receipts from the sale of food.

Attachments

A-Map
B-Floor Plan



Source: City of Chandler GIS; Tax and License Division (Tax Mantra)

Chandler • Arizona

Liquor License Map - 1055 W. Chandler Boulevard

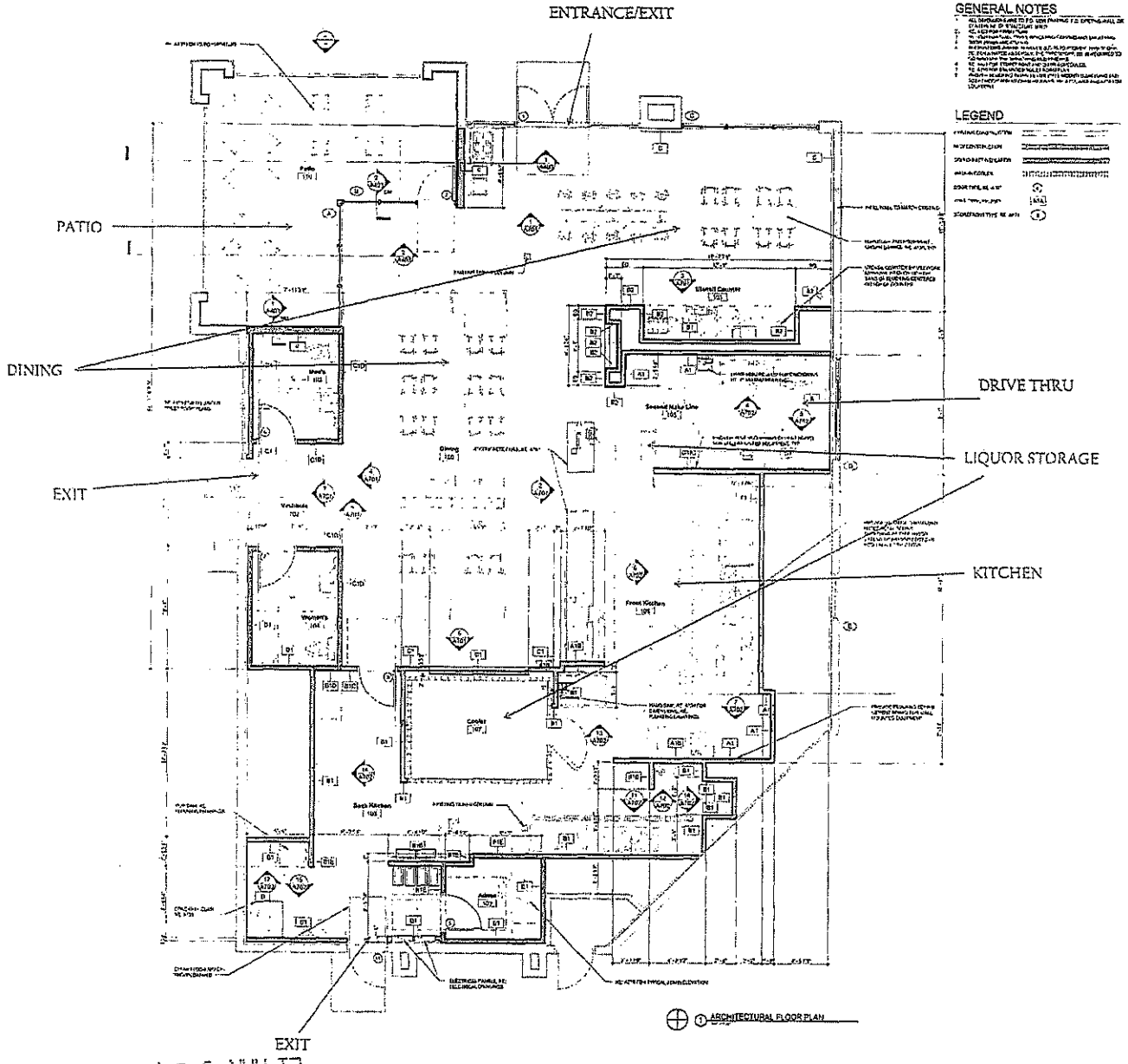
This map shows the locations of all churches, schools and spirituous liquor outlets within a one (1) mile radius of the proposed location.

Please refer to attached list for additonal information

A Chipotle Mexican Grill Inc
1 Hidden House
2 Safeway Inc #1604
3 Crowne Plaza - Chandler
4 Elks Lodge #2429
5 Cvs/Pharmacy #9283
6 San Marcos Golf Course
7 Circle K Store #9162
8 Walgreen Arizona Drug Co
9 Gilligan'S Arco Am/Pm
10 Pizza Hut #35875
11 Circle K Corp 2854
12 The Hungry Monk
13 99 Ranch Market #53
14 Sunny'S Breakfast & Lunch
15 Peter Piper Pizza #1216
16 Floridino's Pizza & Pasta
17 Si Senor Restaurant
18 Kwik Mart
19 American Legion Post 91
20 Iglesia Del Nazereno
21 Kingdom Hall Church
22 Christ Community Church
23 Church of Nazerene
24 St Matthews Episcopal Church
25 Holy Trinity Luthern Church
26 Church of Christ
27 Chandler Seventh Day Adventist Church
28 Sonrise Faith Community Church
29 Church of God
30 Iglesia de Dios Pentecostal Church
31 Community of Christ Church
32 LDS Church
33 Conley Elementary School
34 San Marcos Elementary School
35 Bright Beginnings School
36 Arizona College Prep- Erie Campus
37 Arizona College Prep- Oakland Campus
38 St. Mary-Basha Catholic School
39 Hartford Sylvia Encinas Elementary School
40 Bright Horizons Family Solutions

NOTE: The information provided on this page represents all active Liquor Licenses which may include businesses in transition to a new owner/use. Therefore, the prior business name may still be listed since the license has not been final closed.

CHIPOTLE MEXICAN GRILL #3836
1055 W. Chandler Blvd.
Chandler, AZ 85224
3,603 SQFT



DUNGAN DESIGN GROUP
8826 Santa Fe Drive Suite 3
Overland Park, KS 66212
913-341-2456

Alma School & Chandler
Store No. 3836
1055 W. Chandler Blvd.
Chandler, AZ 85224

Architectural Floor Plan

A110

CHANDLER arizona
Community of Innovation

City Council Memorandum **Management Services** **Memo No.** N/A

Date: April 19, 2021
To: Mayor and Council
Thru: Joshua H. Wright, Acting City Manager
Dawn Lang, Management Services Director
From: Kristi Smith, Accounting Manager
Subject: Cooperative Agreement with JPMorgan Chase Bank, N.A., for Banking Services

Proposed Motion:

Move City Council approve a cooperative agreement with JPMorgan Chase Bank, N.A., for Banking Services for the period beginning May 1, 2021, through December 31, 2024, in an amount not to exceed $34,000 per year.

Background/Discussion:

JPMorgan Chase Bank, N.A. (JPMorgan), has been the City's banking service provider since 2005. The City's banking needs consist of the following types of services: checking account maintenance, deposits, electronic payments and deposits (ACH), wire transfers, credit card payment processing and online bank transactions and reporting. In 2010, the City of Tempe issued a Request for Proposals (RFP) for Municipal Banking Services on behalf of the City of Chandler and the City of Tempe to financial institutions that provided those services in order to select a single servicing bank for each city. Given the wide range of Municipal Banking Services, responses are typically limited to larger banking institutions. Upon evaluation of responses, a contract was negotiated with JPMorgan. The contract with JPMorgan was for an initial period of four years, January 1, 2011, through December 31, 2014, with the ability to extend for three, two-year extensions. The contract expired on December 31, 2020, however, JPMorgan agreed to a four-month extension, through April 30, 2021.

Evaluation:

The City of Mesa issued a competitive solicitation in 2019 for banking services and awarded a contract to JPMorgan for the term of January 1, 2020, through December 31, 2024, which may be extended for up to three additional years. Since JPMorgan has been the City's banking service provider since 2005, and based on analysis of the services and pricing included therein, it was determined that it would be in the City's best interest to utilize Mesa's contract cooperatively. The City's term will begin on May 1, 2021, and will expire December 31, 2024. The contract may be extended for up to three additional years.

Financial Implications:

Historically, credits are earned based on the Fed Funds rate that offset the cost of service provided on this banking contract. However, due to low interest rates in recent years, the City has not earned enough credits and a one-time budget has been approved over the last few years to fund this net cost of the Citywide bank fees. The estimated maximum cost for this item, given the current Fed Funds rate, is $34,000 per year, but may be reduced as interest rates rise.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
101.1290.5807	General Fund	Bank Fees	$34,000	N

Attachments

Banking Services Agreement - Chase

COOPERATIVE PURCHASING AGREEMENT FOR BANKING SERVICES BETWEEN the City of Chandler, AZ AND JPMORGAN CHASE BANK, N.A.

THIS COOPERATIVE PURCHASING AGREEMENT FOR BANKING SERVICES (this "**Agreement**") is entered into as of _____, 202__ (the "**Effective Date**"), between the City of Chandler, AZ ("**Customer**"), and JPMorgan Chase Bank, N.A. ("**Contractor**").

Recitals

A. After a competitive procurement process, City of Mesa, Arizona ("**Mesa**") and Contractor entered into that certain City of Mesa Agreement Pursuant to Solicitation dated as of December 9, 2019 (together with all incorporated documents and exhibits and as amended from time to time pursuant to its terms, the "**Mesa Contract**") under which Contractor agreed to perform certain banking services (the "**Services**") for Mesa, as further described in the Mesa Contract. A copy of the Mesa Contract is attached hereto as **Exhibit D**.

B. The Mesa Contract may be extended for use by other municipalities, school districts and government agencies in the State of Arizona with which Mesa has intergovernmental agreements or to other governmental entities that participate in the Strategic Alliance for Volume Expenditures cooperative, with the approval of Contractor on a case by case basis, which approval will be based on criteria determined by Contractor in its sole discretion and subject to pricing and other adjustments in terms and conditions as may be agreed to between Contractor and such other entity and set forth in a written agreement between them.

C. Customer either participates in the Strategic Alliance for Volume Expenditures cooperative or has entered into an intergovernmental agreement with Mesa and has determined that its usage of the Mesa Contract is in accordance with the Customer's statutes, codes, ordinances, charter and/or procurement rules and regulations. Customer has requested that Contractor provide certain services to Customer under the terms of the Mesa Contract and Contractor is willing to do so, subject to the terms and conditions of this Agreement.

Agreement

Customer and Contractor therefore agree as follows:

1. **Scope of Work**. The services to be provided by Contractor to Customer under this Agreement are the services listed on **Exhibit A-1 Pricing Schedule** attached to this Agreement ("**Included Services**"). Contractor shall commence or implement the Included Services by a date to be mutually agreed upon following full execution of this Agreement. To the extent Customer requests and Contractor agrees to add any functionality, feature or service that is not listed on **Exhibit A-1 Pricing Schedule**, the implementation of such functionality, feature or service may be subject to additional terms and fees to be mutually agreed upon at the time of Customer's request.

2. **Exceptions and Modifications to Mesa Contract.** The following provisions of the Mesa Contract are hereby modified for purposes of their incorporation within this Agreement or excluded from this Agreement, as provided below and as elsewhere provided in this Agreement:

A. **Prices and Earnings Credit Rate.** Contractor will perform the Included Services for Customer at the respective rates specified in the pricing schedule attached as **Exhibit A-1 Pricing Schedule** to this Agreement, which supersedes all pricing and service fees set forth in the Mesa Contract. The earnings credit rate applicable to Customer's eligible balances shall be as set forth in **Exhibit B - Earnings Credit Rate**, which supersedes any earnings credit rate set forth in the Mesa Contract. In addition to the compensation described above, Customer shall pay and be liable to Contractor for all costs and expenses (including, without limitation, fees, fines, taxes, interest and penalties) related to: (1) Contractor's acceptance or execution of any request, instruction or direction from Customer; (2) any credit extended to Customer in connection with the Included Services; or (3) Customer's breach or failure to comply with this Agreement, the Included Service Terms or any laws, statutes, codes, rules, regulations or policies applicable to any transaction that Customer requests, instructs or directs Contractor to process or execute (including, without limitation, clearing house rules, funds transfer rules, Federal Reserve Operating Circulars, and the Uniform Commercial Code as in effect from time to time in the State of Arizona).

B. **Payment Method.** Unless Customer selects another payment method acceptable to Contractor, Customer authorizes Contractor to: (1) apply Customer's earnings credit allowance against the fees and other compensation amounts reflected in the account analysis statement made available to Customer for each monthly billing period and (2) automatically debit from Customer's accounts on the fifteenth (15th) calendar day of each month (or the next banking day if the fifteenth (15th) calendar day falls on a weekend or a bank holiday) any fees and other compensation amounts that remain unpaid after Contractor applies the earnings credits allowance for such billing period.

C. **Term of the Agreement.** This Agreement shall commence as of the Effective Date and shall expire the date that the Mesa Contract expires or terminates. The current term of the Mesa Contract ends on December 31, 2024. On the mutual written agreement of Mesa and Contractor, the current term of the Mesa Contract may be renewed up to a maximum of three (3) years after the end of such term. By executing a written amendment to this Agreement, Customer and Contractor may agree to extend the term of this Agreement for a corresponding timeframe with the renewal of the Mesa Contract, subject to mutually agreeable adjustments to the pricing and terms of this Agreement.

D. **Other Exclusions.** Any references or provisions in the Mesa Contract (including, but not limited to, the solicitation for banking services and Contractor's response) with respect to the following matters are excluded from this Agreement: incentives, credits, extensions of credit, any obligation of the Bank to pay for substitute services and local laws, statutes, ordinances, rules and regulations specific to Mesa.

3. **Terms and Conditions applicable to Included Services.** The account and service terms attached to the Mesa Contract are superseded and replaced by the account terms, service terms and other documents that Contractor requires for the administration, implementation or operation of the Included Services (together with any addenda, schedules, supplements, and other attachments, the "**Included Service Terms**"), including, without limitation, those attached as **Exhibit C – Included Service Terms** to this Agreement. Subject to the provisions of this Agreement and any subsequent amendments hereto, the terms and conditions that apply to the Included Services shall be those contained within the Mesa Contract. All references to the rights and obligations of Mesa in the Mesa Contract shall be deemed to refer to the rights and obligations of Customer with respect to Contractor's performance of the Included Services for Customer. Unless otherwise defined in this Agreement, capitalized terms used in this Agreement shall have the same meanings as set forth in the Mesa Contract.

4. **Order of Precedence.** This Agreement is comprised of the documents listed below and, in the event of any conflict or inconsistency among the documents, the order of precedence shall be as follows:

   A. The terms of the body of this Agreement;
   B. The exhibits attached to this Agreement;
   C. Except for terms, provisions and documents that are excluded, superseded or replaced as provided herein, the documents listed in Section 4 titled "Document Order of Precedence" of the Mesa Contract, subject to the order of precedence set forth in the Mesa Contract.

5. **Amendments to Mesa Contract.** If the Mesa Contract is amended pursuant to its terms, Contractor may, if it is agreeable to providing such amended terms to Customer, notify Customer of such amendment and, if Customer agrees to such amended terms, this Agreement shall be amended accordingly by a written document executed by Customer and Contractor.

6. **Compliance with Competitive Procurement Requirements.** Customer represents and warrants that it has determined, based upon its own review of applicable statutes, codes, ordinances, charter and/or procurement rules and regulations, that it has the authority to procure services under the Mesa Contract and enter into this Agreement without initiation of its own competitive procurement process.

7. **Notices.** All notices given pursuant to the terms of this Agreement shall be in writing and addressed to the relevant party at its address listed below.

8. **Entire Agreement.** This signed document and all exhibits attached hereto, as well as the Mesa Contract, except as provided in this Agreement, comprise the entire agreement between Customer and Contractor with respect to the subject matter hereof. Any prior oral or written agreements between the parties with respect to the subject matter hereof are merged into and superseded by this Agreement.

[REST OF PAGE INTENTIONALLY LEFT BLANK – SIGNATURE PAGE FOLLOWS]

Accepted and agreed to as of the Effective Date.

CITY OF CHANDLER

By:_____

Name:_____

Title: Mayor

APPROVED AS TO FORM:

By:_____
City Attorney

ATTEST:

By:_____
City Clerk

Address for Notices:

Procurement Division
175 S. Arizona Avenue, 3rd Floor
Chandler, AZ 85225
Attn: Procurement Officer

JPMORGAN CHASE BANK, N.A.

By: Dan K. Warren

Name: Dan K. Warren

Title: Authorized Individual

Address for Notices:

201 N Central Ave, 21st Fl
Mail Code: AZ1-1178
Phoenix, AZ, 85004-8001
Attn: Dan Warren or Gov't Industry Manager

List of Exhibits [*to be attached*]:

Exhibit A-1 – Pricing Schedule

Exhibit A-2 – Pricing Comparison (current contract vs new contract)

Exhibit B - Earnings Credit Rate

Exhibit C – Included Service Terms

Exhibit D – City of Mesa Agreement Pursuant to Solicitation dated as of December 9, 2019

Pro Forma Analysis

April 2021

J.P.Morgan

Customer: CITY OF CHANDLERMAIL STOP 702

ECR Rate: 0.1800%

Service Analysis*

Service Description	Estimated* Volumes	Unit Price	Est. Monthly Service Charge
ACCOUNT SERVICES			
ACCOUNT MAINTENANCE	6	$5.0000	$30.00
STATEMENT CYCLES	1	$0.0000	$0.00
ARP PAID ITEM RETURN CREDIT	3	$0.0000	$0.00
POST NO CHECKS MAINTENANCE	2	$0.0000	$0.00
CREDIT POSTED- ELECTRONIC	662	$0.1000	$66.20
DEBIT POSTED - ELECTRONIC	313	$0.1000	$31.30
CASH CONCENTRATION MAINTMASTER	1	$0.0000	$0.00
CASH CONCENTRATION MAINT SUB	5	$15.0000	$75.00
Subtotal			$202.50
AUTOMATED CLEARING HOUSE			
CREDIT RECEIVED	577	$0.1000	$57.70
DEBIT RECEIVED	247	$0.1000	$24.70
RETURN ITEM	4	$1.7500	$7.00
NOTIFICATION OF CHANGE	2	$1.0000	$2.00
RETURN NOTIFICATION - ONLINE	5	$0.0000	$0.00
NOTIF OF CHANGE - ONLINE	2	$0.0000	$0.00
ELOCKBOX FILE PROCESSING	39	$10.0000	$390.00
CREDIT ORIGINATED - JPM ACCESS	5,172	$0.0400	$206.88
DEBIT ORIGINATED - JPM ACCESS	530	$0.0400	$21.20
JPM ACCESS ACH MAINTENANCE	4	$10.0000	$40.00
ELOCKBOX RETURN - ELECTRONIC	2	$0.0000	$0.00
ELOCKBOX NOC - ELECTRONIC	150	$0.0000	$0.00
ADDENDA RECORD ORIGINATED	145	$0.0300	$4.35
TRANSACTION BLOCK MAINTENANCE	6	$7.5000	$45.00
ACH TRANS BLOCK AUTHORIZED ID	46	$0.5000	$23.00
ELOCKBOX MAINTENANCE	1	$0.0000	$0.00
ELOCKBOX TRANSACTION RECEIVED	15,319	$0.0400	$612.76
ELOCKBOX TRANSACTION REFORMAT	15,319	$0.0000	$0.00
ELOCKBOX TRN REPAIR MAINT	2	$95.0000	$190.00
ELOCKBOX TRN REPAIR ITEM EDIT	40	$0.5000	$20.00
Subtotal			$1,644.59
BALANCE BASED CHARGES			
BALANCE BASED CHARGES	1	$1,798.8500	$1,798.85
Subtotal			$1,798.85
BANKING CENTER SERVICES			
BRANCH CREDITS POSTED	46	$1.2500	$57.50
BRANCH ORDER CURRENCY STRAP	8	$0.3500	$2.80
BRANCH DEPOSIT IN NON STD BAG	6	$2.0000	$12.00
BRANCH ORDER PROCESSED	3	$3.5000	$10.50
NIGHT DROP CASH VERIFICATION	359	$0.0008	$0.29
TELLER LINE CASH VERIFICATION	104	$0.0015	$0.16
Subtotal			$83.25
DEPOSITORY SERVICES			
CHECK DEPOSITED-ON US	420	$0.0200	$8.40
CHECK DEPOSITED-TRANSIT	1,886	$0.0400	$75.44
REMOTE DEPOSIT CAPTURE MAINT	1	$5.0000	$5.00
DEPOSIT CORRECTION	2	$0.0000	$0.00
CREDITS POSTED	307	$0.3500	$107.45
RETURN ITEM	9	$1.5000	$13.50
RETURN ITEM REDEPOSIT	5	$0.7500	$3.75
Subtotal			$213.54
DISBURSEMENT SERVICES			
CHECK CASHING NON-ACCT HOLDER	2	$2.0000	$4.00
DELUXE 3RD PARTY PRINT SVCS	1	$157.1300	$157.13
CHECK / DEBIT POSTED	837	$0.1000	$83.70
CHASE CONNECT SLTN CHKS POSTED	837	$0.0000	$0.00
IMAGING MAINTENANCE	1	$0.0000	$0.00
STOP PAYMENT - ELECTRONIC	1	$10.0000	$10.00
DATA DOWNLOAD	4	$20.0000	$80.00
IMAGE RETRIEVAL PER RETRIEVE	3	$1.0000	$3.00
IMAGE RETRIEVAL >91DAY	6	$5.0000	$30.00
Subtotal			$367.83
INT REC & PAY - RECONCILE			
REMITTANCE ASSOCIATION MAINT	1	$150.0000	$150.00
Subtotal			$150.00
INT REC & PAY - REPORT			
RECEIVABLES MAINT - ONLINE	2	$40.0000	$80.00

LONG TERM STORAGE - CHECK	7,907	$0.0250	$197.68
LONG TERM STORAGE - DOCUMENT	8,895	$0.0250	$222.38
RECEIVABLES MAIN - REPORTS	6	$0.0000	$25.00
RECEIVABLES PRESENTMENT MAINT	1	$25.0000	$60.00
LONG TERM STORAGE - PAYMENT	559	$0.0300	$16.77
TRANSMISSION MAINT - DATA	1	$75.0000	$75.00
TRANSMISSION PER ITEM - DATA	16,940	$0.0250	$423.50
Subtotal			$1,100.33
INTERNATIONAL SERVICES			
DEPOSITED CHECK - CANADIAN	2	$0.0000	$0.00
Subtotal			$0.00
JPMORGAN ACCESS			
MONTHLY SERVICE	1	$40.0000	$40.00
ACCOUNTS REPORTED	7	$20.0000	$140.00
TRANSACTIONS REPORTED - 90 DAY	2,267	$0.0500	$113.35
EXTENDED TRANSACTION DETAIL	7,759	$0.0000	$0.00
Subtotal			$293.35
OTHER CHARGES AND CREDITS			
MISCELLANEOUS SERVICES	1	$35.5600	$35.56
RESEARCH ADJUSTMENT DEBIT	1	$0.0000	$0.00
Subtotal			$35.56
RECEIPTSTREAM/ENH REC SVCS			
EDI ACCOUNT FEE	1	$50.0000	$50.00
Subtotal			$50.00
RECONCILIATION SERVICES			
PAYEE NAME VERIFICATION	836	$0.0300	$25.08
POSITIVE PAY MAINTENANCE	4	$0.0000	$0.00
EXCEPTION ITEM	8	$1.0000	$8.00
PP NON RECON MAINTENANCE	4	$0.0000	$0.00
POS PAY WITHOUT RECON ITEMS	837	$0.0000	$0.00
CHECK EXCEPTION RETURN	3	$0.0000	$0.00
DATA ENTRY - MANUAL	3	$1.0000	$3.00
IMAGE CAPTURE PER ITEM	841	$0.0150	$12.62
Subtotal			$48.70
SCANNABLE LOCKBOX			
SNLB SCANNABLE ITEM	6,954	$0.1500	$1,043.10
SNLB OCR DOCUMENT	7,711	$0.0100	$77.11
SNLB OCR DOC IMAGE CAPTURE	7,711	$0.0200	$154.22
SPECIAL IMAGE HANDLING	10	$0.2000	$2.00
SNLB BALANCING	7,907	$0.1000	$790.70
Subtotal			$2,067.13
VAULT SERVICES			
VAULT DEPOSIT	307	$1.0000	$307.00
VAULT DEPOSIT PER $1,000	68	$0.6500	$44.20
VAULT DEPOSIT RECEIPT MAILERS	2	$0.0000	$0.00
VAULT NOTES DEPOSITED	3,528	$0.0000	$0.00
VAULT DEPOSIT ROLLED COIN	10	$0.0600	$0.60
VAULT ORDER COIN ROLLS	16	$0.1000	$1.60
VAULT STANDARD ORDERS	2	$2.0000	$4.00
VAULT ORDER CURRENCY STD STRAP	6	$0.3500	$2.10
VAULT ORDER CURR NON STD STRAP	201	$0.0250	$5.03
VAULT DEPOSIT ADJUSTMENT	2	$1.0000	$2.00
Subtotal			$366.53
WHOLESALE LOCKBOX			
LOCKBOX - MAINT	1	$75.0000	$75.00
WHOLESALE ITEM	953	$0.2100	$200.13
UNPROCESSABLE ITEM	7	$0.2000	$1.40
NO CHECK ITEM	15	$0.2000	$3.00
CHECK CLEARING	7,907	$0.0800	$632.56
INCOMING COURIER PACKAGE	2	$20.0000	$40.00
CASH PROCESSING	1	$10.0000	$10.00
CHECK MICR CAPTURE	7,907	$0.0100	$79.07
DATA CAPTURE	22,345	$0.0080	$178.76
PAPER DELIVERY PREP	7	$0.2000	$1.40
POSTAGE	7	$0.4229	$2.96
DOCUMENT IMAGE CAPTURE	1,181	$0.1000	$118.10
DEPOSIT PREPARATION	30	$1.0000	$30.00
ONLINE DECISION MGR MAINT	1	$50.0000	$50.00
Subtotal			$1,422.38
WIRE - U.S.			
FW SURCHARGE $10 MILLION+ D/C	1	$0.1400	$0.14
ELECTRONIC FED DEBIT S/T	3	$7.0000	$21.00
REPETITIVE INSTRUCTION STORAGE	15	$0.0000	$0.00
FED TRANSFER FEE	7	$0.0000	$0.00
FED CREDIT S/T	4	$2.0000	$8.00
ADVICE - NOT CHARGE	7	$0.0000	$0.00
Subtotal			$29.14

Estimated Total Charge for Services	$9,999.68

Pro forma Notes, Assumptions & Disclaimers

Additional Pricing Detail

STATEMENT CYCLES 1010	
Unit Price	0.0000
Tiered	
Volume	Price
2+	5.0000

STATEMENT CYCLES - ENHANCED 1015	
Unit Price	0.0000
Tiered	
Volume	Price
2+	7.5000

* Volumes and Balances on this Pro Forma are estimated. Actual volumes and balances may be different, which will result in different charges than are specified above.

** Denotes Service is a one-time charge and will not appear on customer statement on a monthly basis.

Pro Forma Analysis

April 2021

J.P.Morgan

Customer: CITY OF CHANDLER

ECR Rate: 0.1800%

Service Analysis*

Service Description	Unit Price	Prior Unit Price
ACCOUNT SERVICES		
ACCOUNT MAINTENANCE	$5.0000	
STATEMENT CYCLES	$0.0000	
STATEMENT CYCLES - ENHANCED	$0.0000	
ARP PAID ITEM RETURN CREDIT	$0.0000	
POST NO CHECKS MAINTENANCE	$0.0000	
CREDIT POSTED- ELECTRONIC	$0.1000	$0.0000
DEBIT POSTED - ELECTRONIC	$0.1000	$0.0000
CASH CONCENTRATION MAINTMASTER	$0.0000	
CASH CONCENTRATION MAINT SUB	$15.0000	
Subtotal		
AUTOMATED CLEARING HOUSE		
CREDIT RECEIVED	$0.1000	$0.0000
DEBIT RECEIVED	$0.1000	$0.0000
RETURN ITEM	$1.7500	
NOTIFICATION OF CHANGE	$1.0000	
RETURN NOTIFICATION - ONLINE	$0.0000	
NOTIF OF CHANGE - ONLINE	$0.0000	
ELOCKBOX FILE PROCESSING	$10.0000	
CREDIT ORIGINATED - JPM ACCESS	$0.0400	
DEBIT ORIGINATED - JPM ACCESS	$0.0400	
JPM ACCESS ACH MAINTENANCE	$10.0000	
ELOCKBOX RETURN - ELECTRONIC	$0.0000	
ELOCKBOX NOC - ELECTRONIC	$0.0000	
ADDENDA RECORD ORIGINATED	$0.0300	
TRANSACTION BLOCK MAINTENANCE	$7.5000	
ACH TRANS BLOCK AUTHORIZED ID	$0.5000	
ELOCKBOX MAINTENANCE	$0.0000	
ELOCKBOX TRANSACTION RECEIVED	$0.0400	
ELOCKBOX TRANSACTION REFORMAT	$0.0000	
ELOCKBOX TRN REPAIR MAINT	$95.0000	
ELOCKBOX TRN REPAIR ITEM EDIT	$0.5000	
Subtotal		
BALANCE BASED CHARGES		
BALANCE BASED CHARGES	$1,798.8500	
Subtotal		
BANKING CENTER SERVICES		
BRANCH CREDITS POSTED	$1.2500	$0.3000
BRANCH ORDER CURRENCY STRAP	$0.3500	
BRANCH DEPOSIT IN NON STD BAG	$2.0000	
BRANCH ORDER PROCESSED	$3.5000	$2.0000
NIGHT DROP CASH VERIFICATION	$0.0008	
TELLER LINE CASH VERIFICATION	$0.0015	
Subtotal		
DEPOSITORY SERVICES		
CHECK DEPOSITED-ON US	$0.0200	
CHECK DEPOSITED-TRANSIT	$0.0400	
REMOTE DEPOSIT CAPTURE MAINT	$5.0000	
DEPOSIT CORRECTION	$0.0000	
CREDITS POSTED	$0.3500	
RETURN ITEM	$1.5000	
RETURN ITEM REDEPOSIT	$0.7500	
Subtotal		
DISBURSEMENT SERVICES		
CHECK CASHING NON-ACCT HOLDER	$2.0000	
DELUXE 3RD PARTY PRINT SVCS	$157.1300	
CHECK / DEBIT POSTED	$0.1000	$0.0850
CHASE CONNECT SLTN CHKS POSTED	$0.0000	
IMAGING MAINTENANCE	$0.0000	
STOP PAYMENT - ELECTRONIC	$10.0000	
DATA DOWNLOAD	$20.0000	
IMAGE RETRIEVAL PER RETRIEVE	$1.0000	
IMAGE RETRIEVAL >91DAY	$5.0000	
Subtotal		
INT REC & PAY - RECONCILE		
REMITTANCE ASSOCIATION MAINT	$150.0000	
Subtotal		

INT REC & PAY - REPORT		
RECEIVABLES MAINT - ONLINE	$40.0000	
LONG TERM STORAGE - CHECK	$0.0250	
LONG TERM STORAGE - DOCUMENT	$0.0250	
RECEIVABLES MAIN - REPORTS	$25.0000	$0.0000
RECEIVABLES PRESENTMENT MAINT	$60.0000	$25.0000
LONG TERM STORAGE - PAYMENT	$0.0300	
TRANSMISSION MAINT - DATA	$75.0000	
TRANSMISSION PER ITEM - DATA	$0.0250	
Subtotal		
INTERNATIONAL SERVICES		
DEPOSITED CHECK - CANADIAN	$0.0000	
Subtotal		
JPMORGAN ACCESS		
MONTHLY SERVICE	$40.0000	$55.0000
ACCOUNTS REPORTED	$20.0000	$25.0000
TRANSACTIONS REPORTED - 90 DAY	$0.0500	
EXTENDED TRANSACTION DETAIL	$0.0000	
Subtotal		
OTHER CHARGES AND CREDITS		
MISCELLANEOUS SERVICES	$35.5600	
RESEARCH ADJUSTMENT DEBIT	$0.0000	
Subtotal		
RECEIPTSTREAM/ENH REC SVCS		
EDI ACCOUNT FEE	$50.0000	
Subtotal		
RECONCILIATION SERVICES		
PAYEE NAME VERIFICATION	$0.0300	
POSITIVE PAY MAINTENANCE	$0.0000	
EXCEPTION ITEM	$1.0000	
PP NON RECON MAINTENANCE	$0.0000	
POS PAY WITHOUT RECON ITEMS	$0.0000	
CHECK EXCEPTION RETURN	$0.0000	
DATA ENTRY - MANUAL	$1.0000	
IMAGE CAPTURE PER ITEM	$0.0150	
Subtotal		
SCANNABLE LOCKBOX		
SNLB SCANNABLE ITEM	$0.1500	
SNLB OCR DOCUMENT	$0.0100	
SNLB OCR DOC IMAGE CAPTURE	$0.0200	
SPECIAL IMAGE HANDLING	$0.2000	
SNLB BALANCING	$0.1000	
Subtotal		
VAULT SERVICES		
VAULT DEPOSIT	$1.0000	$0.3000
VAULT DEPOSIT PER $1,000	$0.6500	$0.4423
VAULT DEPOSIT RECEIPT MAILERS	$0.0000	
VAULT NOTES DEPOSITED	$0.0000	
VAULT DEPOSIT ROLLED COIN	$0.0600	
VAULT ORDER COIN ROLLS	$0.1000	
VAULT STANDARD ORDERS	$2.0000	
VAULT ORDER CURRENCY STD STRAP	$0.3500	
VAULT ORDER CURR NON STD STRAP	$0.0250	
VAULT DEPOSIT ADJUSTMENT	$1.0000	
Subtotal		
WHOLESALE LOCKBOX		
LOCKBOX - MAINT	$75.0000	
WHOLESALE ITEM	$0.2100	
UNPROCESSABLE ITEM	$0.2000	
NO CHECK ITEM	$0.2000	
CHECK CLEARING	$0.0600	
INCOMING COURIER PACKAGE	$20.0000	
CASH PROCESSING	$10.0000	
CHECK MICR CAPTURE	$0.0100	
DATA CAPTURE	$0.0080	
PAPER DELIVERY PREP	$0.2000	
POSTAGE	$0.4229	
DOCUMENT IMAGE CAPTURE	$0.1000	
DEPOSIT PREPARATION	$1.0000	
ONLINE DECISION MGR MAINT	$50.0000	
Subtotal		
WIRE - U.S.		
FW SURCHARGE $10 MILLION+ D/C	$0.1400	
ELECTRONIC FED DEBIT S/T	$7.0000	
REPETITIVE INSTRUCTION STORAGE	$0.0000	

FED TRANSFER FEE	$0.0000
FED CREDIT S/T	$2.0000
ADVICE - NOT CHARGE	$0.0000
Subtotal	

Pro forma Notes, Assumptions & Disclaimers

Additional Pricing Detail

STATEMENT CYCLES 1010	
Unit Price	0.0000
Tiered	
Volume	Price
2+	5.0000

STATEMENT CYCLES - ENHANCED 1015	
Unit Price	0.0000
Tiered	
Volume	Price
2+	7.5000

* Volumes and Balances on this Pro Forma are estimated. Actual volumes and balances may be different, which will result in different charges than are specified above.

** Denotes Service is a one-time charge and will not appear on customer statement on a monthly basis.

V4.9_1_31_19

Consolidated Service Terms

J.P. Morgan Chase provides an array of treasury services to meet your business needs. This booklet contains important information about J.P. Morgan Chase solutions that we provide. If you would like to add a service that is covered in this booklet, please contact your Commercial Banking Representative

TREASURY SERVICES (United States)
Commercial Bank

Welcome to JPMorgan Chase Bank, National Association ("J.P. Morgan", "Chase", or "Bank"). We are pleased that you have decided to maintain a banking relationship with us. This Consolidated Service Terms booklet ("Booklet") contains the terms and conditions for certain cash management services ("Service Terms") J.P. Morgan may provide to you. By executing the Account Terms Acceptance Letter, Certificate Regarding Accounts, Business Signature Card, service implementation form or similar document, or by using or continuing to use any of the services referenced herein after receipt of this Booklet, you agree that the Service Terms included in this Booklet, in addition to the Account Terms and such supplements, amendments, notices and additional service terms provided to you from time to time will govern your existing and future deposit accounts maintained with us, in addition to those services that the Bank provides to you, as applicable.

This Booklet includes Treasury Services Service Terms applicable to all Commercial Banking customers. All Service Terms are subject to the Bank's Account Terms. Any modifications to this Booklet, including but not limited to any changes, amendments, deletions, and/or additions, will not be binding upon the Bank unless such modifications are acknowledged and agreed to it writing by an officer of JPMorgan Chase. JPMorgan Chase Bank, N.A. is organized under the laws of U.S.A. with limited liability.

We look forward to serving your business needs and thank you again for choosing Chase.

SERVICES FOR CUSTOMERS

A. ACH Origination

B. ACH Transaction Blocking & ACH Transaction Review

C. Lockbox

D. Coin & Currency

E. Positive Pay, Reverse Positive Pay and Payee Verification

F. Controlled Disbursements

G. Image Cash Letter

H. Check Print

I. ACH Tax Payment

J. Remote Capture Service Terms

K. Electronic Channels

The services described herein (each a "Service") are subject to the Bank's Account Terms (as may be amended from time to time), which are hereby incorporated by reference into each Service Terms. By using any of the Services described hereunder, the Customer acknowledges that it has received and agreed to the Account Terms, as supplemented by these Service Terms. Capitalized terms in the Service Terms, unless otherwise defined herein, shall have the meanings set forth in the Account Terms

A. ACH ORIGINATION

The Automated Clearing House (ACH) is a batch processing payment system that U.S. banks use to exchange and settle credit and debit transactions on behalf of their clients or themselves. The origination of ACH Entries and the transmission and issuance of related transactions and information will be pursuant to these terms and the Operating Rules and Guidelines (collectively the "Rules") of the National Automated Clearing House Association. Capitalized terms used in this subpart, unless otherwise defined in this subpart shall have the same meanings as set forth in the Rules. The Customer and the Bank agree to comply with and be bound by the Rules as in effect from time to time, including without limitation, the provision making payment of a Credit Entry by an RDFI to the Receiver provisional until receipt by the RDFI of final settlement for such Credit Entry and the Customer acknowledges that it has received notice of such rule and of the fact that if such settlement is not received, the RDFI will be entitled to a refund from the Receiver of the amount credited and the Customer will not be deemed to have paid the Receiver the amount of such Credit Entry.

1. **Service.** Bank provides automated clearing house ("ACH") origination services that will enable Customer to do one or more of the following:

   - originate ACH Debit Entries;
   - originate ACH Credit Entries; and
   - instruct the Bank to issue or transmit prenotifications, reversals, requests for return, notifications of change or other information pertaining to the Entries.

   Origination of ACH Credit Entries and origination of ACH Debit Entries are two separate services and approval or set up for one ACH service does not automatically create the ability to utilize the other. The Rules and these Service Terms shall apply to all Entries, whether or not transmitted through an ACH Operator.

   It is Customer's responsibility to provide Entries and instructions to Bank with all the necessary information to complete Customer's requested transactions. Customer agrees to transmit Entries to Bank in the manner, at the times and in accordance with approved media, content and format as agreed by Bank and Customer. Bank may reject or delay processing transactions or information if instructions are not complete or are inaccurate, contain an inactive Company ID or otherwise do not meet the criteria Bank specifies for acceptance. All requests to Bank must be received by Bank before Bank's established cut-off time in order for processing to commence on that ACH processing day. Any request that is incomplete or that Bank finishes receiving after the relevant cut-off time will be processed by Bank on the next day Bank processes ACH transactions. All transactions are subject to acceptance by Bank. Bank will notify Customer of any transactions or other transmissions that are rejected or returned. If Customer wants Bank to re-process those transactions or transmissions, Customer must correct them and re-submit them. Customer agrees to furnish Bank with copies of any authorizations or notifications, if requested, as well as any other information reasonably requested by Bank relating to Entries originated by the Customer. Customer shall provide Bank's auditors and other personnel with reasonable access at all reasonable times to the Customer's facilities, data and records relating to the initiation of Entries for the purpose of auditing Customer's compliance with these Service Terms and the Rules.

2. **Security and Data Protection Procedures.** All instructions received by Bank in Customer's name are subject to verification pursuant to mutually agreed security procedures. If Bank follows those procedures, Bank may process and transmit transactions or information in Customer's name. Unless Customer and Bank both otherwise agree, transmissions to Bank will be authenticated and/or encrypted using commercially reasonable security technologies meeting standards acceptable to Bank. If Customer uses a security procedure other than as described above, Customer acknowledges that Customer refused Bank's security procedure and chose another and Customer agrees to be bound by any transaction, whether or not authorized, issued in Customer's name and accepted by Bank in compliance with the security procedure Customer chose. If Customer elects not to utilize recommended message authentication and/or encryption technology, Customer assumes all responsibility for unauthorized disclosure or unauthorized access to Customer's data that occurs during transmission or while such data is in storage. Customer shall not disclose any Receiver's account number or routing number to any third party for such third party's use, directly or indirectly, in initiating a separate Debit.

3. **Settlement and Exposure Limits.** On the settlement date, Bank will credit Customer's account with Bank that Customer specifies for the total of:

   - Customer's Debit Entries that Bank processed for settlement that day;
   - RCCs issued for deposit to Customer's account on that day; and
   - any returned or reversed Credit Entries.

Bank may delay the availability of funds deposited into Customer's account by Debit Entry or RCC until those transactions cannot be reversed in accordance with the Rules or applicable law.

Bank will debit Customer's account with Bank that Customer specifies for the total of Credit Entries processed in Customer's name and for any returned Debit Entries and RCCs. Bank may require Customer to pay Bank the amount of any Credit Entries on the date of transmission to Bank or otherwise prior to the settlement date. Bank also may require Customer to maintain collateral with Bank in an amount Bank specifies.

Bank may from time to time establish or revise maximum dollar limits for the total value of all outstanding files of Credit Entries and/or Debit Entries and RCCs that Bank will release on Customer's behalf. Bank may change or cancel the limits at any time without prior notice to Customer; although Bank will try to notify Customer before Bank does that.

4. **Warranties; Indemnity.** Except as specified below, Customer will be deemed to make the same warranties to Bank as Bank makes pursuant to the Rules. In the case of an Entry to another account with Bank, warranties will be deemed to be given as of the time Bank first processes the Entry. Customer will not be deemed to warrant the power of the Bank under applicable law to comply with the requirements of the Rules or the conformity of Entries and other data Bank transmits to the file specifications contained in the Rules. The Customer further represents, warrants and covenants that (a) each Entry and RCC it originates will comply with all applicable U.S. laws and regulations and acknowledges that Entries may not be initiated that violate the laws of the United States, (b) unless Customer has identified itself to Bank as a Third Party Sender (as defined in Section 7) and obtained Bank's express consent to originate Entries as a Third Party Sender, Customer will not originate any Entries, or use any of its Company IDs to originate Entries, on behalf of third parties (including, without limitation, any affiliate of Customer), and (c) Customer will not permit a third party to originate Entries using a Customer account as the offset account unless Customer obtains Bank's express consent to do so.

   Customer agrees to indemnify Bank and Bank's employees, officers, directors and agents, and hold all of them harmless from and against any and all claims, demands, losses, liabilities or expenses (including attorneys' fees and costs) resulting directly or indirectly from (a) Customer's breach of any warranty made under these Service Terms and (b) compliance by Bank and the RDFI with any request Customer makes for a cancellation, stop payment, reversal or recall of any Entry or any RCC created by Bank under Section 1 hereof.

   Bank shall have no responsibility for any delay by any ACH Operator or RDFI in processing any Entry the Bank transmits to the ACH Operator or failure to process or credit or debit any such Entry.

5. **Stop Payments; Reversals and Recalls; Rejections.** Customer's instruction to cancel, stop payment of, reverse or recall one or more Entries must be received by Bank in such time and manner as Bank specifies. Bank will process these transactions in accordance with Bank's procedures advised to Customer. Any reversal or recall initiated by Bank is subject to acceptance by the RDFI. Instructions to reverse or recall an ACH Credit Entry that are not initiated by Customer in time to meet the prescribed NACHA deadline for reversals may be originated by Bank as a Debit Entry; Customer shall obtain authorization from the Receiver in accordance with the Rules for any such Debit Entry and all other terms of these Service Terms applicable to Debit Entries shall apply. Entries or other instructions may not be amended or modified.

   If Customer originates Debit Entries to an account or accounts at a financial institution that is not a Participating Depository Financial Institution in the ACH system (such account hereafter called a "Non-ACH Eligible Account"), all such Debit Entries will be rejected unless Customer subscribes to a service, subject to Bank's prior consent, pursuant to which Bank will process each such Debit Entry to a Non-ACH Eligible Account by preparing a remotely created check, as such term is defined in Federal Reserve Regulation CC (an "RCC"), on the Customer's behalf. The RCC will be drawn in the amount and on the Non-Eligible ACH Account of the individual or entity specified as the receiver in the Customer's instructions and will be deposited to the Customer's designated account with Bank, Such RCC will thereafter be processed through the check clearing system. If the Customer is using such service, the Customer hereby authorizes the Bank to create each RCC as described herein and the Customer warrants to the Bank, with respect to each RCC, that the person on whose account the RCC is drawn authorized the issuance of such RCC in the amount and to the payee stated in the RCC. The Customer authorizes the Bank to debit the Customer's account for any claim or return based upon an unauthorized RCC. All other terms herein related to Entries shall also apply to RCCs created under this Section. The Bank shall not create or process RCCs or other paper drafts in lieu of ACH Debits under any circumstances other than for Non-ACH Eligible Accounts and only when the Bank has consented to provide such service, even if the Customer includes an instruction in its file for the Bank to otherwise originate an RCC or paper draft.

6. **Third Party Service Providers.** Customer may choose to use a third party service provider or service bureau to issue Entries or other instructions, handle returned Entries or perform other functions for and on Customer's behalf. If Bank accepts such Entries or other instructions, Customer will be bound by them. Customer is responsible for all actions taken or not taken by Customer's provider and Customer is responsible for all costs and expenses of Customer's provider.

7. **Third Party Sender.** If Customer is a Third Party Sender, as such term is hereafter defined, (a) Customer warrants that the Originator has agreed to be bound by the Rules and has satisfied the obligations of an Originator under the Rules; (b) in any case where the Originator fails to perform its obligations under the Rules as an Originator, Customer shall indemnify, defend and hold Bank harmless from and against any and all claims, demands, losses, liabilities and expenses, including attorneys' fees and costs, that result directly or indirectly from the failure of the Originator to perform its obligations as an Originator under the Rules; (c) Customer agrees to cooperate with Bank regarding any request for information concerning the identity of any Originator; and (d) Customer represents, warrants and covenants that neither these Service Terms nor anything related to the ACH Origination Services violates, contravenes or is inconsistent with any of the terms, conditions or provisions of any agreement, understanding or arrangement between Customer and the Originator. Further, Bank will rely on Customer to evaluate the legitimacy of the Originators and their transactions originated by Customer and for ensuring that instructions do not involve illegal activities. Customer must notify Bank immediately if Customer suspects or become aware of any activity or transaction of an Originator that Customer believes may be of an illegal or illegitimate nature or that involves the proceeds of illegal activity or that was conducted, in part or whole, for the purpose of disguising the source of funds. Bank will be entitled at any time upon notice to Customer to decline to provide the ACH Origination Services, or terminate the provision

of ACH Origination Services, for any Originator on whose behalf are originating Entries if Bank determines that there are excessive returns or reversals of Entries originated on behalf of such Originator or if Bank becomes aware of any information indicating suspicious, fraudulent or illegal activity related to such Originator or for any other reason. As used herein, "Third Party Sender" means an entity that is not an Originator, that has authorized an ODFI or another Third Party Sender to transmit, for the account of the Third Party Sender or another Third Party Sender, (i) a credit entry to the account of a Receiver in order to effect a payment from the Originator (i.e., the third party on whose behalf the Third Party Sender is transmitting the entry) to the Receiver, or (ii) a debit entry to the account of a Receiver in order to effect a payment from the Receiver to the Originator (i.e., the third party on whose behalf the Third Party Sender is transmitting the entry). Without limitation of the foregoing, Third Party Senders include U.S. regulated financial institutions, brokers and other financial intermediaries as well as any other regulated or unregulated payment processors that are customers of the Bank and use their accounts to process payments for third parties (including affiliates of the Customer).

8. **IAT Entries.** If Customer is originating Entries that are required to be formatted under the Rules as IAT Entries, Customer will comply with all applicable Rules relating thereto, and Customer will originate such Entries only through one of Bank's ACH origination channels that support IAT origination. Some of Bank's ACH origination channels do not accommodate IAT Entries; upon request, the Bank will advise Customer as to which of Bank's ACH origination channels can be used for IAT origination.

   If a foreign currency conversion is performed by Bank in connection with an IAT Entry, Customer acknowledges that the foreign currency exchange rates fluctuate, and accepts the risk of such fluctuation, including fluctuations in rate between the time Customer submits the Entry Data Instructions and the time the transaction is executed and/or reversed, returned or recalled. Any payment returns and/or reversals will be credited to Customer's account in the currency in which Customer's account is denominated, and Customer is responsible for any rate fluctuations.

   In the event of an erroneous or duplicate IAT Entry originated for payment to a receiving bank outside the United States, the rights of Bank and Customer with respect to reversal or recall of such Entry are subject to the laws, regulations and payment system rules of the receiving bank's jurisdiction.

   Customer acknowledges and agrees that IAT Entries may be delayed in processing or posting due to the Bank's or RDFI's review of such Entries for OFAC compliance. Further, Customer understands and acknowledges that unlike PPD Credit Entries, there is no requirement under the Rules that IAT Credit Entries that are made available to an RDFI by its ACH operator by 5:00 pm on the banking day prior to the Settlement Date be made available to the Receiver at the opening of business on the Settlement date; cleared IAT Credit Entries must be made available no later than the Settlement Date of the Entry, but funds are not required to be available at opening of business on the Settlement Date.

9. **Incorporation of Account Documentation; Termination.** The provisions of the account documentation, including terms and conditions governing the operation of business accounts and services, are incorporated into these Service Terms by reference. By acknowledging or signing the applicable account documentation or by using or continuing to use the ACH Origination Services, Customer agrees to these Service Terms. In addition to Bank's termination rights under the aforementioned documentation, Bank shall have the right to terminate or suspend these Service Terms and the Services upon notice to Customer in the event of the Customer's breach of the Rules.

B. ACH Transaction Blocking & ACH Transaction Review

ACH Transaction Blocking is a Service that allows a Customer to block and return ACH debit and credit Entries originated to the Customer's account with the Bank. ACH Transaction Review allows the Customer to review ACH debit and credit Entries originated and posted to the Customer's account with the Bank and to instruct the Bank to return some or all of these transactions.

1. **ACH Transaction Blocking:**

   (a) **Service.** The Customer can select from a variety of authorization or blocking criteria and advise the Bank in a manner and form acceptable to the Bank. The Bank will return any blocked transaction indicating that the ACH debit was not authorized or that the ACH credit was refused.

   (b) **Company IDs.** If the Customer elects an option that blocks or allows ACH debits or credits from specified companies, the Customer must supply the Bank with the applicable ACH Company ID of the Originator as it appears on the Company/Batch Header Record. The Company ID will be the sole criterion for blocking debit and credit Entries (unless Customer has also set maximum dollar limits) and Bank will have no obligation to take any other steps to determine the identity of the Originator. The Customer will be solely responsible for obtaining the correct Company ID for each such Originator.

   The Customer understands that Company IDs are not unique and that a Company ID may identify more than one Originator, and one Originator may have multiple Company IDs. The Customer understands that Company IDs are not a perfect filter and that transactions from Originators may be blocked or allowed if the Originator uses a Company ID other than the one Customer identifies. The Bank will not be responsible for transactions blocked or allowed in accordance with the instructions the Customer provides for the Company ID.

   (c) **Transactions Not Affected by Blocking.** ACH debit and credit blocks do not apply to certain transactions. The following types of ACH-related transactions will not be blocked:

   - debits or credits to the Customer's account to offset any ACH credit or debit Entries originated by the Customer through Bank ;

- reversals of previously received ACH credit or debit Entries;
- returns or reversals by the RDFI of ACH debit or credit Entries originated by the Customer through the Bank;
- Reclamation Entries (debits);
- debits or credits to the Customer's account initiated by the Bank or Bank's agent or affiliate to correct processing errors, effect back valuations, make other adjustments or, with respect to debits, for fees, charges or other amounts the Customer owes the Bank or Bank's affiliates; and
- debits or credits to the Customer's account that the Bank posts pursuant to its internal procedures in order to comply with applicable law, regulations or payment system rules or guidance.

2. **ACH Transaction Review:**

(a) **Service.** Customer shall use filter criteria available through the service to select the types or categories of incoming ACH debit and/or credit transactions it wishes to review or the Customer may elect to review all incoming ACH transactions subject to Section 2(d) below.

(b) **Review and Return Process.** Based upon the filter criteria selected by the Customer, ACH transactions meeting that criteria will be made available for the Customer to review not later than a designated time on the banking day following the day on which the transactions are posted to the Customer's account. The details provided by the Bank for each Entry will include account number, dollar amount, company ID, receiver's name, standard entry class code and settlement date.

(c) The Customer shall advise the Bank by means of an agreed upon transmission method not later than the Bank's designated cut-off time on the same day as transaction information is made available of those transactions, if any, that are unauthorized and that the Customer wishes to return. The Bank is entitled to rely on any instructions which it receives and which it reasonably believes to be genuine. The Bank shall return all such transactions and make corresponding adjustments to the Customer's account to which the transactions had been posted. All transactions reported to the Customer as to which Bank does not receive a timely instruction from the Customer will remain posted or be returned based on the Transaction Review profile default decision setting established by the Customer.

(d) **ACH Transactions Not Subject to Review.** The following types of ACH transactions will not be made available for the Customer's review and decisioning:

- debits or credits to the Customer's account to offset any ACH Entries originated by the Customer through the Bank ;
- reversals of previously received ACH Entries;
- returns or reversals by the RDFI of ACH Entries originated by the Customer through the Bank;
- Reclamation Entries;
- debits or credits to the Customer's account initiated by the Bank or Bank's agent or affiliate to correct processing errors, effect back valuations, make other adjustments, or to comply with legal requirements or for fees or charges the Customer owes the Bank or Bank's affiliates; and
- If the Customer is also subscribing to the ACH Transaction Blocking service, any transactions blocked and returned pursuant to that service.

(e) **Certain Reviewed Transactions Maybe Returned/Posted Despite Instructions.** Certain transactions reviewed and approved by the Customer may nevertheless be returned by the Bank. This will happen if (i) there are insufficient funds in the Customer's account to cover the amount of an ACH debit or other charge, (ii) a stop payment was previously placed on the transaction, or (iii) the Bank determines the transaction must be returned for legal or regulatory reasons. Certain transactions that the Customer advises should be returned may nevertheless be posted by the Bank; these include ACH debits or credits to the Customer's account that the Bank posts pursuant to its internal procedures in order to comply with applicable law, regulations or payment system rules or guidance.

C. LOCKBOX

Lockbox is a remittance processing Service offered to customers to support their accounts receivables business needs. Through this service, the Customer's remittance deposits are sent to a Post Office Box and picked up by the Bank and delivered to or via courier for further processing and posting to the Customer's deposit account.

1. **Service.** The Bank will maintain the Post Office Box for the Customer's remittances and will have unrestricted and exclusive access to the Post Office Box while providing the Lockbox Service. Customers requiring Caller Service or Business Reply Mail Service for remittance collection must obtain prior approval from the Bank. Upon approval, the Customer will secure such services directly with the United States Postal Service (the "USPS") and ensure the Bank is authorized to collect the mail. The Bank shall not be responsible for delays in processing due to the Customer's failure to pay the USPS for such services or any other action taken or not taken by USPS. The Bank may direct clients to include specific codes or formats within their assigned address in order to ensure mail is identified correctly. The Customer is responsible for ensuring their customers' remittances are properly addressed in order to prevent delays in processing.

2. **Deposit; Endorsement.** The Bank will collect all mail delivered to the designated Post Office Box, and will open the mail, process the checks eligible for this service (the "Items") and credit the funds to the Customer account or process for collection the Items received, except: I) Items which the Customer has instructed the Bank in writing, and the Bank has agreed not to process; II) Items which the Bank believes should receive the Customer's special attention; III) Items for which the Customer is not the payee, unless the Customer has provided proper authorization to process for credit or collection of such Items; and IV) any other matter or merchandise received. The Bank will not process such excepted Items or other matters or merchandise, but will forward them to the Customer unprocessed. The Bank assumes no responsibility for the inadvertent processing of Items excepted from processing. The Bank will process credit card payments as point of sale transactions, obtaining authorization as required by applicable card rules; provided, however, the Bank will not place phone calls for authorization of referrals or process credit transactions. The Bank shall not be deemed a merchant processor and shall not be liable for any data entry errors or any chargeback. The Bank assumes no liability for any matter or merchandise received through the Post Office which is not a depositable item, including cash. Any failure by the Bank to process an Item other than as provided herein does not constitute a failure by the Bank to exercise ordinary care. The Customer shall be liable to the Bank as a general endorser on all Items processed by the Bank.

3. **Differing Amounts.** If the amount of an Item written in words and figures differ, the Item will be processed for amount written in words. If the Item is accompanied by an invoice or statement and the amount on the statement matches the amount written in figures, and the Customer has requested, and the Bank has agreed, to process such Item for the amount written in figures, the Item may be processed for the amount written in figures. In the event the Bank processes the Item for the amount written in figures, the Customer indemnifies the Bank for any claim which may arise from that action.

4. **Foreign Items.** This Service is limited to Items drawn on domestic banks so to the extent the Bank notices that any Items drawn on foreign banks have been deposited, such Items shall be forwarded to Customer as unprocessable.

5. **Returned Items; Re-presentment.** If any Item is returned to the Bank unpaid for any reason or there is a claim involving an Item deposited to the Customer Account, the Bank will charge back that Item, together with any fees or other amounts allowed on such claims or for returned Items, against the Customer Account, regardless of whether such debit causes an overdraft to the Customer Account. If, however, the Bank has been instructed in writing by the Customer to re-present Items which have been dishonored or returned to the Bank unpaid for reasons other than account closed, the Bank may do so automatically and without notice to the Customer, and the Bank reserves the same rights to debit the Customer Account should any such Items remain unpaid after the re-presentment.

6. **Security for Imaged Items.** The Bank has specified Security Procedures for receiving and accessing Imaged Items, Imaged Documents and lockbox transaction data. The Bank is not obligated to send any images or data or allow access through the Delivery Media to any images or data which are not requested or accessed in accordance with the Security Procedures. The Customer acknowledges that once a CD-ROM is received, or it has accessed Images by any Delivery Media, persons having access to the Customer's computers and image archives may have access to the Imaged Items, Imaged Documents and lockbox transaction data.

7. **Image Option.** If the Customer elects and this Image option is available at the designated Bank processing location, the Bank will provide Images of the Items ("Imaged Items") received together with Images of related documents ("Imaged Documents"), through the media ("Delivery Media") and at the intervals agreed upon between the Bank and the Customer. The Customer may receive additional service material, including user guides, software licenses and other terms in connection with the selection of this option.

8. **Original Documents; Image Storage.** Unless the Bank has agreed otherwise, the Bank will image all Items and associated remittances and retain original documents on site for no longer than 14 days. All original documents will be destroyed 14 days after processing. If the Customer uses the Bank's Regional Retail Lockbox product, associated original documents are retained on site no longer than 7 days. The Bank will store Imaged Items for a period of seven (7) years from the date of the applicable transaction regardless of any additional imaging service requested by the Customer. If the Customer elects storage of Imaged Documents, the Bank will store Imaged Documents for a period of thirty (30) days (Short Term Storage) to ten (10) years (Long Term Storage) from the processing date of the applicable transaction., per the Customer's selection If the Customer elects to image and not store Imaged Documents with the Bank, such Images will be delivered to the Customer via daily Direct Image Transmission.

9. **Accuracy; Legibility.** The information delivered to the Customer through the Delivery Media will be the same as the information in the data entry file provided to the Customer for the applicable time period. If the data entry file contains errors, those errors will also occur on the Delivery Media. The Bank will provide images that are as legible as possible given the legibility of the underlying remittance documents and the selected Delivery Media. The Bank has no liability or responsibility for the condition of the original remittance Items provided to the Bank, and it reserves the right to review and approve sample remittance Items for legibility prior to providing this service. The Customer is responsible for reviewing Images obtained through the Delivery Media and to promptly notify the Bank of any Images that are not clear.

10. **Disclosures.** As between the Customer and the Customer's clients, if applicable, certain payments collected hereunder may be subject to various cut-off times and payment deadlines (the "Disclosures"). The Customer acknowledges and agrees that the Bank has no duty to inquire as to the content of any such Disclosures, is not bound by them, and makes no representations or warranties, explicitly or implicitly, regarding same. The Customer is responsible for ensuring that the processing and payment cut-off times established by the Bank are in compliance with the Disclosures

and Customer's responsibilities under applicable laws and regulations. The Customer further acknowledges and agrees that the data processed by the Bank belongs to the Customer or the Customer's clients.

D. Coin & Currency

Coin and Currency Services, also referred to as Cash Vault Services, provides coin and currency delivery and deposit services to companies that use large quantities of cash. With a nationwide vault network, Customers can place orders for coin and currency, make deposits and track activity by location through electronic reporting options.

1. **Cash Orders**

1.1. **Placement of Cash Orders.** The Customer may issue written instructions for the Bank to release United States coin and currency ("Cash") to an armored courier service (the "Courier") as designated by the Customer in accordance with the Bank's guidelines ("Cash Order"). The Customer acknowledges that Cash Orders may be transmitted to the Bank only during such times as set forth in the guidelines. The Bank is authorized to debit the account of the Customer designated in the Cash Order for the amount set forth in the Cash Order. If the Bank has agreed to such an arrangement, the Customer may also place a Cash Order directly at one of the Bank's branch locations by issuing a check to debit the Customer's account at the Bank or as a "cash for cash" exchange. If there are insufficient funds in the designated account, the Bank is authorized to refuse the Cash Order, to fill a partial Cash Order or to debit the designated account even if such debit causes an overdraft, or to debit any other account of the Customer at the Bank.

1.2. **Cash Order Limits.** The Bank and the Customer may agree to limit the amount of Cash that may be delivered pursuant to a Cash Order ("Cash Limit").

1.3. **Discrepancies for Cash Orders.** All Cash Orders must be validated by the Customer within 24 hours of receipt. If a currency strap, coin bag or wrapped coin discrepancy is identified, the Customer may contact Cash Services Customer Support at 888-872-0517 to request a Cash Order Claim Form. The completed form and proper documentation must be sent to the Bank and post marked within 48 hours of receipt of the Cash Order. Any claims post marked after the 48 hour period may be denied and the Customer will have no right to refuse or receive an adjustment after such time period.

1.4. **Cancellations and Amendments.** A Cash Order may be cancelled by the Customer telephonically, electronically or in writing by a person the Bank reasonably believes to be authorized to act on behalf of the Customer and only if the cancellation is received within a reasonable time before the Cash is delivered to the Courier ("Cancellation"). A Cash Order may only be amended telephonically and the Bank will not be responsible for any change in a Cash Order it has received. Any attempt to amend a Cash Order electronically may result in duplicate Cash being delivered.

1.5. **Notice of Rejection/Execution.** If the Bank rejects a Cash Order request, it will promptly notify the Customer of the reason. The Bank will notify the Customer when it has executed a Cash Order. Unless, within three (3) business days after receipt of notification of the execution of a Cash Order the Customer notifies the Bank in writing that a Cash Order was unauthorized or otherwise unenforceable against the Customer, the Bank shall not be liable for executing the Cash Order as notified, including any loss of interest.

1.6. **Security Procedure.** The Bank must receive a Cash Order using a touch-tone telephone, or other electronic communications device mutually agreed upon by the Customer and the Bank, based upon codes assigned by the Bank to the Customer that identify the Customer and the location (collectively, "Codes"). The Customer agrees that use of the Codes constitutes a security procedure for verifying the authenticity of the Cash Order as being that of the Customer ("Security Procedure")... The Customer and the Bank will maintain reasonable security and control of the Codes. The Bank is not responsible or liable for detecting any error in the transmission or content of any Cash Order or Cancellation and the Security Procedure is not intended to detect any such error. No agreement or instruction of the Customer restricting acceptance of any Cash Order or Cancellation is binding on the Bank, except as set forth in these Service Terms or in a writing signed by the Customer and the Bank. These Security Procedures do not apply to Cash Order requests made by the Customer at one of our branch locations when the Customer is making a "cash for cash" exchange or issuing a check to debit the Customer's account at the Bank.

1.7. **Geographical Limitations.** The Customer represents and warrants that all Cash Orders will be used by Customer in its normal course of business at the Customer's store/office locations in the United States.

2. **Cash Deposits**

2.1. **Standard Courier Service.** The Customer may deliver and pick up shipments of Cash or checks to or from the Bank by using the services of a Courier that has been authorized by the Bank, who will act solely as the Customer's agent. The Courier must comply with the Bank's guidelines, as amended from time to time, and must maintain all licenses and permits required by law in addition to adequate insurance to cover its liabilities in providing courier services to the Customer. The Bank may refuse to permit any courier to enter its premises with or without cause, in which case the Bank will use reasonable efforts to promptly notify the Customer. With regard to Customer's Courier, Customer is responsible for any individual's actions while at the Bank's facilities including theft, property damage, intentional crimes and any other act or omission even if such actions would be considered outside the scope of their employment and whether the individual is impersonating an employee of the courier if the Bank has followed its customary procedures for identifying the individual.

2.2. **Deposit Presentment and Processing for Standard Courier Service.** With regard to deposits delivered to one of the Bank's vault locations, the Customer's Courier must deliver deposits in sealed tamper-proof plastic security deposit bags that meet the standards described in the Bank's guidelines and contain only Cash and checks. The bags may also contain food stamps if the Customer provides proof satisfactory to the Bank of the Customer's authority to redeem food stamps. The Bank will open the bags and process the deposits.

(a) **Delivery to Vault.** If the Bank agrees to accept the Customer deposits at a vault location, the Bank will provide a receipt indicating the number of bags it has received. This receipt is not an acknowledgment of the contents of any bag, nor is any telephonic or other acknowledgment of a deposit of which the Customer notifies the Bank by telephone or by electronic means.

(b) **Delivery to Branch for Delayed Processing.** If the Bank agrees to accept the Customer deposits at a branch location, the Bank will not verify the amount of the deposits at the time of receipt but will provide the Customer with a receipt showing the amount indicated in the Customer's deposit slip. This receipt is not an acknowledgment of the contents of any bag.

2.3. **Courier Service through the use of a Smart Safe or Recycler Machine.** The Customer may use the services of a courier that has been authorized by the Bank, who will act solely as the Customer's agent. The courier must comply with the Bank's guidelines, as amended from time to time, and must maintain all licenses and permits required by law in addition to adequate insurance to cover its liabilities in providing courier services. The Bank may refuse to permit any courier to enter its premises with or without cause, in which case the Bank will use reasonable efforts to promptly notify the Customer. The Customer will receive Advance Credit only for Cash placed in Deposit Cassette (as defined below) component of the machine. The Customer's courier is authorized to transmit the Cash information only with regard to the Deposit Cassette component of the machine to the Bank on the Customer's behalf and the Bank, upon receipt of such data transmission, will provide provisional credit to the Customer's designated account. The courier will deliver the Cash to the Bank as directed by the Bank at the Customer's expense. The Customer authorizes the Bank to instruct the courier to pick up any Cash for which the Bank has given provisional credit at any time at the Customer's expense. For purpose of these Service Terms, "Deposit Cassette" is the component of the machine whereby the Customer places Cash into such component and only the courier is able to access such Cash once it is placed in the Deposit Cassette.

2.4. **Deposit Presentment and Processing through the use of a Smart Safe or Recycler Machine.** The Customer agrees that once the Cash is in the Deposit Cassette component of the machine, the Customer no longer has any ownership, control or rights with regard to the physical Cash and that the Bank is authorized to rely upon the transmitted information from the Customer's courier with regard to deposits or adjustments to the Customer's deposit account with the Bank. Once the Customer's courier has completed the verification of the Cash from the Deposit Cassette component of the machine and has transmitted the deposit/adjustment information to the Bank, the Cash is then placed into the Bank's inventory at the courier's location. In the event of a dispute related to the amount credited to the Customer's deposit account, the Customer will initiate its claim and request for an investigation with its courier.

2.5. **Discrepancies.** All deposits are subject to verification. If there are differences between the amount credited by the Bank and the amount shown on the deposit slip prepared by the Customer, the receipt provided to the Customer or its agent upon initial presentment or the transmission received from the courier on the Customer's behalf, the currency will be re-counted for discrepancies over the minimum amount specified in the Cash Vault Services Product Guide, the "Threshold" amount, the Customer's representative designated in the service implementation questionnaire will be notified of the adjustment, and an adjustment fee will be charged. If the discrepancy is in the Threshold amount or less, the Bank will not adjust the Customer's account, the Bank will retain the discrepancy amount, and no adjustment fee will be charged. The Bank's determination and records as to its receipt of any bag and as to the contents of any bag is conclusive and binding on the Customer.

2.6. **Relationship upon Delivery of Bags.** Until the Bank recounts the contents of the bags and enters a final credit to the Customer's account, the Bank is not responsible for any claimed contents of the bags. The Customer should not include anything in a bag other than Cash and its deposit slip, and the Bank shall have no responsibility or liability if there is any other property included or claimed to have been included in a bag...

2.7. **Delivery to Unattended Facility.** If the Bank agrees to allow the Customer to use one of the Bank's unattended facilities (including but not limited to a night depository or commercial ATM), the Bank may provide the Customer with an access device (such as a key or card that may require a personal identification number ("PIN"). The Customer must return all access devices to the Bank upon request. The Bank will process any deposits delivered to an unattended facility as provided for in the Bank's guidelines. If the Customer receives a receipt from an unattended facility, the receipt is not an acknowledgment of the contents of any bag or of the receipt of any bag. While the Customer or the Customer's Courier is physically present at one of the Bank's unattended facilities, the Customer is a licensee only and the Bank has no responsibility for the safety of the Customer or its Courier while at such facility.

2.8. **Liability at Unattended Facility.** The Customer assumes all risks of using any unattended facilities, including risks of theft, robbery and personal injury; the Bank is not responsible if a facility fails to operate properly in any way, including failing to open, close, lock or unlock. It is the Customer's responsibility to verify that its bags have dropped down completely into the facility, and the Customer agrees that it will not leave any bags in any facility that does not appear to be operating properly. The Bank will not be liable to the Customer if any unattended facility, tele-entry or online system is closed or otherwise unavailable for use at any time.

2.9. **Geographical Limitations of Cash Deposits.** Cash Deposits must be delivered to the Bank by Customer's courier and from Customer's physical store/office locations in the United States. Cross-border cash deposits (i.e., cash brought into the United States from outside the United States) are strictly prohibited

E. Positive Pay, Reverse Positive Pay and Payee Verification

JPMorgan Chase Bank, N.A. (the "Bank") will provide Customer, in accordance with the provisions set forth in these Service Terms, with one or more of the services listed below (each a "Service") that help prevent check fraud on deposit accounts by identifying discrepancies between checks ("Items") presented to the Bank for payment from the Customer's demand deposit account associated with the Service (the "Account") and those Items that are issued by Customer. The provisions of the Bank's account documentation, including terms and conditions governing the operation of business accounts and services as well as other service guides or material (the "Account Documentation") are incorporated into these Service Terms by reference. By signing the applicable Account Documentation or by using or continuing to use any of these Services, the Customer agrees to these Service Terms.

1. Services.

With Positive Pay, the Customer sends check issuance information to the Bank and the Bank compares such information to Items being presented for payment. With Reverse Positive Pay, the Bank sends the Customer information on Items being presented for payment and the Customer does its own comparison. Payee Verification is an enhanced feature for Positive Pay whereby the Customer includes payee name information and the Bank compares such information against the payee names on Items being presented. As a condition precedent for receiving Payee Verification, the Customer must be receiving Positive Pay in connection with the same Account.

2. Issuance Information.

The following information is defined as "Issuance Information" for each Item: i) Account number on which the Item is drawn; ii) Item serial number; iii) dollar amount; iv) issue date, (not as part of Reverse Positive Pay); and v) for Payee Verification only, the payee name. For Positive Pay and Payee Verification, the Customer will provide the Bank the Issuance Information by the banking day on which the Customer issues Items by means of a mutually agreed upon transmission method. The Bank will compare the Issuance Information with the Items presented to the Bank for payment against the Account. For Reverse Positive Pay, the Bank will send the Customer the Issuance Information and the Customer will compare such information with the Items they have issued.

3. Discrepancies.

For Positive Pay and Payee Verification, if an Item is presented to the Bank for which it has not received timely Issuance Information or that contains information different from the Issuance Information for that Item, the Bank will notify the Customer by means of a mutually agreed upon method, by the designated time of the Banking Day following the Banking Day the Item is presented to the Bank for payment. The Customer shall advise the Bank by means of a mutually agreed upon method by the designated time on that same Banking Day whether any such Item is authorized for payment ("Presentment Decision"). In the event that the Customer fails to timely inform the Bank about any Item for which a Presentment Decision is requested, the Bank is authorized to return such Item unless otherwise agreed by the Customer and the Bank. For Reverse Positive Pay, the Bank will provide Issuance Information to the Customer of Items presented for payment; the Customer shall advise the Bank by means of a mutually agreed upon method by the designated time on that same Banking Day whether any such Item is not authorized for payment, and in the event that the Customer fails to timely inform the Bank as required, the Bank is authorized to pay such Item(s) unless otherwise agreed by the Customer and the Bank. The Bank is entitled to rely on any instructions by the Customer which it receives and which it reasonably believes to be genuine. If a Customer attempts to change an instruction previously given by sending an email or other message to the Bank, the Bank may, but has no obligation to, act upon such change request.

4. Payee Verification Additional Terms.

For Payee Verification, Customer acknowledges that Items which have been converted to ACH transactions prior to being presented for payment will not be eligible for this service and the payee name information will not be compared to the Issuance Information for Items that have been converted to ACH transactions. If Customer fails to provide the Issuance Information in the file format required by the Bank, the Bank will not be liable for failing to detecting any discrepancy between the Item and the Issuance Information or for processing and payment of such Item. The Bank reserves the right to set a threshold amount for Items (as may be revised by the Bank from time to time) to be reviewed under the Payee Verification service (the "Threshold Amount"). The Items below the Threshold Amount will be handled according to the standard Account Documentation governing the Customer's Account; however, Customer will not be liable for such Items if the discrepancy would have otherwise been detected under this Service. With regard to Payee Verification, the Bank will compare the payee name provided in the Issuance Information to the payee lines contained in the name/address block identified on the Item (presented as provided for in the Bank's set-up requirements) and will otherwise be limited to those parameters specifically agreed to by the Customer and Bank.

5. Voided Items.

The Customer agrees to place a void on an Item in the Issuance Information only with respect to Items that are not in circulation. If the Customer decides to stop pay an Item that it has already issued, the Customer is required to place a Stop Payment request pursuant to the relevant terms of the Account Documentation, outside of these services.

6. Item Payment.

The Bank is not obligated to maintain signature cards for the Account and whether or not the Bank does maintain such signature cards, in no event shall the Bank be obligated to inspect any Item for the presence or authenticity of any signature or to determine whether any signature is authorized. The Customer acknowledges that the Bank's adherence to these procedures in these terms, in lieu of signature examination, will constitute the exercise of good faith and ordinary care by the Bank in handling Items presented for payment against the Account.

7. Over the Counter Presentment.

The Bank may, without liability to the Customer, refuse to pay any Item presented for encashment at any of the Bank's branch locations. If an Item is presented for encashment at one of the Bank's branch locations at the teller line and the account is under the Positive Pay or Payee Verification Service, the Customer authorizes the Bank to pay such Item based upon the Positive Pay information at the teller line. If an Item is presented for encashment at one of the Bank's branch locations at the teller line and the account is under the Reverse Positive Pay Service, (i) the Customer authorizes the Bank to

pay such item pursuant to the Bank's policies and procedures for encashment, (ii) Customer assumes the risk of any loss that would have been prevented through the use of Positive Pay or Payee Verification services; and (iii) Customer agrees to unconditionally release, indemnify and hold harmless the Bank against any and all liability loss or claim relating to an item being cashed or returned over-the-counter. The Bank may charge a person who cashes an item drawn on the Customer's Account a fee at the time of encashment.

F. CONTROLLED DISBURSEMENTS

Controlled Disbursement Accounts help customers effectively manage the disbursement process to gain control over idle balances and automate funding transfers and is designed to provide disbursement totals early each business day.

1. **Controlled Disbursement Account.** Each controlled disbursement account ("Controlled Disbursement Account"), except as set forth herein, shall be opened and maintained in accordance with the Account Documentation. Customer agrees that if it fails to utilize one of the Bank's positive pay services on the Controlled Disbursement Account, that failure will constitute Customer negligence contributing to the making of any unauthorized signature and Customer assumes the risk that checks or drafts ("Items") presented against the Controlled Disbursement Account may be forged or altered, to the extent that the positive pay services the Bank offers may have prevented any loss. The Bank will have no liability for any loss related to an Item presented against the Controlled Disbursement Account which would otherwise generally have been returned under such positive pay services.

2. **Payment of Items.** Bank, on each banking day, will advise Customer of the total amount of Items drawn against the Controlled Disbursement Accounts that are presented for payment, on that day, to the Bank by a Federal Reserve Bank or another depository institution pursuant to a same-day settlement arrangement. Bank will honor Items which are properly payable, but shall have no obligation to pay any Item should sufficient immediately available funds to cover such Items not be transferred to the Controlled Disbursement Account in accordance with these Service Terms and the Account Documentation.

3. **Over-the-Counter Presentment.** Bank may, without liability to Customer, refuse to pay any Item presented for encashment at any of the Bank's branch locations.

4. **Funding Account for Controlled Disbursement.** Customer will maintain with Bank a designated account for purposes of funding the Controlled Disbursement Account, or the funding account may be maintained at an affiliated bank or other financial institution (the "Funding Account"). Customer authorizes Bank to debit the Funding Account for the total amount of the Items presented and any funds transfers against the Controlled Disbursement Account, and to promptly transfer such amount to the Controlled Disbursement Account even though such a debit may bring about or increase an overdraft. All funds transfers from the Funding Account to the Controlled Disbursement Account shall be in immediately available funds. Customer will maintain sufficient available funds in the Funding Account to cover Items and funds transfers presented against the Controlled Disbursement Account, and the Bank shall have no obligation to transfer funds, process Items for payment or complete any funds transfers unless there are sufficient available funds in the Funding Account. The Bank is authorized to debit the Funding Account for any obligations owed directly or indirectly on the Controlled Disbursement Account. The Bank shall not be liable for failure to pay any Item presented for payment against any Controlled Disbursement Account due to insufficient funds in the Funding Account.

5. **Media.** Bank will transmit to Customer by the transmission method or media agreed to by Customer and Bank information regarding Customer's Controlled Disbursement Account.

6. **Routing Transit Number.** Customer agrees to use the designated controlled disbursement account routing transit number on the Items it issues from the Controlled Disbursement Account. Customer acknowledges that if it fails to use such designated controlled disbursement account routing transit number the Bank is authorized to terminate this Service or any Service feature upon notice to the Customer.

7. **Financial Condition.** In the event of the deterioration of the financial condition of the Customer, as determined in the Bank's sole discretion, the Bank may immediately terminate the Service, any Service feature, and/or may convert any Controlled Disbursement Account to a stand-alone demand deposit account without prior notice to the Customer.

8. **Third Party Usage.** Customer agrees that it will not permit a third party to write checks on or otherwise issue payment transactions or instructions on Customer's Controlled Disbursement Account. Customer agrees to indemnify and hold Bank harmless from and against any and all actions, claims, demands, losses, liabilities or expenses whatsoever, including attorney's fees and costs, resulting directly or indirectly from Customer's breach of this Section 8. This indemnity shall survive the termination of these Service Terms. Notwithstanding anything to the contrary, Customer acknowledges that, if Customer breaches this Section 8, Bank may immediately terminate this Service or any Service feature upon notice to the Customer.

G. IMAGE CASH LETTER

1. **Service.**

   These terms govern the image cash letter service (the "Service") which allows image-enabled check customers to prepare and transmit electronic deposit information and check images instead of preparing and physically depositing paper cash letters and associated original check.

2. **Transmission and Processing.**

Customer shall provide through its own methods or devices the captured check images and check data from the Check, including the magnetic ink character recognition formatting (MICR) information through electronic transmissions (the "Transmissions") in the format and specifications required by the Bank's File Standards and within the cut-off times provided by the Bank. Customer authorizes Bank to process the Transmissions as substitute checks, electronic images or photos in lieu, as may be applicable for further clearing through any other financial institution, clearinghouse or Federal Reserve Bank. If the Customer is eligible and has chosen to have Checks processed as ACH transactions, Bank will convert eligible Checks to ARC or POP entries, as defined and provided for in the ACH Origination Service Terms. Customer agrees that it is solely responsible for the creation and transmission of these Transmissions to the Bank. If any Transmission (including any source document for purposes of these Service Terms) does not meet the Bank's or any transferee's standard requirements for processing, Customer assumes all risk of loss or delay in processing such Transmission and authorizes the Bank to either (a) return the Transmission to the Customer without further processing, (b) process the Transmission as sent from the Customer, (c) process the Checks as photocopies in lieu of the originals, or (d) repair or attempt to repair the Transmission for further processing. Under this Service, "Checks" shall mean checks and drafts drawn in US dollars on, or payable through, banks located in the United States (including Puerto Rico, Guam and the US Virgin Islands), endorsed for deposit to Customer's account at the Bank.

3. **Image Cash Letter File Deposit Time.**

The Transmissions must be sent to Bank prior to the deposit deadline. Any Transmission will be deemed to have been received by Bank when the entire file has been written onto Bank's system and made available for Bank to validate. Based upon the size of the Transmission file, there may be a significant delay between the time Customer begins to send the file and the completion of the transfer as stated above. As a result, Customer will make every effort to send the Transmission file as early as possible. Files that are received after a deposit deadline will be considered deposited as of the next deposit deadline. Processing fees and funds availability will be assessed based on the deposit deadline that is met.

4. **Customer Liability.**

Customer shall be solely responsible if any Transmission for which Customer has been given provisional credit is returned or reversed, and neither Bank nor its subcontractors shall be liable or responsible for same. Customer acknowledges that all credits received for deposit are provisional, subject to verification, final settlement or return. Information and data reported hereunder: (a) may be received prior to final posting and confirmation and is subject to correction and (b) is for informational purposes only and may not be relied upon. Customer agrees that Bank shall have no liability for the content of payment-related information as received from the Customer. Customer shall be solely responsible for the original Checks, including storage and retrieval. Customer agrees to provide a legible copy of an image or the original Check if requested by the Bank within five (5) business days of such request. If Customer is unable to provide the original or legible copy, Customer shall be liable for any associated loss or claim involving the Check. Customer will not present a Transmission or the original Check or substitute check more than once to the Bank if the initial Transmission was processed as an ACH transaction and shall be responsible for any and all losses or claims resulting from the Customer presenting such Check or Transmission for payment more than once through any method.

5. **Suspension/Cancellation of Service.**

Bank reserves the right to suspend or terminate the Service, in whole or in part if Bank believes Customer is in breach of these Service Terms or is otherwise using or accessing the Service in a manner inconsistent with the rules and regulations relating to the Service being provided and such breach, use or access is not cured within three business days after notice to Customer. Further, this Service will automatically terminate if the Customer's account with the Bank is closed for any reason. Either party may terminate the Service upon thirty (30) days' prior written notice to the other party; provided, however, that the terms of Section 9 will apply to any termination prior to the time period set forth in the Pricing Schedule.

6. **Intellectual Property Ownership.**

Neither these Service Terms nor the provision of the Service transfer to Customer any ownership or proprietary rights in the Bank's technology or any work or any part thereof, and all right, title and interest in and to the Bank's technology will remain solely with Bank or its subcontractors.

7. **WARRANTIES AND DISCLAIMERS.**

7.1. **CUSTOMER WARRANTY. CUSTOMER WARRANTS AND REPRESENTS TO THE BANK THAT: (A) EACH TRANSMISSION CONTAINS ACCURATE AND LEGIBLE IMAGES OF ALL OF THE INFORMATION ON THE FRONT AND BACK OF THE ORIGINAL CHECKS AT THE TIME EACH CHECK WAS TRUNCATED; (B) EACH TRANSMISSION ALSO CONTAINS A RECORD OF ALL APPLICABLE MICR-LINE INFORMATION REQUIRED FOR A SUBSTITUTE CHECK AND THE ACCURATE AMOUNT OF THE CHECK; (C) EACH TRANSMISSION CONFORMS TO THE TECHNICAL STANDARDS FOR AN ELECTRONIC ITEM SET FORTH IN REGULATION J AND FEDERAL RESERVE BANK OPERATING CIRCULARS AND FOR A SUBSTITUTE CHECK SET FORTH IN REGULATION CC; (D) NO PERSON WILL RECEIVE A TRANSFER, PRESENTMENT OR RETURN OF, OR OTHERWISE BE CHARGED FOR, THE CHECK (EITHER THE ORIGINAL CHECK, OR A PAPER OR ELECTRONIC REPRESENTATION OF THE ORIGINAL CHECK) SUCH THAT THE PERSON WILL BE ASKED TO MAKE PAYMENT BASED UPON A CHECK IT HAS ALREADY PAID; (E) CUSTOMER WILL NOT REDEPOSIT THROUGH THIS SERVICE ANY TRANSMISSION REPRESENTING A CHECK PREVIOUSLY DEPOSITED AND RETURNED TO THE CUSTOMER; (F) CUSTOMER WILL EMPLOY COMMERCIALLY REASONABLE SECURITY MEASURES AND FIREWALLS SUFFICIENT TO PROTECT THE TRANSMISSIONS AND STORAGE TO ENSURE NO UNAUTHORIZED ACCESS OR DUPLICATE PRESENTMENT; (G) CUSTOMER WILL ONLY CREATE TRANSMISSIONS FOR CHECKS THAT ORIGINATED AS PAPER CHECKS; (H) CUSTOMER HAS ESTABLISHED AN ANTI-MONEY LAUNDERING PROGRAM IN COMPLIANCE WITH ANTI-MONEY LAUNDERING LAWS AND REGULATIONS APPLICABLE TO IT AND SUCH ANTI-MONEY LAUNDERING PROGRAM INCLUDES POLICIES, PROCEDURES AND CONTROLS DESIGNED TO DETECT AND PREVENT MONEY LAUNDERING WHICH CUSTOMER BELIEVES EFFECTIVELY PREVENTS THE USE OF CUSTOMER'S OPERATIONS, PERSONNEL OR FACILITIES FOR MONEY LAUNDERING PURPOSES; AND**

(I) CUSTOMER WILL ONLY ACCESS THE SERVICE AND SEND TRANSMISSIONS TO THE BANK FROM LOCATIONS WITHIN THE UNITIED STATES; (J) CUSTOMER IS IN COMPLIANCE WITH ALL LOCAL LAWS AND REGULATIONS APPLICABLE TO IT IN THE USE OF THIS SERVICE.

7.2. DISCLAIMER. BANK AND ITS SUBCONTRACTORS MAKE NO REPRESENTATIONS OR WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY REGARDING OR RELATING TO ANY OF THE TECHNOLOGY OR SERVICE AND/OR ACCESS TO OR USE OF THE SERVICE OR TECHNOLOGY PROVIDED TO CUSTOMER HEREUNDER. BANK AND ITS SUBCONTRACTORS SPECIFICALLY DISCLAIM ANY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. CUSTOMER ACKNOWLEDGES THAT THERE ARE CERTAIN SECURITY, CORRUPTION, TRANSMISSION ERROR AND ACCESS AVAILABILITY RISKS ASSOCIATED WITH USING OPEN NETWORKS SUCH AS THE INTERNET, AND CUSTOMER ASSUMES ALL SUCH RISKS. CUSTOMER SHALL MAKE AN INDEPENDENT ASSESSMENT OF THE ADEQUACY OF THE INTERNET IN USE OF THE SERVICE PURSUANT TO THE BANK'S PROCEDURES. CUSTOMER FURTHER ACKNOWLEDGES THAT THE SELECTION AND USE BY IT OF ANY THIRD PARTY SECURITY AND COMMUNICATIONS SOFTWARE AND THIRD PARTY SERVICE PROVIDERS IS THE SOLE RESPONSIBILITY OF CUSTOMER, AND BANK DISCLAIMS ALL RISKS RELATED THERETO, NOTHWITHSTANDING THAT THE BANK MAY RECOMMEND CERTAIN SECURITY AND/OR COMMUNICATIONS SOFTWARE AND SERVICES. CUSTOMER AGREES TO, AT ITS SOLE EXPENSE, PROCURE AND MAINTAIN ALL HARDWARE, BROWSERS, SOFTWARE AND TELECOMMUNICATIONS EQUIPMENT NECESSARY TO ACCESS THE SERVICE IN ACCORDANCE WITH THE BANK'S RECOMMENDED SYSTEM CONFIGURATION.

8. INDEMNIFICATION.

IN ADDITION TO ITS INDEMNIFICATION OBLIGATIONS IN THE ACCOUNT TERMS, AND EXCEPT FOR LOSSES OR EXPENSES CAUSED BY BANK'S FAILURE TO EXERCISE ORDINARY CARE OR WILLFUL MISCONDUCT, CUSTOMER AGREES TO INDEMNIFY BANK FOR ANY LOSS OR EXPENSE SUSTAINED (INCLUDING ATTORNEY'S FEES AND EXPENSES OF LITIGATION) RESULTING FROM (I) CUSTOMER'S LACK OF AUTHORITY TO MAKE THE WARRANTIES PROVIDED HEREIN; (II) ANY ACTION TAKEN OR NOT TAKEN BY BANK WITHIN THE SCOPE OF ITS AUTHORITY UNDER THESE SERVICE TERMS IN HANDLING A CHECK; AND (III) ANY WARRANTY OR INDEMNITY REQUIRED TO BE MADE BY BANK WITH RESPECT TO A CHECK UNDER APPLICABLE LAW OR REGULATION.

9. **Pricing Schedule/Volume/Termination Penalties.**

Bank and Customer agree to the terms of the Pricing Schedule which are incorporated herein by reference, including the length of time the Service will be provided, the charges/fees and the volumes, as may be stated in the Pricing Schedule. If Customer terminates the Service or the Service is otherwise terminated without fault of the Bank prior to the period of time set forth in the Pricing Schedule, Customer shall pay the Bank a termination fee equal to twelve (12) times the average monthly transaction fee for the Service for the period of time the Service was provided to Customer. Such termination fee shall be paid within thirty (30) days' after the effective termination date.

10. **Audit.**

Customer authorizes the Bank to audit its facilities where the Checks are imaged, stored and destroyed as well as where the Transmissions are processed under this Service upon reasonable prior written notice from the Bank.

11. **Online Adjustments Services.**

If Bank and Customer agree, Customer will submit its adjustment requests through the web-based SVPCO Online Adjustment Service ("Online Adjustment") based on the following terms:

For Customers choosing the deposit account option where they settle for the items through the Customer's deposit account at Bank ("Deposit Account") option, Customer agrees to be bound by the SVPCO Electronic Adjustment Exchange Rules, as may be amended from time to time ("SVPCO Rules"). Bank will assist the Customer in implementing and registering for Online Adjustment. Customer will designate at least one Administrator by submitting the Secure ID Token Form for Online Adjustments ("Form"). After the initial registration, Customer will be able to update its designated users directly through SVPCO. Bank may conclusively rely upon any information or instructions purported to be sent by the Customer through Online Adjustment. Customer agrees that Bank may charge Customer's Account for any adjustments and related fees. Customer agrees that the Bank shall have no responsibility with regard to the adjustment information transmitted through Online Adjustment. Notwithstanding anything to the contrary in these Service Terms or the Account Documentation, Online Adjustment will automatically terminate upon the termination or expiration of the agreement covering the SVPCO online adjustment service between Bank and The Clearing House.

H. CHECK PRINT

The Check Print Service enables the Customer instruct the Bank to create and mail checks and/or documents on behalf of the Customer.

1. **Print Orders.** The Bank will execute each print order requested by the Customer which is received by the Bank in a manner described in these Service Terms or as otherwise provided by the Bank (the "Print Order"). Print Order information shall include payee names and addresses. Customer agrees that it will not include any other personally identifiable information or any protected health information in its Print Orders. Print Orders may include printing of non-payment documents ("Documents") if agreed to by the Bank based upon these Service Terms.

2. **Check Pull Requests.** For any Print Order received by the Bank, the Customer may request the Bank to pull a check(s) from processing by completing the Bank's manual check pull request form ("Check Pull Request"); provided, however, that a Check Pull Request will not be effective unless and until it is received by the Bank in the form required and the Bank has had a reasonable time to act upon such request. A Print Order may not be amended or modified. The Bank has no obligation to adjust or stop the payment or posting of a Print Order it has accepted.

3. **Receipt of Print Orders.** The Customer shall transmit Print Orders to Bank to the location and in compliance with the formatting and other requirements of the Bank set forth in its operating procedures. Bank may reject any Print Order that does not comply with these Service Terms.

4. **Issuance of Checks/Documents.** For each Print Order accepted by the Bank, the Bank will: (a) cause a check to be printed and completed; (b) cause a laser facsimile signature authorized by the Customer to be placed on the check; (c) if agreed upon, cause other documents to be completed and included with the check issuance ("Documents"); and (d) mail or send the check by courier along with any Documents as agreed upon (collectively, the "Issuance"). The Customer expressly grants the Bank the authority to create and process such Issuances.

5. **Notice of Rejection.** The Bank will promptly notify the Customer if a Print Order is rejected by the Bank and will advise the Customer as to the reason. The notice or advice shall be deemed commercially reasonable if made available through the Check Print Service or given electronically, orally, by telephone or facsimile transmission.

6. **Control.** The Bank is not responsible or liable for the detection of errors contained in any Print Order as received from the Customer and is entitled to rely on the information contained therein.

7. **Reliance Upon Instructions.** The Customer is responsible for, and the Bank may rely upon, the contents of any notice or instructions that Bank believes in good faith to be from the Customer without any independent investigation. The Bank shall have no duty to inquire into the authority of the individual giving such notice or instruction. In the event the Bank receives conflicting notices or instructions, the Bank is authorized to act on either the notice or instruction, or it can refuse to act. No restriction on the Bank's acceptance of any Print Order will be binding on the Bank, except as set forth in these Service Terms unless agreed to in writing by the Bank and the Bank has had a reasonable opportunity to act upon such change.

8. **Limitation of Liability.**

   The Bank's liability shall be limited to direct damages caused by the Bank's failure to use reasonable care. Reasonable care in providing the Check Print Service shall be measured by the relevant provisions of any service levels or business requirements and the standard of reasonableness of the procedures established for the transaction involved. Mere inadvertence or honest mistake of judgment shall not constitute a failure to perform such obligations or a failure to exercise reasonable care and in no case will be deemed wrongful.

9. **Cashier's Checks.** If the Bank creates cashier's checks under the Check Print Service, the following additional terms will apply: (a) Customer will send the cashier's check print file information ("File Information") to the Bank by the Bank's cut off time on a given day ("Day One"); (b) the Customer authorizes the Bank to debit the Customer's designated account ("Funding Account") for the amounts shown on the File Information on Day One; (c) as the cashier's checks from the File Information are being processed, the account reconciliation issue file ("ARP File") must match the date of funding found in the File Information of the next banking day ("Day Two"); (d) for any cashier's check for which there is insufficient funds in the Funding Account on Day One to fund the purchase of the cashier's check, the Bank is authorized to reject the creation of such cashier's check; (e) fully funded cashier's checks will be printed on Day Two; (f) if the Customer is using one of the Bank's online services, Customer will be able to view information regarding the cashier's checks which were funded and created and those that were rejected; (g) any information from the File Information which can not be used to create a cashier's check will be communicated to the Customer for further research and reconciliation; (h) if any cashier's check is returned as undeliverable, the cashier's check will remain outstanding in the Bank's cashier's check account and escheated according to applicable laws and regulations. If the payee of a cashier's check claims that the cashier's check was lost, stolen or destroyed before the funds are escheated, such claim will be handled in accordance with the Bank's procedures.

I. ACH Tax Payment

1. **Service.** Bank will provide a service (the "Service") whereby Customer can direct Bank, via touchtone telephone or Internet platform, to make tax payments through the automated clearing house (ACH) system from an account with Bank that Customer specifies. Customer may use the service to pay:

   - any federal taxes covered by the Federal Tax Deposit Coupons (Form 8109) that Customer has executed and delivered to Bank from time to time;
   - certain state taxes; and
   - certain municipal taxes.

   Bank may pay taxes from Customer's account in accordance with any instructions issued in Customer's name that Bank verifies pursuant to the security procedures specified in these Service Terms. In using the Service, Customer agrees to comply with and be bound by the Operating Rules of the National Automated Clearing House Association ("NACHA Rules").

2. **Receipt of Instructions and Cancellations.** Customer may issue instructions and cancellations only during service hours that Bank specifies, and Customer acknowledges that Bank may change such service hours upon prior notice to Customer. Bank must receive instructions, including but not limited to payment cancellation instructions, not later than 6:00 p.m. ET (or such other time as Bank specifies) on the Business Day prior to the day on which the tax payment is due. For purposes of this Section, "Business Day" means a day on which the Bank is open for business in its New York office. Instructions received after such time shall not be processed until the following business day and Customer shall be liable for any charges, fees or costs associated with such payment. Bank may reject or delay processing of a tax payment if the request is not complete or is inaccurate or otherwise does not meet the criteria Bank specifies for acceptance herein or in the User Guide (as hereafter defined).

   The Service is not designed or intended to be used for any ACH tax payment that is required to be formatted as an "International ACH Transaction" (or IAT) under the NACHA Rules. Customer agrees not to use or attempt to use the Service to originate any ACH tax payment that is required to be formatted under the NACHA Rules as an "International ACH Transaction" (or IAT). Customer shall indemnify and hold Bank harmless from and against any and all claims, demands, losses, fines, penalties, damages, liabilities and expenses, including, without limitation, legal fees and expenses, resulting directly or indirectly from any ACH tax payment processed or requested to be processed by Customer via the Service which should have been formatted under the NACHA Rules as an IAT.

3. **Tax Payment Security Procedures.**

   (a) A Bank-issued or approved access code and PIN and/or other security device ("Security Device") is required to access the Service. The Customer shall be bound by and adhere to the security procedures and other procedures for use of the Service advised to it in writing through any medium by the Bank, as may be revised from time to time upon notice to the Customer (the "User Guide"). The Customer shall notify the Bank immediately of loss or theft of a Security Device, any unauthorized use of a Security Device or any other breach of security. The Bank may dishonor or disable any Security Device at any time and will inform the Customer of the same. The Customer agrees that any use of the Service with a Security Device is deemed to be carried out directly by and on behalf of the Customer. The Customer agrees to safeguard all Security Devices and to instruct each Authorized User (as defined below) to do the same.

   (b) This Section 3(b) applies to use of the Service through the designated internet platform, but does not apply to touchtone telephone access. Customer shall designate an administrator (the "Administrator") who shall have authority in accordance with the operational instructions for the Service provided to Customer in the User Guide. Customer agrees to notify Bank of any change in Administrator in the manner and form designated by Bank. Any such changes shall be effective at such time as Bank has received such notice and has had a reasonable opportunity to act upon it. In accordance with the procedures contained in the User Guide, the Administrator shall be responsible for (i) designating individuals as users ("Authorized Users"); (ii) identifying the functions of the Service; (iii) requesting, creating, controlling, disseminating, and/or canceling user entitlements; (iv) receiving and distributing materials, notices, documents and correspondence relating to the security procedures; and (v) advising each Authorized User of his/her obligations hereunder and under the User Guide. The Administrator shall provide to the Bank, upon the Bank's request, a list of Authorized Users.

4. **Open Network Access.** The Customer acknowledges that there are certain security, corruption, transmission error and access availability risks associated with using open networks such as the Internet, and the Customer assumes all such risks. The Customer shall make an independent assessment of the adequacy of the Internet and the Bank's security procedures. The Customer further acknowledges that the selection and use by it of any third party security and communications software and third party service providers is the sole responsibility of the Customer, and the Bank disclaims all risks related thereto, notwithstanding that the Bank may recommend certain security and/or communications software and services. The Customer agrees to, at its sole expense, procure and maintain all hardware, browsers, software and telecommunications equipment necessary to access the Service in accordance with the Bank's recommended system configuration.

5. **Funding.** Customer authorizes Bank to debit Customer's applicable account for the amount of each tax payment and for any applicable bank fees and charges when due. In the event Customer does not have sufficient funds in Customer's applicable account to cover the amount of a tax payment, Bank shall have no obligation to make the tax payment for Customer. Bank may require Customer to pay Bank the amount of each tax payment on the date of transmission of the tax payment instruction or otherwise prior to the tax payment due date. Bank may from time to establish or revise maximum dollar limits for the total value of all outstanding files of tax payments that Bank will release on customer's behalf. Bank may change or cancel the limits any time without prior notice to Customer, although Bank will try to notify Customer before Bank does that. Funds Bank receives and holds pursuant to the Service shall be held as a deposit liability to Customer and not in trust for Customer or the taxing authority.

6. **Warranties; Indemnity.** Except as specified below, Customer will be deemed to make the same warranties to Bank as Bank makes pursuant to the NACHA Rules although Customer will not be deemed to warrant the power of the Bank under applicable law to comply with the requirements of the NACHA Rules or the conformity of tax payments and other data Bank transmits to the file specifications contained in the NACHA Rules. Customer further represents and warrants to Bank that: (i) Customer shall not access the Service from any jurisdiction in which the Service is not authorized; and (ii) each tax payment Customer originates will comply with applicable U.S. laws and regulations and Customer acknowledges that payments may not be initiated that violate the laws of the United States.

   Customer agrees to indemnify Bank and Bank's employees, officers, directors and agents, and hold all of them harmless from and against any and all claims, demands, losses, liabilities or expenses (including attorney's fees and costs) resulting directly or indirectly from (a) Customer's breach of any warranty made under this Section and (b) compliance by Bank with any request Customer makes for a cancellation, stop payment, reversal or recall of any tax payment.

   Bank shall have no responsibility for any delay by any ACH Operator (as such term is defined in the NACHA Rules) or taxing authority in processing any tax payment Bank transmits to such entity or failure by such entity to process or apply any tax payment.

7. **Stop Payments; Reversals and Recalls.** Customer's instruction to stop payment of, reverse or recall one or more tax payments must be received by Bank in such time and manner as Bank specifies. Bank will process these transactions in accordance with Bank's procedures advised to Customer. Any reversal or recall initiated by Bank is subject to acceptance by the relevant taxing authority. Tax payment instructions may not be amended or modified.

8. **Payment Limits.** Bank may from time to time establish or revise (a) maximum dollar limits for each payment to be made by the Customer to a specified taxing authority, and (b) aggregate limits for all payments to be made by the Customer to a specified taxing authority within a 24-hour period. Bank may change or cancel the limits at any time without prior notice to Customer, although Bank will endeavor to give prior notice to Customer. Bank may require Customer to pay Bank the amount of any tax payment on the date of transmission to Bank or otherwise prior to the settlement date. Bank also may require Customer to maintain collateral with Bank in an amount Bank specifies.

9. **Limitation of Liability.** Bank's maximum aggregate liability in connection with the Service shall be limited as provided in the Account Documentation (as defined in Section 9 below) and shall be further limited to the lesser of the amount of any penalty or interest actually imposed by the applicable taxing authority or the total fees Customer paid Bank during the prior 12 months.

10. **Incorporation of Account Documentation; Termination.** The Bank's terms governing the operation of business accounts and services ("Account Documentation") are incorporated herein, as the same may be amended from time to time. If and to the extent that there is a conflict between the Account Documentation and these Service Terms, the provisions of these Service Terms shall prevail. In addition to Bank's termination rights under the Account Documentation, Bank shall have the right to terminate or suspend these Service Terms and the Service upon notice to Customer in the event of Customer's breach of the NACHA Rules.

J. Remote Capture Service Terms

Remote Capture is a remote scanning service that processes remittances and promotes Customers' efficiency in their businesses. Through this service, the Customer's remittance deposits can be imaged and transferred to the Bank via a Bank supplied data platform for further processing and posting to the Customer's deposit account.

1. **Service**

   The Bank, which may include designated agents of the Bank, will provide Customer with Remote Capture services for domestic transactions (the "Service") in accordance with the provisions set forth in this document (the "Service Terms"). The Service allows Customer to electronically transmit deposits of eligible checks and items (eligible checks and items are limited to personal checks, money orders, business checks, cashiers checks, traveler's checks payable in U.S. Dollars and drawn on U.S. banks or U.S. Postal Service Money Orders, payable to the Customer) by using a capture device, including a desktop scanner or mobile device (hereinafter referred to as a "Scanner"), to create an electronic image of an original paper check or item and other paper source documents (collectively, "Item") and transmitting the image of the Item ("Item Image") and related data to Bank. The provisions of the Lockbox Service Terms, Account Terms, Client Access Service Terms, and any other applicable Service Terms as may be amended from time to time (collectively, the "Account Documentation") are incorporated into these Service Terms by reference. By signing the applicable Account Documentation or by using or continuing to use the Service, Customer agrees to these Service Terms. If and to the extent there is a conflict between the Account Documentation and these Service Terms, the provisions of these Service Terms will prevail.

   a. Customer agrees that after the Item Image has been created and transmitted to the Bank for deposit, Customer shall not otherwise transfer or negotiate the original Item, substitute check or any other image of the Item. Customer further agrees that Customer shall be solely responsible for the original Items, including storage, retrieval and destruction. Customer must have in place policies and procedures for the secure storage and destruction of the original Items.

   b. Customer agrees that a copy made from the Item Image or substitute check of the Item, as defined by federal law, will become the legal representation of the Item for all purposes, including return item processing.

   c. Subpart B of Federal Regulation CC (availability of funds) does not apply when electronic images of Items are transmitted to Bank. Funds from deposits made via this Service will be available in accordance with the availability schedule for the Service. However, Bank may apply additional delays on the availability of funds based on any other factors as determined in the Bank's sole discretion.

2. **Processing**

   Customer shall provide through Bank approved devices, including a desktop scanner or mobile device, the Item Images in the format and specifications and in accordance with the procedures required by the Bank. The Bank may process the Items as substitute checks, electronic images or photos-in-lieu, as may be applicable for further clearing through another financial institution, clearinghouse or the Federal Reserve Bank. Customer assumes sole responsibility for the creation of these images and their subsequent provision to the Bank. If any Item Image does not meet the Bank's or any transferee's standard processing requirements, in processing such Items, Customer assumes all risk of loss or delay and authorizes the Bank to either (a) return the Item to the Customer without further processing, (b) process the Item as sent from the Customer, (c) process the Items as photos--in-lieu of the originals, or (d) repair or attempt to repair the Items for further processing. Access to the Item Images and the use of a mobile device in conjunction with the Service are governed by the Client Access Service Terms, as may be amended from time to time.

3. **Deposit Time**

Item Images are deemed received by the Bank when the Item Images have been transferred onto the Bank's system and validated by the Bank. Based upon the size of the batch of Items, there may be a significant delay between the time Customer begins to send the Items and the completion of the transfer as stated above. If Bank receives and validates the submitted deposit transmission no later than the Bank's designated cut off time (the "Cutoff Time") on a day that the Bank is generally open for business, i.e., Monday through Friday excluding weekends and state or federal holidays ("Business Day"), Bank will consider that Business Day to be the day of deposit (*i.e.*, the date deposit is credited). If Bank receives and validates the submitted deposit transmission after the Cutoff Time or on a non-Business Day, the deposit will be considered to be made on the next Business Day. Whether the Cutoff Time has been met will be determined by the time displayed on the Bank's internal system clocks which may not necessarily be synchronized with the internal clock displayed on Customer's computer or device. For this reason, Bank suggests that Customer submit its deposit transmissions to Bank sufficiently in advance of the Cutoff Time to avoid the possibility of missing the Cutoff Time.

4. **Foreign Items**

The Service only accepts and processes Items drawn on U.S. chartered banks.

5. **Warranties.**

5.1 Customer represents and warrants to Bank that:

- Customer will capture and transmit all Item Images using Bank approved hardware and software applicable to the Service's function;
- Any Image Bank receives accurately and legibly represents all of the information on the front and back of the Item as of the time the Item was truncated;
- The information Customer transmits to Bank corresponding to an Item contains a record of all applicable MICR-line information required for a substitute check and the accurate amount of the Item;
- The Item Image conforms to the technical standards for an electronic Item set forth in Regulation J or Federal Reserve Bank Operating Circular 3, and for a substitute check set forth in Regulation CC;
- No person will receive a transfer, presentment, or return of, or otherwise be charged for, the Item (either the original Item, or a paper or electronic representation of the original Item) such that the person will be asked to make payment based on an Item it has already paid;
- Customer will not redeposit through this Service any Item previously deposited and returned to Customer;
- Customer will employ commercially reasonable security measures, including firewalls, sufficient to protect against unauthorized access or duplicate presentment;
- Customer will only transmit Items that originated as paper checks;
- Customer will comply with all applicable laws and regulations;
- Customer will not use the Service for any purpose prohibited by foreign exchange regulations, postal regulations or any other treaty, statute, regulation or authority; and
- If the Customer is depositing Items on behalf of third parties, the Customer also represents and warrants to the Bank that with respect to each Item deposited through the Service, the owner of the Item has authorized the electronic transmittal of the Item and guarantees all prior endorsements; Customer has established an anti-money laundering program in compliance with anti-money laundering laws and regulations applicable to it and such anti-money laundering program includes policies, procedures and controls designed to detect and prevent money laundering, including "know-your-customer" policies and procedures, monitoring of transactions for suspicious activities and reporting of suspicious activities, which Customer believes effectively prevents the use of Customer's operations, personnel or facilities for money laundering purposes.

6. **New Features.** Bank may, from time to time, introduce new features to the Service or modify or delete existing features in its sole discretion. Bank shall notify Customer of any of these changes to features if Bank is legally required to do so. By using any new or modified features when they become available, Customer agrees to be bound by the rules concerning these features.

7. **Disclaimer.**

Bank makes no representations or warranties, whether express, implied or statutory regarding or relating to any of the software, capture devices or other hardware and/or access to or use of them or the related materials and the Service. Bank specifically disclaims any and all implied warranties of merchantability and fitness for a particular purpose and non-infringement. Bank and its subcontractors also do not guarantee that Customer's access to the Services will be uninterrupted, error free or secure.

8. **Indemnification.**

Customer agrees to indemnify and hold the Bank harmless for any loss or expense (including attorney's fees and expenses of litigation) resulting from: breach of any of the warranties made by Customer pursuant to these Service Terms or the Lockbox Service Terms; any claim pertaining to any warranty or indemnity that Bank makes with respect to an Item under the Check Clearing for the 21st Century Act, Federal Reserve Board Regulations CC and J and all other laws, regulations and industry and clearing house rules applicable to Items as either the bank of first deposit, truncating or reconverting bank.

9. **Customer Liability.**

Customer shall be solely responsible if any Item for which Customer has been given provisional credit is returned or reversed, and neither Bank nor its subcontractors shall be liable or responsible for same. Customer acknowledges that all credits received for deposit are provisional, subject to verification, final settlement, warranty claims or return. Information and data reported under these Service Terms: (a) may be received prior to final posting and confirmation and are subject to correction and (b) are for informational purposes only and may not be relied upon. Customer agrees that Bank shall have no liability for the content of payment-related information as received from the Customer. Customer shall be solely responsible for the original Items, including storage, retrieval and destruction. Customer agrees to provide a legible copy of an image or the original Item if requested by the Bank. If Customer is unable to provide the original or legible copy, Customer shall be liable for any associated loss or claim involving the Item.

10. **Suspension/Cancellation of Service.**

Bank reserves the right to suspend or terminate the Service, in whole or in part if Bank believes Customer is in breach of these Service Terms or is otherwise using or accessing the Service in a manner inconsistent with the rules and regulations relating to the Service being provided and such breach, use or access is not cured within three business days after notice to Customer. Further, this Service will automatically terminate if the Customer's account with the Bank is closed for any reason. Either party may terminate the Service upon thirty (30) days' prior written notice to the other party.

11. **Intellectual Property Ownership.**

Neither these Service Terms nor the provision of the Service transfer to Customer any ownership or proprietary rights in the Bank's technology or any work or any part thereof, and all right, title and interest in and to the Bank's technology will remain solely with Bank or its subcontractors.

12. **Audits.** Customer agrees that the Bank shall have the right to audit Customer's books, records, processes and procedures for managing and maintaining the security and safety of the scanners, transmissions and original Items, including the right to audit Customer's and Customer's agents, if any, physical locations where Customer scans original Items and processes electronic check images and data related to the Service. . Customer agrees that the use of scanners, including mobile devices, in conjunction with this Service is limited to the United States.

K. ELECTRONIC CHANNELS

1. Service and Service Terms.

The Bank will provide a service (the "**Service**") for electronic access to the Customer's account information, reports and data (collectively, "**Data**") and for the electronic transmission to the Bank of messages, service requests, and payment and non-payment instructions (each an "**Instruction**") and from the Bank of messages, notifications and alerts, via the J.P. Morgan Access® Online, J.P. Morgan Access® Mobile, J.P. Morgan Host-to-Host/managed file transfer and J.P. Morgan Treasury Services API channels. The Bank reserves the right to modify the applications and products available via the Service. The Service is governed by these terms (the "**Service Terms**"), which incorporate the Bank's terms governing the business accounts and services, including service terms that govern the Bank's processing of Instructions transmitted via the Service (collectively, the "**Account Documentation**"), as the same may be amended from time to time. If and to the extent that there is a conflict between the Account Documentation and these Service Terms, the provisions of these Service Terms shall prevail. Capitalized terms used in these Service Terms, and not otherwise defined, have the meaning set forth in the Global Account Terms or other account terms applicable to the Customer. JPMorgan Chase Bank, N.A. is organized under the laws of U.S.A. with limited liability.

2. Security Procedures and Other Controls

2.1. **General.** The security procedures for each channel are set forth below, as may be modified on notice to the Customer through any medium (each, a "**Security Procedure**"). Any Instruction, the authenticity of which has been verified through a Security Procedure, shall be effective as that of the Customer, whether or not authorized, and notwithstanding that the Instruction may result in an overdraft of an Account. Controls unilaterally implemented by the Bank shall not be deemed to be Security Procedures for purposes hereof unless explicitly identified as such in writing. The Customer is responsible for implementing any procedures and requirements set forth in the applicable documentation provided to it by the Bank, as well as any subsequent modification to the procedures and requirements that are designed to strengthen the Security Procedures.

2.2. **Security Procedures and Other Controls for Access Online and Mobile Channels.**

2.2.1. **Access Online.** The Security Procedure for verifying payment Instructions given in the Customer's name via the Access Online channel is validation of a user ID and confidential password of an Authorized User (as defined in Section 2.6 below), a token code generated by a Bank issued or approved security device ("**Security Device**") assigned to that Authorized User and Bank transaction review as specified in Section 2.5.

2.2.2. **Access Mobile.** The Security Procedure for verifying payment instructions given in the Customer's name via the Access Mobile channel is either (i) validation of the registration with the Bank of the mobile device, a biometric identifier, and the private swipe key of an Authorized User (as defined in Section 2.6 below) and transaction review as specified in Section 2.5 or (ii) validation of a user ID and confidential password of an Authorized User (as defined in Section 2.6 below), a token code generated by Security Device assigned to that Authorized User and transaction review as specified in Section 2.5.

2.2.3. **Controls Offered to Customer.** For Access Online and Mobile, the Customer may choose to apply certain controls offered by the Bank to the Customer from time to time designed to reduce the Customer's risk of unauthorized transactions. The Customer is responsible for choosing controls that are appropriate for the Customer taking into account, among other things, the nature and scale of the Customer's business, including the size, type and frequency of payment orders normally issued to the Bank, and the nature of its technical environment, internal accounting controls and information security policies and procedures (collectively, "**Customer Internal Controls**"). The Security Procedure that is established by agreement of the Customer and the Bank herein is established in view of the Customer Internal Controls applied by the Customer. For the avoidance of doubt, none of the controls described in this Section are part of the Security Procedures for the channels.

2.3. **Security Procedures and Certificate Procedures for Host-to-Host/Managed File Transfer Channel.** The Security Procedure for verifying payment instructions given in the Customer's name via the Host-to-Host/managed file transfer channel is authentication of a digital signature certificate, which authenticates transmitted files on the basis of the corresponding security key (the "**Signature Certificate**") and transaction review as provided in Section 2.5. The Customer and the Bank will use the following procedures for the use of a transport certificate, which establishes a secure session between the Bank and the Customer on the basis of a corresponding security key (the "**Transport Certificate**") and the Signature Certificate. Each of the Signature Certificate and the Transport Certificate are referred to herein as a "**Certificate**" and the corresponding security key as a "**Security Key**".

2.3.1. **Certificate Procedures and Requirements.** The Customer shall comply with the Bank's procedures and requirements for Certificates and Security Keys notified to the Customer, including but not limited to Certificate validity period, key strength and cryptographic specifications, as amended from time to time. Any request to the Bank to add, update or delete a Security Key shall include the applicable Certificate, a text file or other physical representation of the public Security Key of such Certificate and any other information in the manner and form designated by the Bank. The Bank shall have the right to rely on any request that the Bank believes in good faith to have been sent by the designated security administrator ("**Security Administrator**"), notwithstanding that such Security Administrator may be a third party acting on behalf of the Customer.

2.3.2. **Certificate Expiration.** Notwithstanding any courtesy notifications the Bank may send to the Customer regarding the Customer's impending Certificate expiration, the Customer acknowledges that it is the Customer's sole responsibility to update the Certificate prior to its expiration date. The Bank shall have no liability for any loss or damage (including, for the avoidance of doubt, any indirect, special, punitive or consequential damages or losses) arising from the Customer's failure to timely update its Certificate. To allow for proper execution of administrative procedures, and to prevent any lapse in service or emergency procedures, the Customer must request a Certificate change at least 30 days prior to actual Certificate expiration.

2.4. **Security Procedure and Certificate/Token Procedures for API Channel.** The Security Procedure for verifying payment instructions given in the Customer's name via the API channel is authentication of a Signature Certificate and transaction review as provided in Section 2.5.

2.4.1. **Secure Session.** The Customer and the Bank will establish a secure session between the Customer and the Bank by validation of either (i) a Transport Certificate or (ii) a Bank-generated token ("**API Token**").

2.4.2. **Certificate Procedures and Requirements.** The Customer and the Bank will use the procedures set forth in Sections 2.3.1 and 2.3.2 for the use of Certificates for the API channel.

2.4.3. **API Token Procedures and Requirements.** The Customer shall comply with the Bank's procedures and requirements for API Tokens, as amended from time to time, including but not limited to the generation and safekeeping of any credentials used for the validation of the API Token, notified to the Customer. The Bank shall have the right to revoke an API Token at any time, including in reliance on a request or communication related to an API Token that the Bank believes in good faith to have been sent by the Security Administrator, notwithstanding that such Security Administrator may be a third party acting on behalf of Customer. Any request to the Bank to update an API Token shall be made solely in the manner and form designated by the Bank.

2.5. **Transaction Review.** In addition to the Security Procedures described above, the applicable Security Procedure for each channel also includes transaction review based on various risk characteristics. The transaction review shall be conducted in accordance with commercially reasonable protocols selected by the Bank. Additional authentication from the Customer, such as call-back verification, may be required to complete certain transactions identified by the Bank through transaction review.

2.6. **Confidentiality/Security Breach.** The Customer will be responsible for safeguarding and ensuring that the Security Procedures, Security Devices, API Tokens and any credentials used for the validation of the API Token are known to and used (i) in the case of Access Online and Mobile, only by individuals designated as users by the Security Administrators ("**Authorized Users**"), or, (ii) in the case of the Host-to-Host/managed file transfer and API channels, only by the Security Administrators, as applicable. The Customer shall notify the Bank immediately in the event of any loss, theft or unauthorized use of a Security Procedure, a Security Device, API Token, any credentials used for the validation of the API Token or any other breach of security. The Bank may dishonor or disable any Security Device, API Token, any credentials used for the validation of the API Token or any aspect of the Security Procedures at any time without prior notice and will inform the Customer of the same. In addition, each Customer must implement its own physical and logical security, as well as management controls, that appropriately protect the hardware, software, and access controls used in the transaction process from unauthorized access and use.

2.7. **Security Administrator Designation.** The Customer shall designate Security Administrators who shall have equal authority as specified in Section 2.8 below. The Bank is entitled to rely on any such designation of a Security Administrator. The Customer agrees to notify the Bank of any change in Security Administrators in the manner and form designated by the Bank. Any such change shall be effective at such time as the Bank has received such notice and has had a reasonable opportunity to act upon it.

2.8. **Security Administrator Responsibilities.** Each Security Administrator shall be authorized by the Customer to and be responsible for (i) designating individuals as Authorized Users with respect to the Access Online and Mobile channels; (ii) identifying the functions of the Service that each Authorized User may access; (iii) requesting, creating, controlling, disseminating, and/or canceling user entitlements with respect to the Access Online and Mobile channels; (iv) managing the Customer's Certificates and corresponding Security Keys or API Tokens and any credentials used for the validation of the API Token with respect to the Host-to-Host/managed file transfer and API channels, as applicable; (v) receiving and distributing materials, notices, documents and correspondence relating to the Security Procedures, as applicable; and (vi) advising each Authorized User of his/her obligations hereunder or under any of the applicable Account Documentation. The Security Administrators shall provide to the Bank, upon the Bank's request, a list of Authorized Users for the Access Online and Mobile channels. In the absence of a valid designation of a Security Administrator at any time or in the event that, after reasonable efforts, the Bank is unable to contact a Security Administrator, the Bank may deliver Security Devices, API Tokens (and any attendant credentials) and materials and deliver/receive Security Keys to/from any person authorized to act on behalf of the Customer with respect to the Accounts.

2.9. **Processing.** The Customer acknowledges that the application of the Security Procedures and any controls unilaterally implemented by the Bank may cause delays in processing Instructions or result in the Bank declining to execute an Instruction.

3. Open Network Access; Equipment

THE SERVICE IS PROVIDED "AS IS" AND "AS AVAILABLE". TO THE MAXIMUM EXTENT PERMITTED UNDER APPLICABLE LAW, ALL WARRANTIES AND REPRESENTATIONS, EXPRESS, STATUTORY OR IMPLIED, WITH REGARD TO THE SERVICE ARE HEREBY DISCLAIMED, INCLUDING ANY WARRANTIES OF MERCHANTABILITY, SATISFACTORY QUALITY, FITNESS FOR A PARTICULAR PURPOSE AND COURSE OF DEALING OR USAGE OF TRADE OR WARRANTIES OF NON-INFRINGEMENT OR WARRANTIES AS TO ANY RESULTS TO BE OBTAINED FROM THE USE OF THE SERVICE. TO THE EXTENT THAT ANY IMPLIED WARRANTIES CANNOT BE DISCLAIMED UNDER APPLICABLE LAW, ANY SUCH IMPLIED WARRANTIES ARE LIMITED IN DURATION TO 30 DAYS FROM THE INITIAL DELIVERY DATE OF THE RELEVANT SERVICE. THE BANK AND ITS THIRD PARTY DATA AND SERVICE PROVIDERS DO NOT WARRANT OR GUARANTEE THE SECURITY, SEQUENCE, TIMELINESS, ACCURACY, PERFORMANCE OR COMPLETENESS OF THE DATA OR THAT ANY PART OF THE SERVICE WILL BE ERROR-FREE, WITHOUT DELAY OR UNINTERRUPTED.

The Customer is responsible for, at its sole expense, obtaining, installing, maintaining and operating all browsers, software, hardware, telecommunications equipment or other equipment (collectively, "**System**") necessary for the Customer to access and use the Service in accordance with the Bank's recommended system configuration. The Bank makes no endorsement of any System or third party site, notwithstanding that the Bank may recommend certain Systems or provide a link to a third party site where the Customer may download software. The Customer shall at all times maintain current and effective anti-virus, anti-spyware or other security software and shall take all reasonable measures to maintain the security of its System. The Customer acknowledges that there are certain security, corruption, transmission error, and access availability risks associated with using open networks such as the Internet. The Customer further acknowledges that it has made an independent assessment of the adequacy of the Internet, the System and the Security Procedures in connection with the use of the Service. The Customer assumes all risks and liabilities associated with the operation, performance and security of its System and the use of the Internet or other open networks, failure or use of Customer's or third party equipment, hardware, browsers, operating systems and/or other software or programs, and services or persons outside of the Bank's control, and the Bank disclaims all such risks. The Customer shall not use any equipment, hardware, software or program that harms the Bank. The Customer agrees to indemnify and hold the Bank, and its agents, employees, officers and directors, harmless from and against any and all claims, damages, demands, judgments, liabilities, losses, costs and expenses arising, directly or indirectly, from the Customer's use of Customer's or third-party software or program. The Bank may in its discretion provide training or information on best practices to the Customer from time to time but in so doing it will not be considered a consultant or advisor with respect to cybersecurity.

4. Instructions; Data

4.1. The Customer shall be solely responsible for the genuineness and accuracy, both as to content and form, of all Instructions given to the Bank's in the Customer's name and verified through the applicable Security Procedure.

4.2. The Customer acknowledges that Data may not have been reviewed by the Bank, may be inaccurate, and may be periodically updated and adjusted. The Bank is not obligated to assure the accuracy of Data and will not be liable for any loss or damage arising out of the inaccuracy of Data. Further, the Bank shall have no liability for the receipt or viewing by any party of Data sent to the destinations designated by the Customer, including but not limited to email addresses, fax and telephone number(s).

5. Customer Warranties

The Customer represents, warrants and covenants to the Bank that: (i) prior to submitting any document or Instruction that designates Authorized Users, the Customer shall obtain from each individual referred to in such document or Instruction all necessary consents to enable the Bank to process the data set out therein for the purposes of providing the Service; (ii) the Customer has accurately designated in writing or electronically the geographic location of its Authorized Users and shall provide all updates to such information; (iii) the Customer shall not access the Service from any jurisdiction which the Bank informs the Customer or where the Customer has knowledge that the Service is not authorized; and (iv) the Security Procedures offered to the Customer conform to the Customer's wishes and needs and the Customer has not requested Security Procedures other than those expressly agreed by the Customer and the Bank. The Customer hereby represents, warrants and covenants to the Bank that these Service Terms constitute its legal and binding obligations enforceable in accordance with its terms.

6. Miscellaneous

6.1. The additional jurisdiction specific provisions set forth in the attached Exhibit are applicable to the Customer based on the domicile of the Customer. Where any local laws or regulations of any jurisdiction apply as a result of the Customer's Authorized Users accessing the Service from such jurisdiction or as a result of the location of such accounts in such jurisdiction, the jurisdictional specific provisions of that jurisdiction set forth in the attached Exhibit shall apply to the use of the Service by such Authorized Users.

6.2. These Service Terms shall be governed by and construed in accordance with the laws of the State of New York, USA (without reference to the conflict of laws rules thereof).

6.3. All disputes relating to or in connection with these Service Terms solely arising outside the United States shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance with the said Rules. The place of arbitration shall be (i) Singapore where the dispute arises solely in Asia and (ii) London where the dispute arises elsewhere (other than the United States) and the arbitration shall be conducted in English, except that (a) disputes solely between a Customer domiciled in the People's Republic of China and JPMorgan Chase Bank (China) Company Limited shall be submitted to the China International Economic and Trade Arbitration Commission ("**CIETAC**") for arbitration in accordance with its rules in effect at the time an application is made, with the place of arbitration being Beijing and the arbitration being conducted in English; and (b) disputes involving a Customer domiciled in Taiwan shall be irrevocably submitted to the exclusive jurisdiction of the courts of the State of New York and the United States District Court located in the borough of Manhattan in New York City. With respect to any dispute, suit, action or proceedings arising in the United States relating to these Service Terms, the Customer irrevocably submits to the exclusive jurisdiction of the courts of the State of New York and the United States District Court located in the borough of Manhattan in New York City.

7. Mobile

7.1. Accepting use of the Bank's SMS text notification service and/or Access Mobile channel constitutes the Customer's authorization for the Bank to send Data, message notifications and alerts through any communication service providers, including both Internet and telecommunications providers, which shall each be deemed to be acting as the Customer's agent. Such providers may not encrypt communications.

7.2. Authorized Users may be required to accept an application agreement or license in order to download Access Mobile. The Customer acknowledges that the Account Documentation shall in all cases govern the provision of these services.

7.3. The Customer acknowledges that the Bank shall not be liable for any delays in any Data, message notification or alert delivered via any mobile device.

EXHIBIT A - JURISDICTION SPECIFIC PROVISIONS

A. Australia & New Zealand

To the extent that any supply made by the Bank under these Service Terms is a taxable supply for the purposes of the Australian Goods and Services Tax, or that goods and services tax under the New Zealand Goods and Services Tax Act 1985 is payable in respect of any supply under this License Agreement, ("GST"), the fees payable in respect of that taxable supply ("original amount") will be increased by the amount of GST payable in respect of that taxable supply. Customer must pay the increased amount at the same time and in the same manner as the original amount.

B. Indonesia

The Bank and the Customer agree that, for the effectiveness of any termination of these Service Terms or the Services provided hereunder, they hereby waive any provisions, procedures and operation of any applicable law to the extent a court order is required for the termination of these Service Terms and the Account Documentation as applicable to the services provided under these Service Terms.

Section 7.3 shall be replaced by "Except for losses directly resulting from errors or delay caused by the Bank's gross negligence or willful misconduct, the Customer acknowledges that the Bank shall not be liable for any delays in any Data, message notification or alert delivered via any mobile device."

C. Malaysia/Labuan

In relation to accounts held in Malaysia (excluding Labuan) and/or where the Service is provided in Malaysia (excluding Labuan) references in the Service Terms to "Bank," shall mean J.P. Morgan Chase Bank Berhad. In relation to accounts held in Labuan and/or where the Service is provided in Labuan, references in the Service Terms to "Bank," shall mean J.P. Morgan Chase Bank, N.A., Labuan Branch. The Service provided by J.P. Morgan Chase Bank Berhad shall be accessed through http://www.jpmorganaccess.com.my and the Customer undertakes not to access or utilize or attempt to access or utilize the Service through any other JPMorgan website.

D. Republic of China (Taiwan)

Section 7.3 shall be replaced by "Except for losses directly resulting from errors or delay caused by the Bank's gross negligence or willful misconduct, the Customer acknowledges that the Bank shall not be liable for any delays in any Data, message notification or alert delivered via any mobile device."

The Customer acknowledges that it will take steps to ensure it enters into the correct website before attempting to access the Service.

E. European Union.

The Customer acknowledges that it is not a "consumer" for the purpose of the European Union's Electronic Commerce Directive ("ECD") (i.e., that it is not an individual) and agrees that the Bank shall not be required to make any disclosures or do any other thing which a non-consumer may agree not to require under the UK rules and legislation implementing the ECD. For further information on the Bank, please see "Notice regarding EU e-commerce information" in the Terms & Conditions on http://www.jpmorgan.com.

A. The Bank will collect information about the Customer and the Customer's employees and agents (such as, without limitation, authorized signatory details) which may constitute personal data for the purposes of the data protection law. Such personal data may be collected by or on behalf of the Bank in a number of ways (the "Collection Methods"), including via documentation relating to the provision to or use by the Customer of electronic banking services or via the Customer's use of such electronic banking services and via other correspondence or communications between the Customer and the Bank.

B. Details of the Bank's processing activities of personal data can be found in its EMEA Privacy Policy, which is available on the Bank's website at www.jpmorgan.com/privacy/EMEA. The Bank's EMEA Privacy Policy may be updated or revised from time to time without prior notice. The EMEA Privacy Policy may be used to assist the Customer with providing a fair processing notice to the Customer's underlying data subjects.

C. The Customer agrees that it has an appropriate legal basis to provide personal data to the Bank and that the Customer will provide any requisite notice to individuals and ensure that there is a proper legal basis for the Bank to process the personal data as described in and for the purposes detailed in the Bank's EMEA Privacy Policy. Both the Customer and the Bank will comply with its respective obligations under applicable data protection and privacy laws.

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Eligibility for particular products and services is subject to final determination by J.P. Morgan and/or its affiliates.

EXHIBIT B – City of Chandler

EARNINGS CREDIT RATE

The City will continue to receive J.P. Morgan's premium managed earnings credit rate (ECR) currently at 0.18%. The earnings credit rate is a bank managed rate which is reviewed and updated periodically by J.P. Morgan after considering a range of factors, including the market rate environment. Using a managed rate helps to maintain pricing flexibility while helping to protect you from the short-term rate volatility that could result from using an indexed rate.

The earnings credit allowance is calculated based on the average daily positive collected balances in the non-interest-bearing accounts less the reserve requirement (currently 0%) using the following calculation:

Monthly earnings credit allowance calculation

$$\frac{\text{(Average monthly investable balance x ECR x actual number of days in month)}}{\text{Actual number of days in year}}$$

CHANDLER arizona
Community of Innovation

City Council Memorandum **Management Services** **Memo No.** 21-050

Date:	April 19, 2021
To:	Mayor and Council
Thru:	Joshua H. Wright, Acting City Manager Dawn Lang, Management Services Director
From:	Kristi Smith, Accounting Manager
Subject:	Claims Report for the Quarter Ended March 31, 2021

Proposed Motion:

Move to accept the claims report for the quarter ending March 31, 2021, which is included with this memo as an attachment.

Background/Discussion

The claims report for the Accounts Payable payments for the quarter ending March 31, 2021, is attached. Per Section 3-6 of the City Code, the City Manager/designee shall advise the City Council of all claims and demands paid, together with the name of the vendors or payees, dates paid and amounts.

Attachments

Claims Report for the Quarter Ended March 31, 2021

AP Claims Report- City Clerk

Time run: 4/1/2021 9:49:50 AM

Report Parameters:

Check Date - 01/01/2021,03/31/2021; Bank_Account_Name - E-PAYABLES,GENERAL,OPERATING

Payment Number	Payment Date	Vendor Name	Amount
691729	06-Jan-2021	ABC ASPHALT LLC	73,637.79
691730	06-Jan-2021	ADVANCED STRUCTURAL ENGINEERING, INC	4,220.40
691731	06-Jan-2021	AGILE ACCESS CONTROL INC	5,579.52
691732	06-Jan-2021	ALL ABOUT POOLS AND SPAS LLC (R)	11.25
691733	06-Jan-2021	ALLIED UNIVERSAL SECURITY SERVICES	1,145.70
691734	06-Jan-2021	ALTERNATIVE MAINTENANCE SERVICE	500.00
691735	06-Jan-2021	APL ACCESS & SECURITY	22,737.51
691736	06-Jan-2021	ARIZONA ATTORNEY GENERAL	13,013.01
691737	06-Jan-2021	ARIZONA MATERIALS LLC	6,212.24
691738	06-Jan-2021	ARIZONA PUBLIC SERVICE COMPANY	43.58
691739	06-Jan-2021	ARIZONA STATE UROLOGICAL INSTITUTE (R)	67.51
691740	06-Jan-2021	B&E APPRAISAL SERVICE LLC	335.00
691741	06-Jan-2021	BOUND TREE MEDICAL LLC	2,205.19
691742	06-Jan-2021	CENTURYLINK	580.00
691743	06-Jan-2021	CENTURYLINK	16,576.27
691744	06-Jan-2021	CHANDLER CHAMBER COMMUNITY FOUNDATION	1,056.00
691745	06-Jan-2021	CITY OF PHOENIX	2,507.22
691746	06-Jan-2021	COMPUTER AID, INC	69,924.99
691747	06-Jan-2021	DATA PROCESSING AIR CORPORATION	233.00
691748	06-Jan-2021	DAY AUTO SUPPLY, INC	508.86
691749	06-Jan-2021	DECA SOUTHWEST	3,527.37
691750	06-Jan-2021	DIVING BOARD SOLUTIONS, LLC	9,805.17
691751	06-Jan-2021	DPC ENTERPRISES LP	43,072.39
691752	06-Jan-2021	SALT RIVER PROJECT	164.77
691753	06-Jan-2021	AGNEW, KC	65.00
691754	06-Jan-2021	BANSNER, ZACKARY J	152.00
691755	06-Jan-2021	CANJAR, TERESA M	75.00
691756	06-Jan-2021	DAVID, CONNOR M	364.58
691757	06-Jan-2021	PENILLA, DERRICK A	364.94
691758	06-Jan-2021	POPE, CHAD A	137.95
691759	06-Jan-2021	VAN HORNE, SUSAN	250.00
691760	06-Jan-2021	WATERS, STEPHEN C	4,305.00
691761	06-Jan-2021	ESTRADA, GERARDO (R)	15.00
691762	06-Jan-2021	FERGUSON ENTERPRISES, LLC	751.19
691763	06-Jan-2021	GILA RIVER INDIAN COMMUNITY	4,396.89
691764	06-Jan-2021	GRAINGER INC	1,540.82
691765	06-Jan-2021	GRAINGER INC	744.21
691766	06-Jan-2021	GREAT TRAINING LLC	240.00
691767	06-Jan-2021	GUIDESOFT INC	1,426.68
691768	06-Jan-2021	HAZEN AND SAWYER	57,659.00
691769	06-Jan-2021	HOM, INC	2,917.35
691770	06-Jan-2021	HOOPES PHOTOGRAPHY	800.00
691771	06-Jan-2021	ICOR TECHNOLOGIES INC	245,838.07
691772	06-Jan-2021	KARY ENVIRONMENTAL SERVICES INC	945.20
691773	06-Jan-2021	KELLER ELECTRICAL INDUSTRIES INC	5,566.00
691774	06-Jan-2021	KYOCERA DOCUMNET SOLUTIONS WEST, LLC	19,114.61
691775	06-Jan-2021	LARRY MILLER TOYOTA	25,498.22
691776	06-Jan-2021	LEVEL 3 COMMUNICATIONS LLC	8,137.15

691777	06-Jan-2021	LIFELONG FITNESS BY KATHI	250.00
691778	06-Jan-2021	LIGHTING UNLIMITED INC	138.73
691779	06-Jan-2021	LIM FAMILY MARTIAL ARTS	945.00
691780	06-Jan-2021	LINCOLN AQUATICS	4,146.22
691781	06-Jan-2021	LITHO TECH, INC.	4,758.86
691782	06-Jan-2021	LITTLER MENDELSON PC	1,176.00
691783	06-Jan-2021	METERING SERVICES INC	8,313.80
691784	06-Jan-2021	MUNICIPAL EMERGENCY SERVICES INC	3,085.37
691785	06-Jan-2021	NESTLE PURE LIFE	2,489.63
691786	06-Jan-2021	NORTHERN ARIZONA CENTER FOR ENTREPRENEURSHIP AND TECHNOLOGY	20,833.33
691787	06-Jan-2021	ORACLE AMERICA INC	244.63
691788	06-Jan-2021	OTTO LOGISTICS LLC	2,978.82
691789	06-Jan-2021	PARTNER ENGINEERING AND SCIENCE, INC	22,060.00
691790	06-Jan-2021	PORTER, DALE (R)	3.57
691791	06-Jan-2021	WEGMANN, MONICA ROSE (R)	46.61
691792	06-Jan-2021	RAFTELIS FINANCIAL CONSULTANTS INC	15,517.50
691793	06-Jan-2021	RAILPROS FIELD SERVICES, INC	9,774.00
691794	06-Jan-2021	REYES & SONS LANDSCAPING LLC	103,489.80
691795	06-Jan-2021	RICOH USA INC	90.22
691796	06-Jan-2021	RYAN HERCO PRODUCTS CORP	495.12
691797	06-Jan-2021	SENERGY PETROLEUM, LLC	7,846.34
691798	06-Jan-2021	SHERWIN WILLIAMS CO	670.24
691799	06-Jan-2021	SMELTZER, TODD JAMES	688.75
691800	06-Jan-2021	SPORTBALL PHOENIX	1,576.80
691801	06-Jan-2021	T-MOBILE USA	59.50
691802	06-Jan-2021	T2 PEST SERVICES	32.00
691803	06-Jan-2021	TEL TECH NETWORKS, INC.	1,447.35
691804	06-Jan-2021	THATCHER COMPANY OF ARIZONA	126,400.18
691805	06-Jan-2021	UNIVERSAL POLICE SUPPLY CO	4,189.22
691806	06-Jan-2021	WESTERN STATES FIRE PROTECTION	656.79
691807	06-Jan-2021	WILSON ENGINEERS LLC	5,696.32
691808	06-Jan-2021	YELLOWSTONE LANDSCAPE	6,940.00
691809	06-Jan-2021	ALAZZAWI, MOHAMMED (R)	70.37
691810	06-Jan-2021	ALBARAGSEEDHI, SABAS (R)	15.18
691811	06-Jan-2021	BAHE, LUCINDA (R)	26.63
691812	06-Jan-2021	BROOKS, GREGORY (R)	36.36
691813	06-Jan-2021	BRUMAGE, HOLLY (R)	102.32
691814	06-Jan-2021	BURM, CAITLIN (R)	41.28
691815	06-Jan-2021	CARUSO, ANTHONY (R)	45.49
691816	06-Jan-2021	CASTRO, ALBERT (R)	75.35
691817	06-Jan-2021	CHIU, JUNG-PING (R)	1,000.00
691818	06-Jan-2021	COLBERT, RACHELLE (R)	65.23
691819	06-Jan-2021	CONWAY, NATALYA (R)	167.84
691820	06-Jan-2021	COPENHAVER, MATTHEW (R)	72.75
691821	06-Jan-2021	COSARBA, GEORGE (R)	30.35
691822	06-Jan-2021	DAVIS, AUSTIN (R)	50.75
691823	06-Jan-2021	DELLOSA, KRIS (R)	28.40
691824	06-Jan-2021	DIAZ, JOSE (R)	48.29
691825	06-Jan-2021	DUEL, JESSICA (R)	15.65
691826	06-Jan-2021	ENDERS, JEREMY (R)	68.98
691827	06-Jan-2021	FERNANDEZ, PATRICIA (R)	92.14
691828	06-Jan-2021	GATES, THERESA (R)	23.33
691829	06-Jan-2021	HORN, KATHY (R)	101.69
691830	06-Jan-2021	JASKEN, ALLIE (R)	81.55
691831	06-Jan-2021	KAJIHARA, KAZUKI (R)	38.94

691832	06-Jan-2021	KENNEY, GLENN (R)	31.17
691833	06-Jan-2021	KERKMAN, KODEY (R)	36.10
691834	06-Jan-2021	KILGORE, MEGAN (R)	30.46
691835	06-Jan-2021	MOUNT, ALICIA (R)	35.15
691836	06-Jan-2021	MUMMERT, JORDAN (R)	68.61
691837	06-Jan-2021	NGUYEN, HANG (R)	75.16
691838	06-Jan-2021	OHMAN, SHAUN (R)	14.31
691839	06-Jan-2021	PORTER, STEPHEN (R)	19.30
691840	06-Jan-2021	POUNDER, KYLE (R)	19.22
691841	06-Jan-2021	PRELLBERG, TRACEY (R)	39.12
691842	06-Jan-2021	PRESLASKI, CLINT (R)	87.25
691843	06-Jan-2021	PRESOTT, RENE (R)	90.96
691844	06-Jan-2021	PRIME MECHANICAL INC (R)	838.80
691845	06-Jan-2021	SANTIAGO, FELICIA (R)	34.28
691846	06-Jan-2021	SELBY, ERIKA (R)	17.55
691847	06-Jan-2021	SHEIKH, SHIRAZ (R)	70.73
691848	06-Jan-2021	SMART, CELIA (R)	131.20
691849	06-Jan-2021	STADLER, CHRISTY (R)	43.21
691850	06-Jan-2021	TANTILLO, ERICKA (R)	99.86
691851	06-Jan-2021	TUSCANY AT CHANDLER (R)	85.72
691852	06-Jan-2021	UNRUH, CHRISTOPHER (R)	12.84
691853	06-Jan-2021	VACANTI, ROCKE (R)	117.92
691854	06-Jan-2021	VELATEGUI, LORAINE (R)	491.54
691855	06-Jan-2021	WEBB, LARRY D (R)	648.00
691856	06-Jan-2021	WESTER, JAYMES (R)	26.58
691857	06-Jan-2021	WHEELER, CAMERON (R)	12.71
691858	06-Jan-2021	WHITE, BRIAN (R)	8.44
691859	06-Jan-2021	WINSTENE, JORDAN (R)	10.55
691860	06-Jan-2021	XU, SICHENG (R)	25.93
691861	06-Jan-2021	YANG, SUHUI (R)	15.05
691862	07-Jan-2021	ARIZONA PUBLIC SERVICE COMPANY	5,997.00
691863	07-Jan-2021	CITY OF GLENDALE (233-5)	8,030.18
691864	07-Jan-2021	CITY OF MESA	103.00
691865	07-Jan-2021	FLAGSTAFF HOUSING AUTHORITY	1,807.74
691866	07-Jan-2021	KING COUNTY HOUSING AUTHORITY	6,583.70
691867	07-Jan-2021	PICASO, LILLY	106.00
691868	07-Jan-2021	SALT RIVER PROJECT	3,641.00
691869	07-Jan-2021	SAN DIEGO HOUSING COMMISSION	2,494.74
691870	07-Jan-2021	SCOTT COUNTY CDA	756.74
691871	13-Jan-2021	AT&T MOBILITY	3,595.72
691872	13-Jan-2021	EARNHARDT	924.55
691873	13-Jan-2021	EARNHARDT CHANDLER CADILLAC INC	82.84
691874	13-Jan-2021	EARNHARDT CHEVROLET	214.51
691875	13-Jan-2021	EXERPLAY INC	1,256.38
691876	13-Jan-2021	FACTORY MOTOR PARTS COMPANY	250.84
691877	13-Jan-2021	FASTMED URGENT CARE	85.00
691878	13-Jan-2021	FIDELITY NATIONAL TITLE AGENCY INC	400.00
691879	13-Jan-2021	FLYERS ENERGY LLC	453.40
691880	13-Jan-2021	FORESITE DESIGN & CONSTRUCTION, INC	9,725.66
691881	13-Jan-2021	FREIGHTLINER OF ARIZONA LLC	404.27
691882	13-Jan-2021	GO AZ MOTORCYCLES	2,700.55
691883	13-Jan-2021	GRAINGER INC	2,118.44
691884	13-Jan-2021	GRAINGER INC	157.07
691885	13-Jan-2021	GUIDESOFT INC	475.56
691886	13-Jan-2021	HDR ENGINEERING INC	24,690.00

691887	13-Jan-2021	HEINFELD, MEECH & CO PC	12,897.50
691888	13-Jan-2021	HERDER & ASSOCIATES LLC	683.10
691889	13-Jan-2021	HINES INTERESTS LIMITED PARTNERSHIP (R)	45.00
691890	13-Jan-2021	HOWLER'S CHANDLER LLC (R)	750.00
691891	13-Jan-2021	IMAGE TREND, INC.	34,976.21
691892	13-Jan-2021	INGRAM LIBRARY SERVICES	1,270.08
691893	13-Jan-2021	ISO SERVICES, INC	25.00
691894	13-Jan-2021	JACK'S TIRE & OIL MANAGEMENT COMPANY, INC	3,947.33
691895	13-Jan-2021	JAMES J GENTILE PC	3,250.00
691896	13-Jan-2021	JENNINGS, HAUG & CUNNINGHAM, LLP	2,833.00
691897	13-Jan-2021	KARY ENVIRONMENTAL SERVICES INC	1,171.63
691898	13-Jan-2021	KONRAD K INSURANCE	1,300.00
691899	13-Jan-2021	KWALL LLC	3,500.00
691900	13-Jan-2021	LABORATORY CORPORATION OF AMERICA	200.00
691901	13-Jan-2021	LANGUAGE CONNECTION	190.00
691902	13-Jan-2021	LASER COMPONENTS DG	7,150.00
691903	13-Jan-2021	MARICOPA CO DEPT OF ANIMAL CARE & CONTROL	53,745.50
691904	13-Jan-2021	MARICOPA COUNTY DEPT OF	40,105.58
691905	13-Jan-2021	MARICOPA COUNTY TREASURER	14,686.84
691906	13-Jan-2021	MIDWEST TAPE	698.93
691907	13-Jan-2021	MOTOROLA	17,908.84
691909	13-Jan-2021	MUNICIPAL EMERGENCY SERVICES INC	8,334.36
691910	13-Jan-2021	NATIONAL LEAGUE OF CITIES	14,064.00
691911	13-Jan-2021	NORTHSTAR COMMUNICATIONS INC	14,495.00
691912	13-Jan-2021	NTT AMERICA SOLUTIONS, INC	138,392.98
691913	13-Jan-2021	OTTO LOGISTICS LLC	30,955.85
691914	13-Jan-2021	PAUL SAYLOR CREATIVE INC	1,573.75
691915	13-Jan-2021	PHOENIX CHILDRENS PEDIATRICS (R)	45.00
691916	13-Jan-2021	PIONEER ATHLETICS	1,736.59
691917	13-Jan-2021	PRECISION SWEEPING SERVICES, LLC	511.48
691918	13-Jan-2021	PURA VIDA CHIROPRACTIC PLLC	9,100.00
691919	13-Jan-2021	PHAM, THUY (R)	64.00
691920	13-Jan-2021	RDO EQUIPMENT COMPANY	152.43
691921	13-Jan-2021	REGAL FENCE LLC	4,994.74
691922	13-Jan-2021	REGIONAL PUBLIC TRANS AUTHORITY-VALLEY METRO	124,180.67
691923	13-Jan-2021	RICOH USA INC	4,695.02
691924	13-Jan-2021	SALT RIVER PROJECT	30,000.00
691925	13-Jan-2021	SIMPLEVIEW INC	5,000.00
691926	13-Jan-2021	SKECHERS USA RETAIL LLC (R)	45.00
691927	13-Jan-2021	SKYLINE WINDOW CLEANING	98.00
691928	13-Jan-2021	SOUND RESOLUTION SPECIALIST, LLC	4,118.74
691929	13-Jan-2021	SOUTHWESTERN SCALE COMPANY	760.01
691930	13-Jan-2021	SPORTS BLING & THINGS	825.79
691931	13-Jan-2021	SUEZ WTS USA, INC	4,781.70
691932	13-Jan-2021	SUN MECHANICAL CONTRACTING INC.	43,305.00
691933	13-Jan-2021	SUPERIOR SUPPLY INC	62,589.76
691934	13-Jan-2021	SURVEILLANCE SECURITY INC	1,494.00
691935	13-Jan-2021	T-MOBILE USA	4,313.53
691936	13-Jan-2021	T-MOBILE USA	4,329.30
691937	13-Jan-2021	T2 PEST SERVICES	32.00
691938	13-Jan-2021	TALIS CONSTRUCTION CORP	52,690.95
691939	13-Jan-2021	TECHNOLOGY INTEGRATORS LLC	2,114.00
691940	13-Jan-2021	TECHNOLOGY PROVIDERS INC	15,000.00
691941	13-Jan-2021	TELEVEDA SYSTEMS LLC	650.00
691942	13-Jan-2021	THATCHER COMPANY OF ARIZONA	23,262.00

691943	13-Jan-2021	TOWN OF GILBERT	18.41
691944	13-Jan-2021	TRAFFICADE SERVICE INC	1,887.84
691945	13-Jan-2021	TREELAND LIMITED PARTNERSHIP	14,850.00
691946	13-Jan-2021	TWELVE30 NEW SQUARE LLC (R)	500.00
691947	13-Jan-2021	UBM ENTERPRISE, INC	12,345.98
691948	13-Jan-2021	UNITED SITE SERVICES OF ARIZONA, INC.	807.97
691949	13-Jan-2021	USP TECHNOLOGIES	39,379.60
691950	13-Jan-2021	VEOLIA ES TECHNICAL SOLUTIONS	25,170.75
691951	13-Jan-2021	VINCON ENGINEERING CONSTRUCTION LLC	121,798.01
691952	13-Jan-2021	WATEREUSE ASSOCIATION	7,825.00
691953	13-Jan-2021	WATTERS INDUSTRIES, LLC	5,850.00
691954	13-Jan-2021	YELLOWSTONE LANDSCAPE	39,994.61
691955	13-Jan-2021	BARKKSDALE, KARLY (R)	82.44
691956	13-Jan-2021	BRYSON, TINA (R)	48.62
691957	13-Jan-2021	BURR RIDGE WOOD PRODUCTS INC (R)	155.65
691958	13-Jan-2021	CAMPBELL, KENNAN (R)	10.01
691959	13-Jan-2021	CASH, MARTIN (R)	23.23
691960	13-Jan-2021	CHESHIRRE, PENNI (R)	211.53
691961	13-Jan-2021	CLIFF-OLSEN, ROSE (R)	34.09
691962	13-Jan-2021	COOLEY, MICHAEL (R)	15.40
691963	13-Jan-2021	FILLMORE, YUTING (R)	81.39
691964	13-Jan-2021	FLEISCHER, OWEN (R)	57.49
691965	13-Jan-2021	GATES, THERESA (R)	23.33
691966	13-Jan-2021	GUARINO, CAIANNA (R)	56.16
691967	13-Jan-2021	HIRST, DALTON (R)	41.65
691968	13-Jan-2021	JOHNSON, KENNETH (R)	79.80
691969	13-Jan-2021	KHAMIS, REETA (R)	76.59
691970	13-Jan-2021	KOESTER, LYNN (R)	70.70
691971	13-Jan-2021	KURSE, DEEPTI (R)	57.75
691972	13-Jan-2021	LAURENT, ANDRE (R)	7.21
691973	13-Jan-2021	LAWRY, CASSANDRA (R)	58.24
691974	13-Jan-2021	LINGS, FLETCHER (R)	47.32
691975	13-Jan-2021	LITTLE, MARISA (R)	37.49
691976	13-Jan-2021	LONDONO DE CASTILLO, NOHORA (R)	30.42
691977	13-Jan-2021	MALLORY, RACHELLE (R)	61.20
691978	13-Jan-2021	MANNING, SARENA (R)	50.47
691979	13-Jan-2021	MEHNERT, JENNIFER (R)	11.80
691980	13-Jan-2021	NUCIOLA, OLIVIA (R)	37.97
691981	13-Jan-2021	PACHECO, RICHARD (R)	57.28
691982	13-Jan-2021	PEPPER, BETTY (R)	88.82
691983	13-Jan-2021	PURCELL, RACHEL (R)	17.03
691984	13-Jan-2021	RUSH EQUITIES (R)	365.55
691985	13-Jan-2021	SCOTT, JAMIE (R)	46.98
691986	13-Jan-2021	SHAW, ANDREW (R)	35.84
691987	13-Jan-2021	SIDDIQI, GUL (R)	98.11
691988	13-Jan-2021	TEELING, KEVIN (R)	35.49
691989	13-Jan-2021	TRYGSTAD, JOHN (R)	74.96
691990	13-Jan-2021	TRYON, THERESA (R)	90.59
691991	13-Jan-2021	VAN BRIESEN, NATHAN (R)	35.16
691992	13-Jan-2021	VAN, AUNDRIA (R)	68.98
691993	13-Jan-2021	WAGNER, ALFRED (R)	48.38
691994	13-Jan-2021	WEBB, WESLEY (R)	37.25
691995	13-Jan-2021	WHEELER, MARK (R)	9.28
691996	13-Jan-2021	WILLIAMS, MATTHEW (R)	68.98
691997	13-Jan-2021	ZHU, RONG (R)	44.61

691998	13-Jan-2021	25 SOUTH ARIZONA PLACE LLC	29,578.41
691999	13-Jan-2021	A MIND FOR DETAIL INC	4,797.51
692000	13-Jan-2021	AFLAC	137.67
692001	13-Jan-2021	ALLIED UNIVERSAL SECURITY SERVICES	833.20
692002	13-Jan-2021	APL ACCESS & SECURITY	70.00
692003	13-Jan-2021	AQUATIC CONSULTING & TESTING INC	4,710.00
692004	13-Jan-2021	ARIZONA ADVANCED THERAPY	10,000.00
692005	13-Jan-2021	ARIZONA ELEVATOR SOLUTIONS INC	142.66
692006	13-Jan-2021	ARIZONA PUBLIC SERVICE COMPANY	1,658.16
692007	13-Jan-2021	ARIZONA RUBBER CO	959.11
692008	13-Jan-2021	ARIZONA STATE TREASURER	162,414.49
692009	13-Jan-2021	ATLAS COPCO COMPRESSORS INC	6,150.00
692010	13-Jan-2021	AZ INTERNAL MEDICINE	1,950.00
692011	13-Jan-2021	BAKER & TAYLOR INC	3,131.50
692012	13-Jan-2021	BEST PLUMBING SPECIALTIES INC	59.66
692013	13-Jan-2021	BORDER STATES ELECTRIC SUPPLY	2,275.55
692014	13-Jan-2021	BOYS & GIRLS CLUB OF THE EAST VALLEY	3,587.83
692015	13-Jan-2021	BRIDGESTONE HOSEPOWER LLC	124.75
692016	13-Jan-2021	BROOKSIE'S	28.15
692017	13-Jan-2021	BUCKEYE CLEANING CENTER - PHOENIX	5,378.59
692018	13-Jan-2021	BUESING CORPORATION	90.00
692019	13-Jan-2021	CARBON ACTIVATED CORPORATION	32,923.94
692020	13-Jan-2021	CASSIUS CASTINGS LLC	18,370.63
692021	13-Jan-2021	CE WILSON CONSULTING, LLC	1,440.00
692022	13-Jan-2021	CHANDLER PAIN CLINIC	1,950.00
692023	13-Jan-2021	CITY OF MESA	12.26
692024	13-Jan-2021	CITY OF PHOENIX	1.49
692025	13-Jan-2021	CORVEL ENTERPRISE COMP INC	4,575.00
692026	13-Jan-2021	COSTCO	29.48
692027	13-Jan-2021	COUNTRY CLIPPER BARBER SHOP	5,200.00
692028	13-Jan-2021	COX COMMUNICATIONS INC	1,605.00
692029	13-Jan-2021	COX COMMUNICATIONS INC	3.14
692030	13-Jan-2021	CRAWFORD MECHANICAL SERVICES	626.00
692031	13-Jan-2021	CRONIN LAW GROUP, PLLC	1,735.50
692032	13-Jan-2021	CVENT INC	13,226.47
692034	13-Jan-2021	D L SALES CORP	14,350.44
692036	13-Jan-2021	DAY AUTO SUPPLY, INC	2,149.69
692037	13-Jan-2021	DCS CONTRACTING INC	290,027.36
692038	13-Jan-2021	DECA SOUTHWEST	4,852.06
692039	13-Jan-2021	DESERT TOX, LLC	652.65
692040	13-Jan-2021	DESTINY SOFTWARE, INC	16,575.00
692041	13-Jan-2021	DIBBLE CM, LLC	4,500.00
692042	13-Jan-2021	DPC ENTERPRISES LP	112,422.76
692043	13-Jan-2021	HERBAL NAILS & SPA AT CHANDLER VILLAGE	7,150.00
692044	13-Jan-2021	LEVEL 3 COMMUNICATIONS LLC	630.75
692045	13-Jan-2021	NEW DIRECTIONS BEHAVIORAL HEALTH LLC	3,032.40
692046	13-Jan-2021	SALT RIVER PROJECT	895.79
692047	13-Jan-2021	SOUTHWEST GAS CORP	36.34
692048	13-Jan-2021	WINDHOLZ, CAROLYN A (R)	90.00
692049	13-Jan-2021	HUERTA, JUANITA	160.00
692050	13-Jan-2021	OROS, ARSENIO	115.00
692051	13-Jan-2021	PARK TOWER CHANDLER, LLC	432.00
692052	13-Jan-2021	WORLD CLASS PROPERTIES	364.00
692053	13-Jan-2021	WREF	931.00
692054	20-Jan-2021	A MIND FOR DETAIL INC	650.00

692055	20-Jan-2021	ALLIED UNIVERSAL SECURITY SERVICES	4,395.13
692056	20-Jan-2021	ALLIED UNIVERSAL SECURITY SERVICES	833.20
692057	20-Jan-2021	AMERICAN INSPECTION AND TEST INC	6,122.00
692058	20-Jan-2021	APL ACCESS & SECURITY	510.00
692059	20-Jan-2021	ARIZONA MATERIALS LLC	3,150.94
692060	20-Jan-2021	ARIZONA POLICE PSYCHOLOGY PLLC	7,500.00
692061	20-Jan-2021	ARIZONA TRUCK & COACH LLC	8,124.93
692062	20-Jan-2021	ARIZONA WASTEWATER INDUSTRIES INC	807.72
692063	20-Jan-2021	BAKER & TAYLOR INC	327.45
692064	20-Jan-2021	BARRAZA INVESTIGATIONS (R)	15.00
692065	20-Jan-2021	BEBAK-MILLER, CHASE (R)	209.55
692066	20-Jan-2021	BOUND TREE MEDICAL LLC	6,374.96
692067	20-Jan-2021	BREYER LAW OFFICES (R)	5.00
692068	20-Jan-2021	CENTURY GRAPHICS INC	8,386.24
692069	20-Jan-2021	CHANDLER CHAMBER COMMUNITY FOUNDATION	652.80
692070	20-Jan-2021	CHILLER CITY CORP	1,584.00
692071	20-Jan-2021	CITY OF PHOENIX	48.75
692072	20-Jan-2021	CLEARWING SYSTEMS INTEGRATION LLC	148,302.00
692073	20-Jan-2021	CLEMENTE RANCH	256.32
692074	20-Jan-2021	COMPUTER AID, INC	7,170.54
692075	20-Jan-2021	CORE & MAIN LP	10,636.55
692076	20-Jan-2021	CRAWFORD MECHANICAL SERVICES	11,797.44
692077	20-Jan-2021	D L SALES CORP	114.02
692078	20-Jan-2021	DATA PROCESSING AIR CORPORATION	107.00
692079	20-Jan-2021	DAY AUTO SUPPLY, INC	350.23
692080	20-Jan-2021	DBA CONSTRUCTION	7,582.74
692081	20-Jan-2021	DECA SOUTHWEST	10,372.56
692082	20-Jan-2021	DEPARTMENT OF PUBLIC WORKS	9.90
692083	20-Jan-2021	DIBBLE CM, LLC	20,870.00
692084	20-Jan-2021	HARRIS, CA'LIA (R)	10.00
692085	20-Jan-2021	SCOTT'S TRAINING SYSTEMS	1,300.00
692086	20-Jan-2021	SPAY NEUTER HOTLINE	2,205.00
692087	20-Jan-2021	THOMPSON, FRANK	500.00
692088	20-Jan-2021	WALKER, CALVIN (R)	5.00
692089	20-Jan-2021	R AND D DESIGN	15,805.00
692090	20-Jan-2021	REPUBLIC SERVICES INC	6,052.50
692091	20-Jan-2021	RICOH USA INC	695.58
692092	20-Jan-2021	RUSH STREET PIZZA	1,044.87
692093	20-Jan-2021	SAENZ MAINTENANCE, LLC	9,750.00
692094	20-Jan-2021	SAFELITE AUTOGLASS CORP	477.72
692095	20-Jan-2021	SALT RIVER PROJECT	5,300.00
692096	20-Jan-2021	SCHNEIDER ELECTRIC SYSTEMS USA INC	27,623.00
692097	20-Jan-2021	SEALY MEDIA	1,500.00
692098	20-Jan-2021	SECRETARY OF STATE	43.00
692099	20-Jan-2021	SENERGY PETROLEUM, LLC	8,725.92
692100	20-Jan-2021	SEQUEL POLYGRAPH	4,255.00
692101	20-Jan-2021	SKAGGS PUBLIC SAFETY UNIFORMS & EQUIPMENT	1,897.83
692102	20-Jan-2021	SOFT HANDS PRESSURE WASHING	930.00
692103	20-Jan-2021	SOUTHERN TIRE MART, LLC	3,247.51
692104	20-Jan-2021	T2 PEST SERVICES	64.00
692105	20-Jan-2021	TEL TECH NETWORKS, INC.	21,567.00
692106	20-Jan-2021	THATCHER COMPANY OF ARIZONA	12,540.00
692107	20-Jan-2021	THE SUN GROVES HOMEOWNERS ASSOCIATION	9,968.00
692108	20-Jan-2021	TRAFFICADE SERVICE INC	477.02
692109	20-Jan-2021	UNITED ROTARY BRUSH CORPORATION	9,724.21

692110	20-Jan-2021	UNIVERSAL POLICE SUPPLY CO	4,148.23
692111	20-Jan-2021	VIGILANT SOLUTIONS INC	38,859.22
692112	20-Jan-2021	VIVID NAILS AND SPA LLC	5,200.00
692113	20-Jan-2021	W W WILLIAMS	22,200.73
692114	20-Jan-2021	WATER & ENERGY SYSTEMS TECHNOLOGY INC	2,306.75
692115	20-Jan-2021	WESTERN CRANE SERVICE	250.00
692116	20-Jan-2021	WESTERN STATES FIRE PROTECTION	1,865.00
692117	20-Jan-2021	WINDOM SECURITY STRATEGIES TODAY, LLC	8,445.00
692118	20-Jan-2021	WUNDERLICH-MALEC SYSTEMS, INC	2,520.00
692119	20-Jan-2021	ZENCITY TECHNOLOGIES US INC	25,920.00
692120	20-Jan-2021	BADKE, LYNDA (R)	51.48
692121	20-Jan-2021	BRAUER, CHEYENNE (R)	8.63
692122	20-Jan-2021	DIDONATO, JON (R)	15.55
692123	20-Jan-2021	DODD, SHANE (R)	36.83
692124	20-Jan-2021	EASY WEBCONTENT, INC	10,920.00
692125	20-Jan-2021	GAMINO, GERARDO (R)	90.59
692126	20-Jan-2021	GHIGLIA, JOHNNIE (R)	50.85
692127	20-Jan-2021	HAWES, CONET (R)	18.95
692128	20-Jan-2021	HENNING, COLLIN (R)	46.88
692129	20-Jan-2021	HUSS, CHERYL (R)	75.00
692130	20-Jan-2021	LI, LIANG (R)	178.30
692131	20-Jan-2021	MAZZEI, ANGELO (R)	50.09
692132	20-Jan-2021	OKRZESIK, MATT (R)	77.89
692133	20-Jan-2021	PRECIADO, NICHOLAS (R)	11.17
692134	20-Jan-2021	SIMS, TERESA (R)	26.97
692135	20-Jan-2021	SUEDMEYER, ERIC (R)	43.04
692136	20-Jan-2021	THAKKAR, HETAL (R)	44.39
692137	20-Jan-2021	VYAS, KARTIK (R)	41.14
692138	20-Jan-2021	WEBER, RENA (R)	56.82
692139	20-Jan-2021	AT&T MOBILITY	232.01
692140	20-Jan-2021	CAMPOS-BARRERA, GUILLERMINA (R)	5.00
692141	20-Jan-2021	EARNHARDT	2,703.78
692142	20-Jan-2021	EARNHARDT CHEVROLET	2,852.98
692143	20-Jan-2021	EAST VALLEY POLICE CHIEFS ASSOCIATION	300.00
692144	20-Jan-2021	ENJOI NAILS & SALON	2,600.00
692145	20-Jan-2021	ENNIS-FLINT, INC	408.60
692146	20-Jan-2021	FACTORY MOTOR PARTS COMPANY	1,314.99
692147	20-Jan-2021	FELIPE, MARIA	170.00
692148	20-Jan-2021	FERRELL-CARDENAS, KATY (R)	5.00
692149	20-Jan-2021	FIDELITY NATIONAL TITLE AGENCY INC	2,557.00
692150	20-Jan-2021	FIGOR, ERIC (R)	5.00
692151	20-Jan-2021	FLYERS ENERGY LLC	453.40
692152	20-Jan-2021	FORESITE DESIGN & CONSTRUCTION, INC	42,875.89
692153	20-Jan-2021	FRIEDL RICHARDSON TRIAL LAWYERS (R)	25.00
692154	20-Jan-2021	FSL HOME IMPROVEMENTS	654.87
692155	20-Jan-2021	GARNEY CONSTRUCTION	7,149.30
692156	20-Jan-2021	GRAINGER INC	8.67
692157	20-Jan-2021	GRAINGER INC	981.15
692158	20-Jan-2021	GROUNDS CONTROL LLC	94,668.00
692159	20-Jan-2021	I4 SEARCH GROUP LLC	7,800.00
692160	20-Jan-2021	J2 MEDIA LLC	7,007.00
692161	20-Jan-2021	JACK'S TIRE & OIL MANAGEMENT COMPANY, INC	1,088.00
692162	20-Jan-2021	JOKAKE CONSTRUCTION SERVICES INC	17,717.74
692163	20-Jan-2021	KANOPY LLC	1,849.00
692164	20-Jan-2021	LEA-ARCHITECTS, LLC	12,733.13

692165	20-Jan-2021	LITHO TECH, INC.	3,141.80
692166	20-Jan-2021	LOGAN SIMPSON DESIGN INC	2,735.50
692167	20-Jan-2021	LOGOCOMOTION	139.04
692168	20-Jan-2021	MARICOPA COUNTY	35,000.00
692169	20-Jan-2021	MARKS, LASHAY R	650.00
692170	20-Jan-2021	METERING SERVICES INC	6,490.00
692171	20-Jan-2021	MICHAEL WILSON KELLY-ARCHITECTS, LTD	8,370.00
692172	20-Jan-2021	MJ ENTERPRISE LLC	1,950.00
692173	20-Jan-2021	MUNICIPAL EMERGENCY SERVICES INC	6,735.04
692174	20-Jan-2021	NORTHSTAR COMMUNICATIONS INC	2,130.00
692175	20-Jan-2021	OASIS FOOT SPA LLC	1,300.00
692176	20-Jan-2021	OSUNA, MIGUEL	420.00
692177	20-Jan-2021	OTTO LOGISTICS LLC	28,307.15
692178	20-Jan-2021	PEACE OF MIND DENTAL PLLC	5,850.00
692179	20-Jan-2021	PRECISION CONCRETE CUTTING	2,211.94
692180	20-Jan-2021	PRECISION SWEEPING SERVICES, LLC	1,534.58
692181	20-Jan-2021	PREMIER ENGINEERING CORP	7,283.19
692182	22-Jan-2021	AGNEW, KC	94.94
692183	22-Jan-2021	CROKE, LANA	50.67
692184	22-Jan-2021	KLAPMEYER II, WILLIAM R	27.35
692185	27-Jan-2021	ALL-KOTE LINING, INCORPORATED	1,500.00
692186	27-Jan-2021	ALLIED UNIVERSAL SECURITY SERVICES	1,145.70
692187	27-Jan-2021	ALTERNATIVE MAINTENANCE SERVICE	500.00
692188	27-Jan-2021	AM SIGNAL, INC	317,946.88
692189	27-Jan-2021	APL ACCESS & SECURITY	478.50
692190	27-Jan-2021	APPLIED ART PRODUCTIONS	1,950.00
692191	27-Jan-2021	ARCADIS US INC	4,701.00
692192	27-Jan-2021	ARIZONA OFFICE TECHNOLOGIES	132.19
692193	27-Jan-2021	ARIZONA PUBLIC SERVICE COMPANY	1,543.39
692194	27-Jan-2021	ARIZONA RUBBER CO	542.61
692195	27-Jan-2021	ARIZONA TRUCK & COACH LLC	950.11
692196	27-Jan-2021	ARIZONA WASTEWATER INDUSTRIES INC	210.84
692197	27-Jan-2021	BAKER & TAYLOR INC	1,756.46
692198	27-Jan-2021	BINGHAM EQUIPMENT COMPANY	101.60
692199	27-Jan-2021	BPGRAPHICS INC	571.70
692200	27-Jan-2021	BRIDGESTONE HOSEPOWER LLC	198.83
692201	27-Jan-2021	BUESING CORPORATION	140.00
692202	27-Jan-2021	CENTURYLINK	16,723.43
692203	27-Jan-2021	CHANDLER CHAMBER COMMUNITY FOUNDATION	1,017.60
692204	27-Jan-2021	CHANDLER ROTARY CLUB	61.00
692205	27-Jan-2021	CITY OF PHOENIX	309,433.82
692206	27-Jan-2021	COFFMAN ASSOCIATES INC	26,535.40
692207	27-Jan-2021	COMMERCIAL POOL REPAIR	10,923.86
692208	27-Jan-2021	COMPUTER AID, INC	43,422.50
692209	27-Jan-2021	COSTCO	543.14
692210	27-Jan-2021	COX SANDOVAL LAW PLLC	3,900.00
692211	27-Jan-2021	DARANY ASSOCIATES	5,750.00
692212	27-Jan-2021	DAY AUTO SUPPLY, INC	2,290.62
692213	27-Jan-2021	DIBBLE & ASSOCIATES CONSULTING ENGINEERS, INC	14,453.00
692214	27-Jan-2021	DIBBLE CM, LLC	3,000.00
692215	27-Jan-2021	DPC ENTERPRISES LP	143,982.30
692216	27-Jan-2021	SOUTHWEST GAS CORP	9,209.82
692217	27-Jan-2021	SPAY NEUTER HOTLINE	875.00
692218	27-Jan-2021	BRANDLIN, SHIRLEY M	425.00
692219	27-Jan-2021	BURCH, ALEX	500.00

692220	27-Jan-2021	JARRETT, RON (R)	57.00
692221	27-Jan-2021	PACIFIC STAGING COMPANY, THE	47,825.69
692222	27-Jan-2021	R AND D DESIGN	675.00
692223	27-Jan-2021	RDO EQUIPMENT COMPANY	766.15
692224	27-Jan-2021	REYES & SONS LANDSCAPING LLC	65.10
692225	27-Jan-2021	RICOH USA INC	252.11
692226	27-Jan-2021	RKS PLUMBING & MECHANICAL INC	15,762.32
692227	27-Jan-2021	ROSENBAUER SOUTH DAKOTA LLC	235,969.13
692228	27-Jan-2021	SAFELITE AUTOGLASS CORP	287.39
692229	27-Jan-2021	SCI MOTORS LLC (R)	45.00
692230	27-Jan-2021	SECRETARY OF STATE	86.00
692231	27-Jan-2021	SENERGY PETROLEUM, LLC	4,613.70
692232	27-Jan-2021	SENTINEL TECHNOLOGIES	203,843.11
692233	27-Jan-2021	SNEDIGAR MARTIAL ARTS LLC (R)	15.00
692234	27-Jan-2021	SOUTHERN TIRE MART, LLC	2,256.39
692235	27-Jan-2021	SOUTHWEST UMPIRES ASSOCIATION	3,146.00
692236	27-Jan-2021	SUEZ WTS USA, INC	4,781.70
692237	27-Jan-2021	SUNRISE ENGINEERING INC	3,950.00
692238	27-Jan-2021	SURVEILLANCE SECURITY INC	1,920.00
692239	27-Jan-2021	T-MOBILE USA	3,355.53
692240	27-Jan-2021	T-MOBILE USA	3,825.96
692241	27-Jan-2021	T2 PEST SERVICES	64.00
692242	27-Jan-2021	TERACOM SERVICES, LLC (R)	45.00
692243	27-Jan-2021	THATCHER COMPANY OF ARIZONA	7,524.00
692244	27-Jan-2021	TICKETMASTER LLC	1,913.40
692245	27-Jan-2021	TRANE	780.00
692246	27-Jan-2021	UNITED ROTARY BRUSH CORPORATION	1,045.66
692247	27-Jan-2021	UNITED SITE SERVICES OF ARIZONA, INC.	184.37
692248	27-Jan-2021	US BANK	1,500.00
692249	27-Jan-2021	US BANK	300.00
692250	27-Jan-2021	VOIANCE LANGUAGE SERVICES LLC	433.96
692251	27-Jan-2021	WILSON ENGINEERS LLC	176,438.31
692252	27-Jan-2021	WORKGROUP CONNECTIONS INC	37,302.50
692253	27-Jan-2021	YELLOWSTONE LANDSCAPE	224.00
692254	27-Jan-2021	ADAMS, JAMES (R)	51.18
692255	27-Jan-2021	AYLE, REBEKAH (R)	30.00
692256	27-Jan-2021	BATINA, KORI (R)	43.61
692257	27-Jan-2021	BUTTERFIELD, BRANDON (R)	8.03
692258	27-Jan-2021	CONGINI, CHRIS (R)	94.43
692259	27-Jan-2021	DOWRICK, TRIANA (R)	46.46
692260	27-Jan-2021	EDUARDO R. CHAVEZ DBA MONTE VISTA RESID COMM (R)	704.61
692261	27-Jan-2021	ELIXAVIDE, SERGIO (R)	83.46
692262	27-Jan-2021	GALLEGOS, PARKER (R)	53.89
692263	27-Jan-2021	GAYTAN, LOURDES (R)	44.79
692264	27-Jan-2021	GOOKINS, CRYSTAL (R)	72.46
692265	27-Jan-2021	GUTIERREZ, ROBERT (R)	15.40
692266	27-Jan-2021	HENNING, CHRISTINA (R)	89.87
692267	27-Jan-2021	HODGE, WILLIAM (R)	3,523.65
692268	27-Jan-2021	JOE, GEOFFREY (R)	17.73
692269	27-Jan-2021	JOHNSTON, CHARLES (R)	56.48
692270	27-Jan-2021	JOSHI, PRIYANKA (R)	52.37
692271	27-Jan-2021	KANNAN, PREETHY (R)	28.88
692272	27-Jan-2021	KELTNER, JIM (R)	76.06
692273	27-Jan-2021	MAKINS, CHANTEL (R)	74.38
692274	27-Jan-2021	MARINELLO, JOAN (R)	99.86

692275	27-Jan-2021	MAYNARD, ROBIN (R)	30.33
692276	27-Jan-2021	MORENO, RENEE (R)	37.34
692277	27-Jan-2021	MULHERN, THOMAS (R)	592.33
692278	27-Jan-2021	NELSON, DAVID (R)	22.61
692279	27-Jan-2021	NEVAREZ, ANTONIO (R)	34.60
692280	27-Jan-2021	NGUYEN, TAM (R)	39.09
692281	27-Jan-2021	PIEERCE, ALANNA (R)	18.44
692282	27-Jan-2021	PRADT, DERICKA (R)	22.19
692283	27-Jan-2021	REMIGIO, LILIAN (R)	44.71
692284	27-Jan-2021	RUSH, KESHA (R)	6.35
692285	27-Jan-2021	SCHLIEPER, MARGIE (R)	183.91
692286	27-Jan-2021	SMITH, LARRY (R)	32.69
692287	27-Jan-2021	SMITH, THOMAS (R)	50.12
692288	27-Jan-2021	SPORE, KELLY (R)	33.87
692289	27-Jan-2021	THOMSON, ALEXANDER (R)	63.00
692290	27-Jan-2021	TRENCK, JOHN R (R)	254.33
692291	27-Jan-2021	VELASCO, GLADYS (R)	50.61
692292	27-Jan-2021	WINTERS, MICHAEL (R)	65.01
692293	27-Jan-2021	EARNHARDT	1,459.79
692294	27-Jan-2021	EARNHARDT CHANDLER CADILLAC INC	174.17
692295	27-Jan-2021	EARNHARDT CHEVROLET	1,306.63
692296	27-Jan-2021	EAST VALLEY DISASTER SERVICES, INC	3,795.00
692297	27-Jan-2021	ENG, LEUNG	320.00
692298	27-Jan-2021	ENVIRONMENTAL DRAIN & ODOR CONTROL SERVICES LLC	4,730.00
692299	27-Jan-2021	EQUIPMENT ONE LLC (R)	750.00
692300	27-Jan-2021	EXERPLAY INC	1,046.63
692301	27-Jan-2021	FACTORY MOTOR PARTS COMPANY	3,614.27
692302	27-Jan-2021	FADE DREAM BARBERSHOP LLC (R)	45.00
692303	27-Jan-2021	FERGUSON ENTERPRISES, LLC	74,769.62
692304	27-Jan-2021	FLIPZ LLC (R)	45.00
692305	27-Jan-2021	FLYERS ENERGY LLC	65,845.43
692306	27-Jan-2021	FRANKLIN STRIPING INC	3,067.00
692307	27-Jan-2021	GARNEY CONSTRUCTION	44,632.83
692308	27-Jan-2021	GILA RIVER INDIAN COMMUNITY	4,396.89
692309	27-Jan-2021	GILA RIVER INDIAN COMMUNITY UTILITY AUTHORITY	21,484.50
692310	27-Jan-2021	GINNIANN MABE INSURANCE AGENCY, INC	5,200.00
692311	27-Jan-2021	GLEASON, DAVID P (R)	1,107.00
692312	27-Jan-2021	GO AZ MOTORCYCLES	1,540.29
692313	27-Jan-2021	GRAINGER INC	3,244.82
692314	27-Jan-2021	GRAINGER INC	166.90
692315	27-Jan-2021	GRAY QUARTER, INC	555.00
692316	27-Jan-2021	GROUNDS CONTROL LLC	485.75
692317	27-Jan-2021	HAZEN AND SAWYER	462.00
692318	27-Jan-2021	HENNESY MECHANICAL SALES	12,987.00
692319	27-Jan-2021	HERDER & ASSOCIATES LLC	1,224.75
692320	27-Jan-2021	HOM, INC	1,080.50
692321	27-Jan-2021	INTERNATIONAL INSTITUTE OF MUNICIPAL	115.00
692322	27-Jan-2021	JACK'S TIRE & OIL MANAGEMENT COMPANY, INC	3,646.08
692323	27-Jan-2021	JR'S SHOES & BOOTS	266.06
692324	27-Jan-2021	KARY ENVIRONMENTAL SERVICES INC	1,633.00
692325	27-Jan-2021	LANGUAGE CONNECTION	570.00
692326	27-Jan-2021	LEVEL 3 COMMUNICATIONS LLC	2,481.65
692327	27-Jan-2021	LEVEL 3 COMMUNICATIONS LLC	2,368.57
692328	27-Jan-2021	LIM FAMILY MARTIAL ARTS	1,215.00
692329	27-Jan-2021	LOGOCOMOTION	1,482.64

692330	27-Jan-2021	LYFT INC	853.26
692331	27-Jan-2021	MIDWEST TAPE	243.30
692332	27-Jan-2021	MUNICIPAL EMERGENCY SERVICES INC	743.85
692333	27-Jan-2021	NORTEC SECURITY SYSTEMS INC (R)	15.00
692334	27-Jan-2021	NTT AMERICA SOLUTIONS, INC	34,433.87
692335	27-Jan-2021	OTTO LOGISTICS LLC	8,440.88
692336	27-Jan-2021	OUTDOOR SYSTEMS MANAGEMENT, LLC	16,955.51
692337	27-Jan-2021	OUTSIDE THE LINE	600.00
692338	27-Jan-2021	PAYNE HUEBSCH PLC	375.00
692339	27-Jan-2021	PITNEY BOWES INC	498.97
692340	27-Jan-2021	PONTIOUS, GENA AND PONTIOUS, SHELDON (R)	950.00
692341	27-Jan-2021	PRECISION SWEEPING SERVICES, LLC	175.00
692342	27-Jan-2021	PROJECT HOSTS INC	1,341.00
692343	27-Jan-2021	ROHTERT, JANNETTE C	1,260.00
692344	28-Jan-2021	1GPA	653.00
692345	28-Jan-2021	2013-1 IH BORROWER LP	3,553.00
692346	28-Jan-2021	2017-1 IH BORROWER LP	5,384.00
692347	28-Jan-2021	2017-2 IH BORROWER LP	502.00
692348	28-Jan-2021	2018-2 IH BORROWER LP	1,341.00
692349	28-Jan-2021	ABOUDI, MANHAL	148.00
692350	28-Jan-2021	AHMETOVIC, AMILA	1,600.00
692351	28-Jan-2021	APARTMENT HUNTERS	4,305.00
692352	28-Jan-2021	ARCHES AT HIDDEN CREEK	1,405.00
692353	28-Jan-2021	AZ REALTY PROPERTY HOLDINGS, LLC	7,595.00
692354	28-Jan-2021	BENTZ, CHRISTINA A	1,537.00
692355	28-Jan-2021	BREWER & STRATTON PROPERTY MANAGEMENT LLC	1,069.00
692356	28-Jan-2021	CARDENAS, ALBERTO	5,363.57
692357	28-Jan-2021	CH REALTY VII-TH MHC CHANDLER WISHING WELL, LLC	400.00
692358	28-Jan-2021	DENALI REAL ESTATE LLC	3,118.00
692359	28-Jan-2021	DESERT WIDE PROPERTIES INC.	475.00
692360	28-Jan-2021	DO, HUNG VAN	1,128.00
692361	28-Jan-2021	DWIGHT SCHRUTE HOLDINGS LLC	1,226.00
692362	28-Jan-2021	FARNSWORTH REALTY & MANAGEMENT	1,534.00
692363	28-Jan-2021	GANI, OSAMA S	1,346.00
692364	28-Jan-2021	GEDDAM, PRIYABRUNDA	1,252.00
692365	28-Jan-2021	GHOMRAWI, ABDALLAH	375.00
692366	28-Jan-2021	GREAT HOMES REALTY, LLC	950.00
692367	28-Jan-2021	GREENTREE PLACE APARTMENTS	1,687.00
692368	28-Jan-2021	HAMMACK, PAULA	1,377.00
692369	28-Jan-2021	HOMETREND PROPERTY MANAGEMENT & REAL ESTATE INC	961.00
692370	28-Jan-2021	HUERTA, JUANITA	160.00
692371	28-Jan-2021	J & B INVESTMENT	1,114.00
692372	28-Jan-2021	JONOVICH, KATINA	1,103.00
692373	28-Jan-2021	LIFEWELL BEHAVIORAL WELLNESS	506.00
692374	28-Jan-2021	LIM, NIMUL	619.00
692375	28-Jan-2021	LYNN, DANNY	900.00
692376	28-Jan-2021	NELSEN, DON E.	972.00
692377	28-Jan-2021	NOMA GROUP INC	1,488.00
692378	28-Jan-2021	NXRT FAIRWAYS LLC	5,392.00
692379	28-Jan-2021	ON Q PROPERTY MANAGEMENT	1,706.00
692380	28-Jan-2021	ONE WAY HOMES, LLC	1,309.00
692381	28-Jan-2021	OROS, ARSENIO	65.00
692382	28-Jan-2021	PARK TOWER CHANDLER, LLC	3,536.00
692383	28-Jan-2021	PARKER, DIXIE L.	530.00
692384	28-Jan-2021	PARKER, DIXIE L.	592.00

692385	28-Jan-2021	PROPERTY PLUS USA	677.00
692386	28-Jan-2021	PRS PROPERTY MANAGEMENT	1,352.00
692387	28-Jan-2021	REALTY EXECUTIVES, AN ARIZONA CORP	1,421.00
692388	28-Jan-2021	ROBERTS, CAROL YVONNE	881.00
692389	28-Jan-2021	ROBSON APARTMENTS LLC	467.00
692390	28-Jan-2021	SAISSAN, JOHN	626.00
692391	28-Jan-2021	SANCHEZ, JEANETTE	34,293.33
692392	28-Jan-2021	SCREMIN FAMILY LTD	861.00
692393	28-Jan-2021	SECURED EQUITIES	1,004.00
692394	28-Jan-2021	STAGECOACH PROPERTIES LLC	986.00
692395	28-Jan-2021	SUN, HONGXLA	1,650.00
692396	28-Jan-2021	SUNDIAL REAL ESTATE	505.00
692397	28-Jan-2021	SUNDIAL REAL ESTATE LC	794.00
692398	28-Jan-2021	SUNDIAL REAL ESTATE LC	755.00
692399	28-Jan-2021	TEAM SIZZLE	1,100.00
692400	28-Jan-2021	THE HOUSING PROFESSIONALS LLC	2,452.00
692401	28-Jan-2021	THR PHOENIX LP	3,090.00
692402	28-Jan-2021	THR PROPERTY BORROWER LP	2,595.00
692403	28-Jan-2021	TRADELANDS LLC	1,478.00
692404	28-Jan-2021	TRAN, TOM B	1,011.00
692405	28-Jan-2021	VISTA ASSET COMPANY LLC	1,169.00
692406	28-Jan-2021	VISTA STAR COMPANY, LLC	5,371.00
692407	28-Jan-2021	WALTON ENTERPRISES LLC	573.00
692408	28-Jan-2021	WORLD CLASS PROPERTIES	364.00
692409	28-Jan-2021	WREF	12,628.00
692410	28-Jan-2021	WREF GREENTREE PLACE, LP	8,643.00
692411	28-Jan-2021	ZHENG, SHAO MEI	1,400.00
692412	28-Jan-2021	COKING, CARRIE (R)	1,500.00
692413	28-Jan-2021	KASHMIRA, CHOKSHI (R)	934.37
692414	28-Jan-2021	MAUCK, RANDALL T	140.00
692415	28-Jan-2021	RITTER DEVEOPMENT (R)	13,136.11
692416	29-Jan-2021	SECRETARY OF STATE	43.00
692417	29-Jan-2021	SECRETARY OF STATE	43.00
692418	03-Feb-2021	5 WORDS MEDIA	9,999.60
692419	03-Feb-2021	A MIND FOR DETAIL INC	2,481.26
692420	03-Feb-2021	AARDVARK	14,654.50
692421	03-Feb-2021	ABRACADABRA PRODUCTIONS INC	400.00
692422	03-Feb-2021	ABRACADABRA PRODUCTIONS INC	800.00
692423	03-Feb-2021	ADVANCED STRUCTURAL ENGINEERING, INC	1,842.00
692424	03-Feb-2021	ALLIANCE CONTRACTING LLC	10,000.00
692425	03-Feb-2021	ALLIED UNIVERSAL SECURITY SERVICES	1,624.74
692426	03-Feb-2021	ALLIED UNIVERSAL SECURITY SERVICES	3,436.95
692427	03-Feb-2021	AM SIGNAL, INC	2,704.48
692428	03-Feb-2021	ARIZONA ATTORNEY GENERAL	3,740.78
692429	03-Feb-2021	ARIZONA BOILER INSPECTORS	1,950.00
692430	03-Feb-2021	ARIZONA DEPT OF TRANSPORTATION	5,000.00
692431	03-Feb-2021	ARIZONA FACILITY SERVICES	4,936.00
692432	03-Feb-2021	ARIZONA MATERIALS LLC	1,696.93
692433	03-Feb-2021	ARIZONA PACIFIIC PULP & PAPER, INC	413.37
692434	03-Feb-2021	ARIZONA POWER AUTHORITY	6,140.67
692435	03-Feb-2021	ARIZONA PUBLIC SERVICE COMPANY	13,648.00
692436	03-Feb-2021	ARIZONA STATE TREASURER	182,469.07
692437	03-Feb-2021	BANNER EMPLOYER SERVICES, LLC	10,350.00
692438	03-Feb-2021	BINGHAM EQUIPMENT COMPANY	41.98
692439	03-Feb-2021	BROOKSIE'S	72.95

692440	03-Feb-2021	BUESING CORPORATION	235.00
692441	03-Feb-2021	CARAHSOFT TECHNOLOGY CORP	37,577.05
692442	03-Feb-2021	CARL J. PEARCE, INC - KITCHEN NUTRITION SYSTEMS	1,950.00
692443	03-Feb-2021	CENTURYLINK	222.92
692444	03-Feb-2021	CERNER CORPORATION	11,082.12
692445	03-Feb-2021	CHANDLER CHAMBER COMMUNITY FOUNDATION	960.00
692446	03-Feb-2021	CHEYENNE MFG. INC	6,552.00
692447	03-Feb-2021	CITY OF PHOENIX	706.02
692448	03-Feb-2021	CORE & MAIN LP	14,468.94
692449	03-Feb-2021	CORE X SYSTEM LLC	5,808.00
692450	03-Feb-2021	CRAWFORD MECHANICAL SERVICES	2,560.55
692451	03-Feb-2021	CRISTANDO HOUSE, INC.	150.00
692452	03-Feb-2021	DAY AUTO SUPPLY, INC	150.30
692453	03-Feb-2021	DECA SOUTHWEST	150.00
692454	03-Feb-2021	DEPARTMENT OF PUBLIC WORKS	9.90
692455	03-Feb-2021	DIBBLE & ASSOCIATES CONSULTING ENGINEERS, INC	75,509.01
692456	03-Feb-2021	SALT RIVER PROJECT	32.68
692457	03-Feb-2021	SOUTHWEST GAS CORP	17.17
692458	03-Feb-2021	EMPOWER EDUCATIONAL CONSULTING	10,000.00
692459	03-Feb-2021	ENERGYCAP INC	997.16
692460	03-Feb-2021	EUROFINS TESTAMERICA	1,884.00
692461	03-Feb-2021	EXCERGY LLC	41,673.05
692462	03-Feb-2021	EXERPLAY INC	998.16
692463	03-Feb-2021	FIDELITY NATIONAL TITLE AGENCY INC	1,114.00
692464	03-Feb-2021	FIT SOCIETY AZ, LLC	7,150.00
692465	03-Feb-2021	FLO HOT YOGA & CYCLE LLC	3,250.00
692466	03-Feb-2021	FLYERS ENERGY LLC	18,021.45
692467	03-Feb-2021	GRAINGER INC	1,993.29
692468	03-Feb-2021	GRAINGER INC	906.18
692469	03-Feb-2021	GROUNDS CONTROL LLC	336.33
692470	03-Feb-2021	GUIDESOFT INC	951.12
692471	03-Feb-2021	HACH COMPANY	6,913.00
692472	03-Feb-2021	HENNESY MECHANICAL SALES	17,703.00
692473	03-Feb-2021	INTERWEST SAFETY SUPPLY LLC	4,661.11
692474	03-Feb-2021	IWATER INC	22,000.00
692475	03-Feb-2021	J2 MEDIA LLC	4,150.30
692476	03-Feb-2021	KS STATEBANK	372.78
692477	03-Feb-2021	KWALL LLC	3,500.00
692478	03-Feb-2021	LA RISTRA II	10,000.00
692479	03-Feb-2021	LEVEL 3 COMMUNICATIONS LLC	8,143.35
692480	03-Feb-2021	LIFELONG FITNESS BY KATHI	1,700.00
692481	03-Feb-2021	LIGHTING UNLIMITED INC	603.88
692482	03-Feb-2021	LINDSAY ENGINEERING INC	813.17
692483	03-Feb-2021	LITHO TECH, INC.	6,903.72
692484	03-Feb-2021	LITTLER MENDELSON PC	1,596.00
692485	03-Feb-2021	LOGOCOMOTION	381.64
692486	03-Feb-2021	MARICOPA COUNTY	2,100.00
692487	03-Feb-2021	MARICOPA COUNTY TREASURER	17,915.98
692488	03-Feb-2021	MARICOPA COUNTY TREASURER	125.00
692489	03-Feb-2021	MC MC IME LLC	4,844.00
692490	03-Feb-2021	MELISSA DATA CORPORATION	2,420.00
692491	03-Feb-2021	METERING SERVICES INC	6,309.07
692492	03-Feb-2021	MIDWEST TAPE	530.02
692493	03-Feb-2021	MUNICIPAL EMERGENCY SERVICES INC	1,022.73
692494	03-Feb-2021	NATIONAL LEAGUE OF CITIES	100.00

692495	03-Feb-2021	NFRA INC	30,784.91
692496	03-Feb-2021	NINA STAKE CO INC	214.05
692497	03-Feb-2021	NINYO & MOORE	11,308.22
692498	03-Feb-2021	OTTO LOGISTICS LLC	18,513.70
692499	03-Feb-2021	PB&J CREATVE LLC	1,260.00
692500	03-Feb-2021	PEDIATRIC DENTAL SPECIALISTS, PC	3,250.00
692501	03-Feb-2021	PRAVICI LLC	10,000.00
692502	03-Feb-2021	PRECISION SWEEPING SERVICES, LLC	635.65
692503	03-Feb-2021	PROFESSIONAL PIPING SYSTEMS, LLC	9,425.00
692504	03-Feb-2021	LIANG, YUJING	46.80
692505	03-Feb-2021	NESTLE PURE LIFE	2,654.19
692506	03-Feb-2021	REGIONAL PUBLIC TRANS AUTHORITY-VALLEY METRO	124,180.67
692507	03-Feb-2021	REYES & SONS LANDSCAPING LLC	75,054.80
692508	03-Feb-2021	REYES & SONS LANDSCAPING LLC	3,855.00
692509	03-Feb-2021	RICOH USA INC	94.41
692510	03-Feb-2021	SALT RIVER PROJECT	15,911.08
692511	03-Feb-2021	SENERGY PETROLEUM, LLC	4,932.10
692512	03-Feb-2021	SIONICS WEAPON SYSTEMS	16,739.26
692513	03-Feb-2021	SKYLINE WINDOW CLEANING	390.00
692514	03-Feb-2021	SOFT HANDS PRESSURE WASHING	930.00
692515	03-Feb-2021	STATE OF ARIZONA	8,500.70
692516	03-Feb-2021	STEPPING STONES PEDIATRIC THERAPY, LLC	10,000.00
692517	03-Feb-2021	T2 PEST SERVICES	32.00
692518	03-Feb-2021	THATCHER COMPANY OF ARIZONA	7,524.00
692519	03-Feb-2021	THE SPRINGS ASSOCIATION	1,250.00
692520	03-Feb-2021	THOMAS, ROBERT (R)	50.00
692521	03-Feb-2021	TRIPLEX TRAINING (R)	45.93
692522	03-Feb-2021	VENETIAN OUTDOORS, LLC	3,040.80
692523	03-Feb-2021	VINCON ENGINEERING CONSTRUCTION LLC	106,622.40
692524	03-Feb-2021	WESTERN STATES FIRE PROTECTION	3,781.94
692525	03-Feb-2021	WHISPERING HEIGHTS HOA (R)	220.32
692526	03-Feb-2021	YELLOWSTONE LANDSCAPE	28,538.06
692527	03-Feb-2021	BENJAMIN, ANDY (R)	14.36
692528	03-Feb-2021	BENTLEY, DAVID (R)	15.38
692529	03-Feb-2021	CHANG, CHISHUN (R)	69.47
692530	03-Feb-2021	CHOULES, BILL-MELANIE (R)	8,185.65
692531	03-Feb-2021	DA-RO INVESTMENTS (R)	947.30
692532	03-Feb-2021	FECHTER, CANDY (R)	59.38
692533	03-Feb-2021	GULATI, NITIN (R)	26.63
692534	03-Feb-2021	HAMPTON, STACY & MICHAEL (R)	40.01
692535	03-Feb-2021	JOHNSON, BOYD (R)	68.98
692536	03-Feb-2021	KARI BRADLEY & ASSOCIATES LLC (R)	50.21
692537	03-Feb-2021	KEFAYATAI, STAN (R)	73.68
692538	03-Feb-2021	KIEU, CUONG (R)	35.21
692539	03-Feb-2021	LEONE, JENNIFER (R)	48.37
692540	03-Feb-2021	MCCLUSKEY, THELMA (R)	33.23
692541	03-Feb-2021	MEINDERS, EMILY (R)	87.13
692542	03-Feb-2021	NGUYEN, HIEU (R)	56.16
692543	03-Feb-2021	NOYES, ERIC (R)	30.23
692544	03-Feb-2021	PARAL, TOM (R)	43.39
692545	03-Feb-2021	PARAMASIVAM, KUMARAGURU (R)	92.14
692546	03-Feb-2021	SCHIFF, LAVONNE (R)	37.25
692547	03-Feb-2021	SCHNEIDER, STEVEN (R)	23.17
692548	03-Feb-2021	STYER, ADAM (R)	40.36
692549	03-Feb-2021	SWEEDY, GISSELL (R)	74.04

692550	03-Feb-2021	SWINSON, KATHLEEN (R)	17.73
692551	03-Feb-2021	TOA, SAUMALEULA (R)	104.03
692552	03-Feb-2021	TOWNSEND, ANDRIA (R)	59.21
692553	03-Feb-2021	ARMSTRONG, CLARENCE JR	300.00
692554	03-Feb-2021	DAMP, BRENDA S	29.00
692555	03-Feb-2021	FARROW, ADAM D	228.00
692556	03-Feb-2021	SIECZKOWSKI, JASON M	66.97
692557	04-Feb-2021	ARIZONA STATE TREASURER	18,050.00
692558	04-Feb-2021	MORRIS, MICHAEL G	550.00
692559	05-Feb-2021	ARIZONA PUBLIC SERVICE COMPANY	5,874.00
692560	05-Feb-2021	CITY OF GLENDALE (233-5)	6,597.44
692561	05-Feb-2021	CITY OF MESA	103.00
692562	05-Feb-2021	CITY PROPERTY MANAGEMENT COMPANY	575.00
692563	05-Feb-2021	HOUSING AUTHORITY OF JOLIET	5,661.48
692564	05-Feb-2021	KING COUNTY HOUSING AUTHORITY	6,583.70
692565	05-Feb-2021	RUVOLO, CHARLES OR LAURIE	1,147.00
692566	05-Feb-2021	SALT RIVER PROJECT	3,675.00
692567	05-Feb-2021	SAN DIEGO HOUSING COMMISSION	2,494.74
692568	05-Feb-2021	SCOTT COUNTY CDA	756.74
692569	05-Feb-2021	VISTA ASSET COMPANY LLC	2,190.00
692570	10-Feb-2021	AARDVARK	2,697.71
692571	10-Feb-2021	ADAPTIVE ARCHITECTS, INC	2,020.00
692572	10-Feb-2021	ADVANCED THERAPY SOLUTIONS LLC	10,000.00
692573	10-Feb-2021	AFLAC	91.78
692574	10-Feb-2021	AIRPARK SIGNS & GRAPHICS	37.94
692575	10-Feb-2021	ALLEN INSTRUMENTS & SUPPLIES	1,021.50
692576	10-Feb-2021	AM SIGNAL, INC	10,431.21
692577	10-Feb-2021	ARIZONA MATERIALS LLC	1,504.30
692578	10-Feb-2021	ARIZONA NAHRO	45.00
692579	10-Feb-2021	ARIZONA NAHRO	45.00
692580	10-Feb-2021	ARIZONA POLICE PSYCHOLOGY PLLC	95.00
692581	10-Feb-2021	ARIZONA PUBLIC SERVICE COMPANY	1,985.95
692582	10-Feb-2021	ARIZONA RUBBER CO	225.03
692583	10-Feb-2021	ARIZONA STATE UROLOGICAL INSTITUTE	10,000.00
692584	10-Feb-2021	ARIZONA TRUCK & COACH LLC	879.53
692585	10-Feb-2021	ARIZONA WASTEWATER INDUSTRIES INC	749.34
692586	10-Feb-2021	AT & T MOBILITY (R)	585.00
692587	10-Feb-2021	AUTO SAFETY HOUSE	205.96
692589	10-Feb-2021	BAKER & TAYLOR INC	16,269.65
692590	10-Feb-2021	BIG O TIRES (R)	85.00
692591	10-Feb-2021	BINGHAM EQUIPMENT COMPANY	389.25
692592	10-Feb-2021	BK SQUARED LLC	1,000.00
692593	10-Feb-2021	BLX GROUP LLC	2,800.00
692594	10-Feb-2021	BOOT BARN	128.87
692595	10-Feb-2021	BOUND TREE MEDICAL LLC	2,140.92
692596	10-Feb-2021	BUILDERS GUILD INC	110,538.81
692597	10-Feb-2021	CARE INC	105.00
692598	10-Feb-2021	CASEY, THOMAS (R)	25.00
692599	10-Feb-2021	CERNER CORPORATION	12,356.34
692600	10-Feb-2021	CHANDLER CARE CENTER CHILDREN'S MEDICAL AND DENTAL CLINIC, INC	30,250.00
692601	10-Feb-2021	CHANDLER CHAMBER COMMUNITY FOUNDATION	1,420.80
692602	10-Feb-2021	CHANDLER DENTAL PARTNERS (R)	85.00
692603	10-Feb-2021	CHANDLER/GILBERT YMCA	4,712.50
692604	10-Feb-2021	CHILLER CITY CORP	1,562.00
692605	10-Feb-2021	CITY OF PHOENIX	77,920.54

692606	10-Feb-2021	CLARITY POOLS	10,000.00
692607	10-Feb-2021	CLIMATE PRO (R)	75.00
692608	10-Feb-2021	CLOTHES MENTOR (R)	25.00
692609	10-Feb-2021	COFFMAN ASSOCIATES INC	12,688.00
692610	10-Feb-2021	COMMUNITY HEALTH CHARITIES	75.00
692611	10-Feb-2021	CORE & MAIN LP	6,692.41
692612	10-Feb-2021	CRONIN LAW GROUP, PLLC	390.00
692613	10-Feb-2021	CRONIN LAW GROUP, PLLC	7,293.00
692614	10-Feb-2021	DATA PROCESSING AIR CORPORATION	107.00
692616	10-Feb-2021	DAY AUTO SUPPLY, INC	3,569.69
692617	10-Feb-2021	DCS CONTRACTING INC	517,516.31
692618	10-Feb-2021	DECA SOUTHWEST	2,673.40
692619	10-Feb-2021	DEVMONT DENTAL, LLC (R)	235.00
692620	10-Feb-2021	DIBBLE CM, LLC	34,370.00
692621	10-Feb-2021	DIETERICH ARCHITECTURAL GROUP INC	900.00
692622	10-Feb-2021	DIGNITY HEALTH FOUNDATION	11,758.61
692623	10-Feb-2021	DIGNITY HEALTH FOUNDATION	230,522.89
692624	10-Feb-2021	DIGNITY HEALTH FOUNDATION	42,462.50
692625	10-Feb-2021	DPC ENTERPRISES LP	92,055.09
692626	10-Feb-2021	DYMOND, ANTHONY (R)	50.00
692627	10-Feb-2021	NAUMANN, DAVID RUSSELL	950.00
692628	10-Feb-2021	OPTUM	3,636.52
692629	10-Feb-2021	SALT RIVER PROJECT	1,175.31
692630	10-Feb-2021	CHANDLER POLICE CHARITIES	25.00
692631	10-Feb-2021	EARNHARDT	192.41
692632	10-Feb-2021	EARNHARDT CHANDLER CADILLAC INC	171.06
692633	10-Feb-2021	EARNHARDT CHEVROLET	769.92
692634	10-Feb-2021	EAST VALLEY SCHOOL OF MUSIC, INC	10,000.00
692635	10-Feb-2021	EBSCO PUBLISHING	18,860.05
692636	10-Feb-2021	EMPIRE SOUTHWEST	185.48
692637	10-Feb-2021	EN POINTE TECHNOLOGIES SALES (R)	21,790.86
692638	10-Feb-2021	FACTORY MOTOR PARTS COMPANY	326.66
692639	10-Feb-2021	FAMILY CHRISTIAN COUNSELING CENTER OF PHOENIX	3,900.00
692640	10-Feb-2021	FIDELITY NATIONAL TITLE AGENCY INC	151.57
692641	10-Feb-2021	FLEETPRIDE INC	1,880.86
692642	10-Feb-2021	FORESITE DESIGN & CONSTRUCTION, INC	29,601.15
692643	10-Feb-2021	FREIGHTLINER OF ARIZONA LLC	77.61
692644	10-Feb-2021	FRIENDS OF THE CHANDLER LIBRARY	70.00
692645	10-Feb-2021	GAIMCO	5,200.00
692646	10-Feb-2021	GARYS AUTO REPAIR	7,800.00
692647	10-Feb-2021	GILA RIVER INDIAN COMMUNITY	18,217.73
692648	10-Feb-2021	GRAINGER INC	429.48
692649	10-Feb-2021	GROUNDS CONTROL LLC	89,799.62
692650	10-Feb-2021	GUIDESOFT INC	475.56
692651	10-Feb-2021	HANCOCK HOMES	1,250.52
692652	10-Feb-2021	HOLIDAYGOO	1,501.50
692653	10-Feb-2021	HOM, INC	972.45
692654	10-Feb-2021	HOT PIZZAS, LLC (R)	85.00
692655	10-Feb-2021	HOT SHOT DELIVERY, INC	16.00
692656	10-Feb-2021	INDOOR GOLF DESIGN, LLC	3,900.00
692657	10-Feb-2021	INTERSTATE BATTERY SYSTEM OF PHX	1,159.44
692658	10-Feb-2021	ISO SERVICES, INC	455.68
692659	10-Feb-2021	JUPITER COMMUNICATIONS (R)	85.00
692660	10-Feb-2021	KANOPY LLC	2,228.00
692661	10-Feb-2021	LITHO TECH, INC.	4,917.42

692662	10-Feb-2021	LOGAN SIMPSON DESIGN INC	475.74
692663	10-Feb-2021	LONGORIA, DORA (R)	25.00
692664	10-Feb-2021	MARACAY 91, LLC (R)	274,699.00
692665	10-Feb-2021	MARICOPA COUNTY	2,100.00
692666	10-Feb-2021	MARICOPA COUNTY ATTORNEY	6,554.54
692667	10-Feb-2021	MARICOPA COUNTY DEPT OF	45,754.11
692668	10-Feb-2021	MESA UNITED WAY, INC.	10,000.00
692669	10-Feb-2021	MICROCHIP TECHNOLOGY INC (R)	18,235.50
692670	10-Feb-2021	MIDWEST FOOD BANK, NFP	9,887.50
692671	10-Feb-2021	MIDWEST TAPE	304.36
692672	10-Feb-2021	MILLAR, PAUL (R)	25.00
692673	10-Feb-2021	MOTOROLA	69,511.25
692674	10-Feb-2021	MUNICIPAL EMERGENCY SERVICES INC	664.49
692675	10-Feb-2021	NORTHERN ARIZONA CENTER FOR ENTREPRENEURSHIP AND TECHNOLOGY	20,833.33
692676	10-Feb-2021	NORTHSTAR COMMUNICATIONS INC	32,650.00
692677	10-Feb-2021	NOTMYKID, INC.	7,500.00
692678	10-Feb-2021	OTTO LOGISTICS LLC	42,071.96
692679	10-Feb-2021	PAIGE, GEORGE (R)	15.00
692680	10-Feb-2021	PATEL, HETAL (R)	15.00
692681	10-Feb-2021	PERFORMANCE PLUS DISTRIBUTING INC	6,633.73
692682	10-Feb-2021	PHOENIX ER & MEDICAL HOSPITAL (R)	85.00
692683	10-Feb-2021	PINON FAMILY MEDICINE	100.00
692684	10-Feb-2021	PRECISION SWEEPING SERVICES, LLC	570.83
692685	10-Feb-2021	PURE AQUA, INC	3,345.00
692686	10-Feb-2021	ARIZONA LIVER HEALTH	10,000.00
692687	10-Feb-2021	QUARANTA, JOSEPH (R)	15.00
692688	10-Feb-2021	RELAX SPA	1,300.00
692689	10-Feb-2021	REYES & SONS LANDSCAPING LLC	27,905.00
692690	10-Feb-2021	RICOH USA INC	4,597.29
692691	10-Feb-2021	ROCKET COURIER LLC	25.00
692692	10-Feb-2021	SAFELITE AUTOGLASS CORP	1,456.75
692693	10-Feb-2021	SALVATION ARMY	19,750.00
692694	10-Feb-2021	SAN PALACIO (R)	20.19
692695	10-Feb-2021	SEALY MEDIA	1,437.50
692696	10-Feb-2021	SENERGY PETROLEUM, LLC	5,441.86
692698	10-Feb-2021	SKAGGS PUBLIC SAFETY UNIFORMS & EQUIPMENT	10,275.43
692699	10-Feb-2021	SKYLINE WINDOW CLEANING	88.00
692700	10-Feb-2021	SOUTHERN TIRE MART, LLC	986.18
692701	10-Feb-2021	SOUTHWEST UMPIRES ASSOCIATION	2,574.00
692702	10-Feb-2021	STARK, ALEXANDRA (R)	25.00
692703	10-Feb-2021	STROMFORS LAW OFFICE, PC	2,600.00
692704	10-Feb-2021	SUEZ WTS USA, INC	4,781.70
692705	10-Feb-2021	SUNBELT RENTALS	5,236.69
692706	10-Feb-2021	SUNLINE CONTRACTING LLC	2,690.00
692707	10-Feb-2021	T2 PEST SERVICES	32.00
692708	10-Feb-2021	TAYLOR MORRISON, INC (R)	139,284.00
692709	10-Feb-2021	TELEVEDA SYSTEMS LLC	5,650.00
692710	10-Feb-2021	THATCHER COMPANY OF ARIZONA	10,128.00
692711	10-Feb-2021	TRAFFICADE SERVICE INC	1,349.43
692712	10-Feb-2021	TUCKER, THOMAS (R)	682.74
692713	10-Feb-2021	UBM ENTERPRISE, INC	257.70
692714	10-Feb-2021	UNITED SITE SERVICES OF ARIZONA, INC.	623.60
692715	10-Feb-2021	USP TECHNOLOGIES	8,528.00
692716	10-Feb-2021	WALMART INC (R)	85.00
692717	10-Feb-2021	WARNER, JEREME (R)	100.00

692718	10-Feb-2021	WESTERN STATES FIRE PROTECTION	510.00
692719	10-Feb-2021	YELLOWSTONE LANDSCAPE	19,684.23
692720	10-Feb-2021	ACHEN GARDNER CONSTRUCTION, LLC (R)	1,328.78
692721	10-Feb-2021	AGUAYO, GABRIELLE (R)	43.39
692722	10-Feb-2021	ALAWADI, MOHAMMED (R)	39.36
692723	10-Feb-2021	ANDREW, CINDY (R)	21.48
692724	10-Feb-2021	ARAVAMUDHAN, BHARATHAN (R)	59.74
692725	10-Feb-2021	ARORA, SUMIT (R)	94.13
692726	10-Feb-2021	AVALOS, MIGUEL (R)	81.39
692727	10-Feb-2021	BAILEY, CHRIS (R)	39.35
692728	10-Feb-2021	BOAKA, RAMESH (R)	61.25
692729	10-Feb-2021	BOWLER, AARON (R)	22.81
692730	10-Feb-2021	CATERINO, JOHN (R)	13.29
692731	10-Feb-2021	CIENFUEGOS, FRANK (R)	1,596.00
692732	10-Feb-2021	COOPER, ROBERT (R)	238.93
692733	10-Feb-2021	CORE CONSTRUCTION INC (R)	1,231.06
692734	10-Feb-2021	CORONADO, JOANNA (R)	8.90
692735	10-Feb-2021	DIAZ, CHRISTIAN (R)	39.27
692736	10-Feb-2021	DUFF, DALE (R)	24.41
692737	10-Feb-2021	EAST VALLEY CONSTRUCTION LLC (R)	1,184.78
692738	10-Feb-2021	ELLSWORTH, DEBRA (R)	15.99
692739	10-Feb-2021	ESTAVILLO, TARIN (R)	54.86
692740	10-Feb-2021	ESTES, JOSH (R)	30.88
692741	10-Feb-2021	FIELDS, MARICRUZ (R)	8.00
692742	10-Feb-2021	FILIO, ASHLEY (R)	52.93
692743	10-Feb-2021	GALE, STEVEN (R)	57.49
692744	10-Feb-2021	GALVEZ, MAKENZIE (R)	30.58
692745	10-Feb-2021	GAMEZ, MARION (R)	62.17
692746	10-Feb-2021	GARIEPY, BRITTNIE (R)	79.17
692747	10-Feb-2021	GARTNER, STEVEN (R)	14.25
692748	10-Feb-2021	GERBER, BRETT (R)	64.12
692749	10-Feb-2021	GERGES, JOSEPH (R)	13.46
692750	10-Feb-2021	GILBREATH, LAURA (R)	17.13
692751	10-Feb-2021	GONZALES, JOANNA (R)	16.01
692752	10-Feb-2021	GONZALES, PHOENIX (R)	21.48
692753	10-Feb-2021	GUTHRIE, JOSEPH (R)	26.46
692754	10-Feb-2021	IHEAGWAM, OLUWASEYI (R)	40.42
692755	10-Feb-2021	IRBY, RYAN (R)	81.47
692756	10-Feb-2021	JAIN, ANMOL (R)	96.09
692757	10-Feb-2021	JAMES, STEVEN (R)	66.75
692758	10-Feb-2021	JAY, DEBBIE (R)	127.67
692759	10-Feb-2021	JOHNSON, JOHN (R)	43.75
692760	10-Feb-2021	KNOCHEL BROS INC (R)	1,401.68
692761	10-Feb-2021	KUPPUSAMY, NALLA (R)	10.01
692762	10-Feb-2021	LAHR, CARRIE (R)	113.88
692763	10-Feb-2021	LEDUC, ASHLEY (R)	35.94
692764	10-Feb-2021	LESTER, THURMAN (R)	78.94
692765	10-Feb-2021	LI, JUNMEI (R)	17.11
692766	10-Feb-2021	LOPEZ LICON, LESLIE (R)	120.00
692767	10-Feb-2021	LOPEZ, SHANNON (R)	39.35
692768	10-Feb-2021	MANIACI, JASON (R)	55.73
692769	10-Feb-2021	MARGOLIS, JILL (R)	8.44
692770	10-Feb-2021	MCCLURE, JAMES (R)	10.58
692771	10-Feb-2021	MCLEOD, FRANK (R)	52.65
692772	10-Feb-2021	MIANO, JESSICA (R)	37.70

692773	10-Feb-2021	MUNCY, JENNIFER (R)	25.32
692774	10-Feb-2021	NEUMANN, ALEXANDRA (R)	28.06
692775	10-Feb-2021	NEWSOME, LAFAYETTE (R)	66.99
692776	10-Feb-2021	OLMSTED, LAURA (R)	14.30
692777	10-Feb-2021	ORTEGA, MARTIN (R)	72.80
692778	10-Feb-2021	PADILLA-CLAW, JESSE (R)	10.80
692779	10-Feb-2021	PARK N SHADE OF TUCSON, INC (R)	1,309.31
692780	10-Feb-2021	PATHAK, NITIN (R)	38.11
692781	10-Feb-2021	PERRY, JUDY (R)	5.79
692782	10-Feb-2021	PIXLER, JIMDIN (R)	74.38
692783	10-Feb-2021	PRICE, JUDY (R)	20.70
692784	10-Feb-2021	RAHMAN, JOHEB (R)	30.51
692785	10-Feb-2021	RHOTON, KATHRYN (R)	15.71
692786	10-Feb-2021	RIOS, JOHN (R)	239.83
692787	10-Feb-2021	RODRIGUEZ, MONICA (R)	53.82
692788	10-Feb-2021	RYAN COMPANIES US INC (R)	1,302.16
692789	10-Feb-2021	SANCHEZ, PATRICIA (R)	47.11
692790	10-Feb-2021	SANTOS, NADIM (R)	237.45
692791	10-Feb-2021	SAVILLE, KENNETH (R)	5.31
692792	10-Feb-2021	SEHER, TAYLOR (R)	21.87
692793	10-Feb-2021	SHACKELTON, MARGARET (R)	115.82
692794	10-Feb-2021	SHAH, PIYUSH (R)	52.65
692795	10-Feb-2021	SPENCER, CHRIS (R)	82.91
692796	10-Feb-2021	TANNER, GEORGETTE (R)	41.11
692797	10-Feb-2021	TATE, DANNISHA (R)	6.75
692798	10-Feb-2021	TREVANTHAN, ALLISON (R)	48.56
692799	10-Feb-2021	URTEAGA, ALIDA (R)	34.14
692800	10-Feb-2021	VALENZUELA, RAMONA (R)	29.02
692801	10-Feb-2021	VERSCHAETSE, NATHAN (R)	32.34
692802	10-Feb-2021	WHITELEY, CARRIE (R)	50.40
692803	10-Feb-2021	WILLIAMS, CINDY (R)	39.45
692804	10-Feb-2021	WITTAS, STEVEN (R)	48.86
692805	10-Feb-2021	WORD, TYRAE (R)	15.75
692806	10-Feb-2021	XIE, YANLIU (R)	325.16
692807	11-Feb-2021	ERNO, STEPHEN H	308.52
692808	12-Feb-2021	ARIZONA PUBLIC SERVICE COMPANY	677.00
692809	12-Feb-2021	CASAREZ, JUANA	140.32
692810	12-Feb-2021	COANNAH REALTY LLC	1,371.00
692811	12-Feb-2021	DENALI REAL ESTATE LLC	750.00
692812	12-Feb-2021	GO GET IT INVESTMENTS LLC	850.00
692813	12-Feb-2021	VELA, BRITTANY	481.00
692814	12-Feb-2021	VISTA STAR COMPANY, LLC	38.00
692815	17-Feb-2021	A MIND FOR DETAIL INC	6,923.75
692816	17-Feb-2021	ALLIED UNIVERSAL SECURITY SERVICES	3,936.87
692817	17-Feb-2021	APL ACCESS & SECURITY	70.00
692818	17-Feb-2021	ARIZONA ATTORNEY GENERAL	1,379.96
692819	17-Feb-2021	ARIZONA ELEVATOR SOLUTIONS INC	17,148.54
692820	17-Feb-2021	ARIZONA MATERIALS LLC	1,164.58
692821	17-Feb-2021	ARIZONA OFFICE TECHNOLOGIES	396.57
692822	17-Feb-2021	ARIZONA PUBLIC SERVICE COMPANY	237.49
692823	17-Feb-2021	ARIZONA STATE UNIVERSITY	25,000.00
692824	17-Feb-2021	AVD LAND 2 LLC (R)	45.00
692825	17-Feb-2021	AXON ENTERPRISE, INC.	21,603.12
692826	17-Feb-2021	BAKER & TAYLOR INC	7,200.78
692827	17-Feb-2021	BANK OF NEW YORK, THE	750.00

692828	17-Feb-2021	BLINDS & BEYOND BY WIKLER INC	14,041.99
692829	17-Feb-2021	BOUND TREE MEDICAL LLC	2,785.50
692830	17-Feb-2021	BROOKSIE'S	89.22
692831	17-Feb-2021	CARE INC	210.00
692832	17-Feb-2021	CHANDLER AREA UNITED WAY	5,761.00
692833	17-Feb-2021	CHANDLER CHAMBER COMMUNITY FOUNDATION	1,382.40
692834	17-Feb-2021	CITY OF TEMPE	112,852.92
692835	17-Feb-2021	COMMUNITY HEALTH CHARITIES	1,974.00
692836	17-Feb-2021	CORE & MAIN LP	3,332.25
692837	17-Feb-2021	CORE X SYSTEM LLC	11,278.08
692838	17-Feb-2021	COX COMMUNICATIONS INC	1,605.00
692839	17-Feb-2021	CPAAC	210.00
692840	17-Feb-2021	CRAWFORD MECHANICAL SERVICES	773.00
692841	17-Feb-2021	DECAUSSIN, RANDALL CAMERON	1,000.00
692842	17-Feb-2021	DESERT WIDE PROPERTIES INC.	22.50
692843	17-Feb-2021	DIBBLE & ASSOCIATES CONSULTING ENGINEERS, INC	17,053.12
692844	17-Feb-2021	DPC ENTERPRISES LP	69,041.23
692845	17-Feb-2021	SOUTHWEST GAS CORP	191.81
692846	17-Feb-2021	AT&T MOBILITY	232.25
692847	17-Feb-2021	AT&T MOBILITY	3,544.92
692848	17-Feb-2021	CHACON, LAURO (R)	18.38
692849	17-Feb-2021	CITY OF PHOENIX	145,699.00
692850	17-Feb-2021	ENNIS-FLINT, INC	4,621.92
692851	17-Feb-2021	ENVISIONWARE INC	2,912.40
692852	17-Feb-2021	FAZIO'S CATERING & EVENT CENTER LLC	10,000.00
692853	17-Feb-2021	FERGUSON ENTERPRISES, LLC	4,866.63
692854	17-Feb-2021	FOCUSED ON EYES LLC (R)	45.00
692855	17-Feb-2021	FRIENDS OF THE CHANDLER LIBRARY	80.50
692856	17-Feb-2021	GRAINGER INC	1,432.50
692857	17-Feb-2021	GRAINGER INC	3,325.47
692858	17-Feb-2021	HDR ENGINEERING INC	13,334.79
692859	17-Feb-2021	HENNESY MECHANICAL SALES	55,100.00
692860	17-Feb-2021	HOWARD, RONALD	280.00
692861	17-Feb-2021	HSIN HAN TING LLC (R)	45.00
692862	17-Feb-2021	INGRAM LIBRARY SERVICES	511.32
692863	17-Feb-2021	IPROMOTEU.COM	823.21
692864	17-Feb-2021	JENNINGS, HAUG & CUNNINGHAM, LLP	1,771.00
692865	17-Feb-2021	JOHNSON, JEFF (R)	35.00
692866	17-Feb-2021	KRISTIN AND CO LLC (R)	55.00
692867	17-Feb-2021	LINEN BOUQUET (R)	45.00
692868	17-Feb-2021	LYFT INC	1,341.88
692869	17-Feb-2021	M & A ENTERPRISES (R)	22.50
692870	17-Feb-2021	MATHESON TRI-GAS INC	914.53
692871	17-Feb-2021	MESA PD SWAT TEAM	300.00
692872	17-Feb-2021	MICHAEL D MILLER JR ATTORNEY AT LAW INC (R)	45.00
692873	17-Feb-2021	MIDWEST TAPE	32.46
692874	17-Feb-2021	MUNICIPAL EMERGENCY SERVICES INC	1,560.31
692875	17-Feb-2021	NATIONAL LAW ENFORCEMENT SUPPLY	179.00
692876	17-Feb-2021	NORKAH INC	1,300.00
692877	17-Feb-2021	NORTHSTAR COMMUNICATIONS INC	1,500.00
692878	17-Feb-2021	NTT AMERICA SOLUTIONS, INC	96,264.11
692879	17-Feb-2021	OTTO LOGISTICS LLC	31,305.26
692880	17-Feb-2021	PINON FAMILY MEDICINE	1,261.26
692881	17-Feb-2021	PIONEER ATHLETICS	1,736.59
692882	17-Feb-2021	PLASTICS GENERAL POYMERS (R)	22.50

692883	17-Feb-2021	PRECISION SWEEPING SERVICES, LLC	5,277.11
692884	17-Feb-2021	PROJECT HOSTS INC	1,341.00
692885	17-Feb-2021	HOFFMAN SOUTHWEST CORP	5,113.29
692886	17-Feb-2021	NESTLE PURE LIFE	265.95
692887	17-Feb-2021	PROFESSIONAL PIPING SYSTEMS, LLC	32,452.45
692888	17-Feb-2021	QUALTRAX INC	11,428.90
692889	17-Feb-2021	RELIANT GASES, LTD.	5,198.15
692890	17-Feb-2021	REPUBLIC SERVICES INC	6,052.50
692891	17-Feb-2021	RICOH USA INC	230.52
692892	17-Feb-2021	ROSEMOUNT ANALYTICAL	6,525.96
692893	17-Feb-2021	SALT RIVER PROJECT	11,235.82
692894	17-Feb-2021	SALT RIVER PROJECT	7,291.86
692895	17-Feb-2021	SAN TAN FORD	230,293.32
692896	17-Feb-2021	SKYLINE WINDOW CLEANING	4,860.00
692897	17-Feb-2021	STATE OF ARIZONA	65.00
692898	17-Feb-2021	SUN MECHANICAL CONTRACTING INC.	718.22
692899	17-Feb-2021	SUTTON BAY PROPERTIES LLC (R)	58,558.75
692900	17-Feb-2021	T-MOBILE USA	459.00
692901	17-Feb-2021	T2 PEST SERVICES	32.00
692902	17-Feb-2021	TECHNOLOGY INTEGRATORS LLC	42,026.21
692903	17-Feb-2021	TEL TECH NETWORKS, INC.	11,596.69
692904	17-Feb-2021	THATCHER COMPANY OF ARIZONA	40,473.54
692905	17-Feb-2021	TRAFFICADE SERVICE INC	978.87
692906	17-Feb-2021	TRIPLE N ENTERPRISES CHANDLER LLC	5,850.00
692907	17-Feb-2021	UBM ENTERPRISE, INC	487.50
692908	17-Feb-2021	VINCON ENGINEERING CONSTRUCTION LLC	173,841.00
692909	17-Feb-2021	VOIANCE LANGUAGE SERVICES LLC	460.93
692910	17-Feb-2021	W W WILLIAMS	1,018.16
692911	17-Feb-2021	WATER & ENERGY SYSTEMS TECHNOLOGY INC	2,306.75
692912	17-Feb-2021	WESTERN STATES FIRE PROTECTION	7,550.00
692913	17-Feb-2021	Y2K ENGINEERING, LLC	16,943.00
692914	17-Feb-2021	YELLOWSTONE LANDSCAPE	1,287.68
692915	17-Feb-2021	YMC ARIZONA PROPERTIES LLC (R)	45.00
692916	17-Feb-2021	ZOLL MEDICAL CORPORATION	12,273.03
692917	17-Feb-2021	ACOSTA, JESSE (R)	14.28
692918	17-Feb-2021	ALBANESE, ANTHONY (R)	53.07
692919	17-Feb-2021	BAILEY, JANET (R)	34.85
692920	17-Feb-2021	BONALANZA, RICHARD (R)	28.16
692921	17-Feb-2021	BROWN, LAUREN (R)	25.21
692922	17-Feb-2021	CARPENTER, JESSICA (R)	300.00
692923	17-Feb-2021	CONKLIN, KEVIN (R)	61.76
692924	17-Feb-2021	DARROW, JEFFREY (R)	12.11
692925	17-Feb-2021	DOWNS, MATHEW (R)	22.99
692926	17-Feb-2021	FULLARD, SUSAN (R)	77.89
692927	17-Feb-2021	GONG, ZHEN (R)	19.65
692928	17-Feb-2021	GRAHAM, MATTHEW (R)	19.57
692929	17-Feb-2021	HILTON, CORY (R)	72.36
692930	17-Feb-2021	JOHNS, MICHELLE (R)	30.94
692931	17-Feb-2021	JOHNSON, CAROL (R)	29.24
692932	17-Feb-2021	KUSAK, PABLO (R)	90.59
692933	17-Feb-2021	MCMILLAN, JAMES (R)	107.70
692934	17-Feb-2021	MICHAELS, MEGAN (R)	62.54
692935	17-Feb-2021	MILENDER, SHAWN (R)	66.60
692936	17-Feb-2021	RAJADHYAKSHA, VIKRAM (R)	2,414.75
692937	17-Feb-2021	SECRETARY OF STATE	43.00

692938	17-Feb-2021	SNYDER, KAREN (R)	61.25
692939	17-Feb-2021	SP CONTRACTING (R)	349.22
692940	17-Feb-2021	STIERHEIM, ROBERT (R)	86.09
692941	17-Feb-2021	SWOARTZ, CODY (R)	53.82
692942	17-Feb-2021	WOLFE, BROOKE (R)	24.40
692943	17-Feb-2021	ZAPLATIN, ALEXANDER (R)	49.17
692944	17-Feb-2021	ALLEN, AYANA (R)	5.24
692945	17-Feb-2021	BABURAJ, BARATHI (R)	19.48
692946	17-Feb-2021	DALE-STRAWN, BAILEY (R)	65.67
692947	17-Feb-2021	DALES, RUTH (R)	74.95
692948	17-Feb-2021	GAINES, TATIANIA (R)	13.88
692949	17-Feb-2021	GELLINEAU, DEANNA (R)	47.32
692950	17-Feb-2021	GRAY, SHIRLEY (R)	59.68
692951	17-Feb-2021	HODGE, EMILY (R)	61.50
692952	17-Feb-2021	LARSEN, GRETCHEN (R)	76.74
692953	17-Feb-2021	QUIK-WAY RETAIL ASSOCIATES II, LTD (R)	1,254.59
692954	17-Feb-2021	RIVERA, EDUARDO (R)	13.53
692955	17-Feb-2021	ROMNEY, DALLAS (R)	24.83
692956	17-Feb-2021	ZHANG, YONGMING (R)	68.52
692957	18-Feb-2021	BALCH, RIANN	80.00
692958	18-Feb-2021	JAROSIK, CHRISTINE M	18.47
692959	18-Feb-2021	PINON FAMILY MEDICINE	1,061.26
692960	18-Feb-2021	POWERS, SAYEEDA A	75.00
692961	18-Feb-2021	ROEPER, CATHERINE D	91.36
692962	18-Feb-2021	VARNEY, MEGAN (R)	1,140.60
692963	18-Feb-2021	RJ TORRANCE LLC	108.00
692964	18-Feb-2021	RUVOLO, CHARLES OR LAURIE	400.00
692965	23-Feb-2021	1GPA	653.00
692966	23-Feb-2021	2013-1 IH BORROWER LP	3,553.00
692967	23-Feb-2021	2017-1 IH BORROWER LP	4,889.00
692968	23-Feb-2021	2017-2 IH BORROWER LP	502.00
692969	23-Feb-2021	2018-2 IH BORROWER LP	1,341.00
692970	23-Feb-2021	AHMETOVIC, AMILA	1,600.00
692971	23-Feb-2021	APARTMENT HUNTERS	4,305.00
692972	23-Feb-2021	ARCHES AT HIDDEN CREEK	1,418.00
692973	23-Feb-2021	AZ REALTY PROPERTY HOLDINGS, LLC	8,876.00
692974	23-Feb-2021	BENTZ, CHRISTINA A	687.00
692975	23-Feb-2021	BREWER & STRATTON PROPERTY MANAGEMENT LLC	3,094.00
692976	23-Feb-2021	CH REALTY VII-TH MHC CHANDLER WISHING WELL, LLC	400.00
692977	23-Feb-2021	CITY PROPERTY MANAGEMENT COMPANY	575.00
692978	23-Feb-2021	DENALI REAL ESTATE LLC	3,118.00
692979	23-Feb-2021	DESERT WIDE PROPERTIES INC.	475.00
692980	23-Feb-2021	DO, HUNG VAN	1,128.00
692981	23-Feb-2021	DWIGHT SCHRUTE HOLDINGS LLC	1,226.00
692982	23-Feb-2021	FARNSWORTH REALTY & MANAGEMENT	1,534.00
692983	23-Feb-2021	GANI, OSAMA S	1,346.00
692984	23-Feb-2021	GEDDAM, PRIYABRUNDA	586.00
692985	23-Feb-2021	GO GET IT INVESTMENTS LLC	915.00
692986	23-Feb-2021	GREAT HOMES REALTY, LLC	950.00
692987	23-Feb-2021	GREENTREE PLACE APARTMENTS	1,687.00
692988	23-Feb-2021	HAMMACK, PAULA	1,377.00
692989	23-Feb-2021	HOMETREND PROPERTY MANAGEMENT & REAL ESTATE INC	961.00
692990	23-Feb-2021	J & B INVESTMENT	1,114.00
692991	23-Feb-2021	LIFEWELL BEHAVIORAL WELLNESS	506.00
692992	23-Feb-2021	LIM, NIMUL	619.00

692993	23-Feb-2021	LYNN, DANNY	900.00
692994	23-Feb-2021	NELSEN, DON E.	972.00
692995	23-Feb-2021	NINEVEH PROPERTIES LLC	1,549.00
692996	23-Feb-2021	NOMA GROUP INC	1,488.00
692997	23-Feb-2021	NXRT FAIRWAYS LLC	5,392.00
692998	23-Feb-2021	ON Q PROPERTY MANAGEMENT	1,706.00
692999	23-Feb-2021	ONE WAY HOMES, LLC	1,165.00
693000	23-Feb-2021	PARK TOWER CHANDLER, LLC	2,335.00
693001	23-Feb-2021	PARKER, DIXIE L.	530.00
693002	23-Feb-2021	PARKER, DIXIE L.	592.00
693003	23-Feb-2021	PROPERTY PLUS USA	677.00
693004	23-Feb-2021	PRS PROPERTY MANAGEMENT	1,352.00
693005	23-Feb-2021	REALTY EXECUTIVES, AN ARIZONA CORP	1,421.00
693006	23-Feb-2021	ROBERTS, CAROL YVONNE	881.00
693007	23-Feb-2021	ROBSON APARTMENTS LLC	467.00
693008	23-Feb-2021	RUVOLO, CHARLES OR LAURIE	741.00
693009	23-Feb-2021	SAISSAN, JOHN	626.00
693010	23-Feb-2021	SCREMIN FAMILY LTD	861.00
693011	23-Feb-2021	SECURED EQUITIES	1,004.00
693012	23-Feb-2021	SUN, HONGXLA	1,650.00
693013	23-Feb-2021	SUNDIAL REAL ESTATE	505.00
693014	23-Feb-2021	SUNDIAL REAL ESTATE LC	831.00
693015	23-Feb-2021	SUNDIAL REAL ESTATE LC	755.00
693016	23-Feb-2021	TEAM SIZZLE	1,100.00
693017	23-Feb-2021	THE HOUSING PROFESSIONALS LLC	2,452.00
693018	23-Feb-2021	THR PHOENIX LP	3,090.00
693019	23-Feb-2021	THR PROPERTY BORROWER LP	2,595.00
693020	23-Feb-2021	TRADELANDS LLC	1,478.00
693021	23-Feb-2021	TRAN, TOM B	1,011.00
693022	23-Feb-2021	VISTA ASSET COMPANY LLC	2,723.00
693023	23-Feb-2021	VISTA STAR COMPANY, LLC	5,409.00
693024	23-Feb-2021	WALTON ENTERPRISES LLC	573.00
693025	23-Feb-2021	WORLD CLASS PROPERTIES	364.00
693026	23-Feb-2021	WREF	12,512.00
693027	23-Feb-2021	WREF GREENTREE PLACE, LP	9,483.00
693028	23-Feb-2021	ZHENG, SHAO MEI	1,400.00
693029	24-Feb-2021	A MIND FOR DETAIL INC	13,000.00
693030	24-Feb-2021	ACCIDENT LAW GROUP (R)	5.00
693031	24-Feb-2021	ALLIED UNIVERSAL SECURITY SERVICES	2,291.40
693032	24-Feb-2021	ARIZONA ATTORNEY GENERAL	510.91
693033	24-Feb-2021	ARIZONA DEPT OF ECONOMIC SECURITY	16,242.29
693034	24-Feb-2021	ARIZONA POLICE PSYCHOLOGY PLLC	600.00
693035	24-Feb-2021	ARIZONA PUBLIC SERVICE COMPANY	14,061.09
693036	24-Feb-2021	ARIZONA TRUCK & COACH LLC	2,826.32
693037	24-Feb-2021	ASPEN TECHNOLOGIES	21,544.23
693038	24-Feb-2021	AUTO SAFETY HOUSE	136.96
693039	24-Feb-2021	AXON ENTERPRISE, INC.	6,086.42
693040	24-Feb-2021	BAKER & TAYLOR INC	4,232.99
693041	24-Feb-2021	BARRAZA INVESTIGATIONS (R)	10.00
693042	24-Feb-2021	BEST PLUMBING SPECIALTIES INC	667.22
693043	24-Feb-2021	BINGHAM EQUIPMENT COMPANY	877.09
693044	24-Feb-2021	BORDER STATES ELECTRIC SUPPLY	4,256.11
693045	24-Feb-2021	BOUND TREE MEDICAL LLC	463.39
693046	24-Feb-2021	BREYER LAW OFFICES (R)	5.00
693047	24-Feb-2021	BRIDGESTONE HOSEPOWER LLC	9.55

693048	24-Feb-2021	BROOKSIE'S	57.50
693049	24-Feb-2021	BUESING CORPORATION	360.16
693050	24-Feb-2021	CAPITAL PUMP & EQUIPMENT LLC	4,300.37
693051	24-Feb-2021	CENTURYLINK	16,723.54
693052	24-Feb-2021	CHANDLER CHAMBER COMMUNITY FOUNDATION	845.00
693053	24-Feb-2021	CHUBB	8,994.00
693054	24-Feb-2021	CITY OF CHANDLER	1,885.00
693055	24-Feb-2021	CLARK TRANSPORTATION SOLUTIONS	119,939.08
693056	24-Feb-2021	COMMUNICO LLC	6,875.00
693057	24-Feb-2021	COMPUTER AID, INC	15,664.00
693058	24-Feb-2021	CORE & MAIN LP	1,982.18
693059	24-Feb-2021	CRAFT'S QUALITY GLASS, INC.	3,002.80
693060	24-Feb-2021	CRAWFORD MECHANICAL SERVICES	1,100.90
693061	24-Feb-2021	CRISTANDO HOUSE, INC.	150.00
693063	24-Feb-2021	DAY AUTO SUPPLY, INC	3,190.80
693064	24-Feb-2021	DECA SOUTHWEST	11,731.54
693065	24-Feb-2021	DESERT TOX, LLC	115.80
693066	24-Feb-2021	DESTINY SOFTWARE, INC	4,500.00
693067	24-Feb-2021	DIBBLE & ASSOCIATES CONSULTING ENGINEERS, INC	28,404.00
693068	24-Feb-2021	DPC ENTERPRISES LP	82,955.38
693069	24-Feb-2021	MACE BECKSON, M.D., A PROFESSIONAL CORPORATION	1,897.50
693070	24-Feb-2021	MORO, DAYNA S (R)	10.00
693071	24-Feb-2021	OEHLER, DEBRA (R)	40.00
693072	24-Feb-2021	SALT RIVER PROJECT	32.59
693073	24-Feb-2021	SOUTHWEST GAS CORP	7,842.06
693074	24-Feb-2021	EUROFINS TESTAMERICA	3,050.00
693075	24-Feb-2021	MUNRO, REGINA	4,999.00
693076	24-Feb-2021	PROSPERITY FOOT SPA LLC	3,250.00
693077	24-Feb-2021	RAFTELIS FINANCIAL CONSULTANTS INC	11,482.50
693078	24-Feb-2021	REPUBLIC SERVICES INC	1,673.41
693079	24-Feb-2021	REYES & SONS LANDSCAPING LLC	3,855.00
693080	24-Feb-2021	RICOH USA INC	134.98
693081	24-Feb-2021	RKS PLUMBING & MECHANICAL INC	25,293.81
693082	24-Feb-2021	ROSEMOUNT ANALYTICAL	3,268.53
693083	24-Feb-2021	RWC INTERNATIONAL LTD	522.89
693084	24-Feb-2021	SAFELITE AUTOGLASS CORP	334.69
693085	24-Feb-2021	SALT RIVER PROJECT	593,302.23
693086	24-Feb-2021	SALVATION ARMY	93,750.00
693087	24-Feb-2021	SANCTUARY LANDSCAPE	1,150.00
693088	24-Feb-2021	SENERGY PETROLEUM, LLC	10,660.63
693089	24-Feb-2021	SETON CATHOLIC HIGH SCHOOL (R)	91.78
693090	24-Feb-2021	SKYLINE WINDOW CLEANING	70.00
693091	24-Feb-2021	SOUTHERN TIRE MART, LLC	1,723.36
693092	24-Feb-2021	SOUTHWEST UMPIRES ASSOCIATION	3,224.00
693093	24-Feb-2021	SPORTS BLING & THINGS	2,682.49
693094	24-Feb-2021	SUEZ WTS USA, INC	4,781.70
693095	24-Feb-2021	SURVEILLANCE SECURITY INC	216.00
693096	24-Feb-2021	T2 PEST SERVICES	96.00
693097	24-Feb-2021	TEL TECH NETWORKS, INC.	1,326.13
693098	24-Feb-2021	TELEVEDA SYSTEMS LLC	2,500.00
693099	24-Feb-2021	THATCHER COMPANY OF ARIZONA	73,331.12
693100	24-Feb-2021	THE SUN GROVES HOMEOWNERS ASSOCIATION	7,405.00
693101	24-Feb-2021	TOP TECH AUTOMOTIVE	2,600.00
693102	24-Feb-2021	TORGENSON LAW (R)	10.00
693103	24-Feb-2021	UBM ENTERPRISE, INC	11,987.79

693104	24-Feb-2021	VANMETER, CHERYL (R)	414.00
693105	24-Feb-2021	VERIZON WIRELESS	50.00
693106	24-Feb-2021	W L EMSHOFF	11,390.00
693107	24-Feb-2021	WALLENTINE, KENNETH R	324.68
693108	24-Feb-2021	WESTERN CRANE SERVICE	250.00
693109	24-Feb-2021	WESTERN STATES FIRE PROTECTION	1,265.00
693110	24-Feb-2021	WILSON ENGINEERS LLC	192,355.26
693111	24-Feb-2021	WINDOM SECURITY STRATEGIES TODAY, LLC	1,200.00
693112	24-Feb-2021	WORKGROUP CONNECTIONS INC	66,180.00
693113	24-Feb-2021	WUNDERLICH-MALEC SYSTEMS, INC	4,410.00
693114	24-Feb-2021	DANCY, HOLLY (R)	25.00
693115	24-Feb-2021	EARNHARDT	9,401.90
693116	24-Feb-2021	EARNHARDT CHEVROLET	643.96
693117	24-Feb-2021	ELLIE'S 2	500.00
693118	24-Feb-2021	EMPIRE SOUTHWEST	300.85
693119	24-Feb-2021	FACTORY MOTOR PARTS COMPANY	2,081.81
693120	24-Feb-2021	FLYERS ENERGY LLC	56,290.42
693121	24-Feb-2021	FSL HOME IMPROVEMENTS	16,626.71
693122	24-Feb-2021	GILA RIVER INDIAN COMMUNITY	19,473.76
693123	24-Feb-2021	GILA RIVER INDIAN COMMUNITY UTILITY AUTHORITY	21,204.45
693124	24-Feb-2021	GOLDBERG & OSBORNE (R)	5.00
693125	24-Feb-2021	GRAINGER INC	67.70
693126	24-Feb-2021	GRAINGER INC	531.23
693127	24-Feb-2021	GROUNDS CONTROL LLC	258.00
693128	24-Feb-2021	GUIDESOFT INC	951.12
693129	24-Feb-2021	HIGBEE CASES	2,500.00
693130	24-Feb-2021	HOT POT CARIBBEAN CUISINE LLC	1,950.00
693131	24-Feb-2021	HOT SHOT DELIVERY, INC	50.00
693132	24-Feb-2021	IMAGEWARE SOFTWARE	9,099.57
693133	24-Feb-2021	INTERWEST SAFETY SUPPLY LLC	1,421.42
693134	24-Feb-2021	JOHANSEN, KATHLEEN (R)	26.30
693135	24-Feb-2021	JR'S SHOES & BOOTS	244.00
693136	24-Feb-2021	JTB SUPPLY CO INC	38,146.51
693137	24-Feb-2021	KELLER ELECTRICAL INDUSTRIES INC	7,324.00
693138	24-Feb-2021	KMD COURT REPORTING SERVICES	177.85
693139	24-Feb-2021	LEVEL 3 COMMUNICATIONS LLC	2,368.57
693140	24-Feb-2021	LEVEL 3 COMMUNICATIONS LLC	630.75
693141	24-Feb-2021	LEVEL 3 COMMUNICATIONS LLC	2,634.94
693142	24-Feb-2021	LOGOCOMOTION	164.31
693143	24-Feb-2021	MANGO LANGUAGES	14,405.00
693144	24-Feb-2021	MARICOPA COUNTY ATTORNEY	5,834.95
693145	24-Feb-2021	MOORE, LISA	522.36
693146	24-Feb-2021	MUNICIPAL EMERGENCY SERVICES INC	377.38
693147	24-Feb-2021	NEGRETE LAW FIRM (R)	50.00
693148	24-Feb-2021	NFRA INC	34,744.07
693149	24-Feb-2021	NORTHSTAR COMMUNICATIONS INC	3,890.00
693150	24-Feb-2021	NTT AMERICA SOLUTIONS, INC	79,600.35
693151	24-Feb-2021	OTTO LOGISTICS LLC	14,980.10
693152	24-Feb-2021	PIPELINE SERVICES INC	2,919.17
693153	24-Feb-2021	PLAY BY PLAY PLAYGROUNDS, LLC	300.00
693154	24-Feb-2021	PREMIER ENGINEERING CORP	370.43
693155	24-Feb-2021	PROFESSIONAL PIPING SYSTEMS, LLC	28,275.00
693156	24-Feb-2021	RIVERA, MARIA ELENA (R)	10.00
693157	24-Feb-2021	STARALLIANCE, L.L.C.	400.00
693158	24-Feb-2021	AGUERO, KRIS (R)	59.93

693159	24-Feb-2021	AZIL ENTERPRISES (R)	201.14
693160	24-Feb-2021	BISSON, RYAN (R)	61.50
693161	24-Feb-2021	BRYAN, CAROL (R)	48.57
693162	24-Feb-2021	CLIFFORD, DIANA (R)	37.34
693163	24-Feb-2021	DIAZ, LADY (R)	20.09
693164	24-Feb-2021	DON, CHRISTOPHER (R)	70.26
693165	24-Feb-2021	EVANS, MORGAN (R)	22.91
693166	24-Feb-2021	GARCIA, KIMBERLY (R)	37.52
693167	24-Feb-2021	HACKMANN, PATTY (R)	28.59
693168	24-Feb-2021	HADDIX, GEORGE (R)	30.70
693169	24-Feb-2021	HARWOOD, BRYAN (R)	46.56
693170	24-Feb-2021	JONES, DONALD (R)	19.40
693171	24-Feb-2021	LIEBERMAN, ADAM (R)	120.00
693172	24-Feb-2021	LIU, RUOPENG (R)	28.68
693173	24-Feb-2021	MALLORY, RAHCELLE (R)	38.96
693174	24-Feb-2021	MARTINEZ, SELINA (R)	79.82
693175	24-Feb-2021	MCCONNEL, JON (R)	83.32
693176	24-Feb-2021	MCCORMICK, KELLY (R)	59.28
693177	24-Feb-2021	MCWILLIAMS, GABE (R)	21.81
693178	24-Feb-2021	MINOR, KYLE (R)	54.91
693179	24-Feb-2021	RICHMOND, CARLA (R)	82.44
693180	24-Feb-2021	SOHA, STPHEN (R)	26.15
693181	24-Feb-2021	SUNRISE CHANDLER APARTMENTS LLC (R)	185.66
693182	24-Feb-2021	TILTON, WENDY (R)	28.59
693183	24-Feb-2021	WINSTON, AMY (R)	89.94
693184	24-Feb-2021	WITT, JERRY (R)	78.14
693185	25-Feb-2021	ARIZONA STATE UROLOGICAL INSTITUTE	10,000.00
693186	25-Feb-2021	MOWER, AARON M	409.94
693187	25-Feb-2021	NIEBLAS, EDGAR S	100.00
693188	25-Feb-2021	RICHARDSON, JASON R	130.19
693189	03-Mar-2021	A & M NUT & BOLT	2,765.40
693190	03-Mar-2021	A MIND FOR DETAIL INC	2,481.26
693191	03-Mar-2021	ABRACADABRA PRODUCTIONS INC	2,000.00
693192	03-Mar-2021	ALLARD COLLISION	18,667.90
693193	03-Mar-2021	ALLIED UNIVERSAL SECURITY SERVICES	833.20
693194	03-Mar-2021	ALTEC INDUSTRIES INC	4,051.07
693195	03-Mar-2021	AM SIGNAL, INC	543.80
693196	03-Mar-2021	AMERICAN FITNESS SERVICES, LLC	383.54
693197	03-Mar-2021	APL ACCESS & SECURITY	47,873.94
693198	03-Mar-2021	ARIZONA ELEVATOR SOLUTIONS INC	17,005.88
693199	03-Mar-2021	ARIZONA MATERIALS LLC	3,758.66
693200	03-Mar-2021	ARIZONA PUBLIC SERVICE COMPANY	52.17
693201	03-Mar-2021	ARIZONA STATE TREASURER	176,325.54
693202	03-Mar-2021	ARIZONA TRUCK & COACH LLC	870.76
693203	03-Mar-2021	ARIZONA WASTEWATER INDUSTRIES INC	696.22
693204	03-Mar-2021	B&E APPRAISAL SERVICE LLC	168.75
693205	03-Mar-2021	BAKER & TAYLOR INC	2,176.86
693206	03-Mar-2021	BANNER EMPLOYER SERVICES, LLC	5,250.00
693207	03-Mar-2021	BINGHAM EQUIPMENT COMPANY	226.21
693208	03-Mar-2021	BRIDGESTONE HOSEPOWER LLC	947.79
693209	03-Mar-2021	BUESING CORPORATION	90.00
693210	03-Mar-2021	CERNER CORPORATION	592.11
693211	03-Mar-2021	CHANDLER CHAMBER COMMUNITY FOUNDATION	1,786.00
693212	03-Mar-2021	CITY OF MESA	6,000.00
693213	03-Mar-2021	CMS/NEXTECH, LLC (R)	45.00

693214	03-Mar-2021	COMPUTER AID, INC	61,539.56
693215	03-Mar-2021	CORE & MAIN LP	6,797.24
693216	03-Mar-2021	CRONIN LAW GROUP, PLLC	2,905.50
693217	03-Mar-2021	D L SALES CORP	3,087.07
693218	03-Mar-2021	DATA PROCESSING AIR CORPORATION	107.00
693219	03-Mar-2021	DAY AUTO SUPPLY, INC	2,143.37
693220	03-Mar-2021	DECA SOUTHWEST	3,425.64
693221	03-Mar-2021	DIBBLE CM, LLC	3,625.00
693222	03-Mar-2021	DPC ENTERPRISES LP	8,914.72
693223	03-Mar-2021	AFR ENGINE	4,995.00
693224	03-Mar-2021	EARNHARDT	1,595.33
693225	03-Mar-2021	EARNHARDT CHEVROLET	687.79
693226	03-Mar-2021	EMPIRE SOUTHWEST	110.21
693227	03-Mar-2021	ENERGYCAP INC	19,342.89
693228	03-Mar-2021	ENG, LEUNG	160.00
693229	03-Mar-2021	ENVIRONMENTAL DRAIN & ODOR CONTROL SERVICES LLC	770.00
693230	03-Mar-2021	FACTORY MOTOR PARTS COMPANY	542.52
693231	03-Mar-2021	FLYERS ENERGY LLC	14,082.84
693232	03-Mar-2021	FREIGHTLINER OF ARIZONA LLC	5,215.98
693233	03-Mar-2021	GANGPLANK COLLECTIVE CHANDLER, LLC	37,500.00
693234	03-Mar-2021	GILA RIVER INDIAN COMMUNITY	5,621.25
693235	03-Mar-2021	GRAINGER INC	1,095.36
693236	03-Mar-2021	GRAINGER INC	131.60
693237	03-Mar-2021	GUIDESOFT INC	475.56
693238	03-Mar-2021	HAZEN AND SAWYER	40,505.75
693239	03-Mar-2021	INTECH HEALTH VENTURES	5,831.00
693240	03-Mar-2021	J & A FOODS LLC (R)	45.00
693241	03-Mar-2021	JCG TECHNOLOGIES INC	875.21
693242	03-Mar-2021	LIFELONG FITNESS BY KATHI	1,870.00
693243	03-Mar-2021	LIGHTING UNLIMITED INC	801.78
693244	03-Mar-2021	LIM FAMILY MARTIAL ARTS	1,440.00
693245	03-Mar-2021	LOGOCOMOTION	1,488.72
693246	03-Mar-2021	LOPEZ CONCESSIONS, LLC (R)	45.00
693247	03-Mar-2021	MARICOPA COUNTY	13,332.00
693248	03-Mar-2021	MARICOPA COUNTY TREASURER	16,457.78
693249	03-Mar-2021	MAS BELLS LLC (R)	45.00
693250	03-Mar-2021	METERING SERVICES INC	2,080.00
693251	03-Mar-2021	MIDWEST TAPE	67.92
693252	03-Mar-2021	NESTLE PURE LIFE	2,649.93
693253	03-Mar-2021	NORTHSTAR COMMUNICATIONS INC	23,030.00
693254	03-Mar-2021	NTT AMERICA SOLUTIONS, INC	47,670.42
693255	03-Mar-2021	OFFICE OF THE JURY COMMISSION	1,131.00
693256	03-Mar-2021	OLS RESTORATION, INC	13,250.00
693257	03-Mar-2021	ORACLE AMERICA INC	963.71
693258	03-Mar-2021	OTTO ENVIRONMENTAL SYSTEMS NORTH AMERICA, INC.	25,359.00
693259	03-Mar-2021	OTTO LOGISTICS LLC	16,601.87
693260	03-Mar-2021	PITNEY BOWES INC	304.65
693261	03-Mar-2021	PREMIER ENGINEERING CORP	4,173.88
693262	03-Mar-2021	PRIDE GROUP LLC	3,523.40
693263	03-Mar-2021	PRZYBYLA, JENNIFER (R)	586.98
693264	03-Mar-2021	REDD CONSTRUCTION LLC (R)	33.75
693265	03-Mar-2021	REPUBLIC SERVICES INC	940.83
693266	03-Mar-2021	REYES & SONS LANDSCAPING LLC	103,554.90
693267	03-Mar-2021	RICOH USA INC	108.40
693268	03-Mar-2021	ROSEMOUNT ANALYTICAL	5,204.64

693269	03-Mar-2021	SAN TAN FORD	75,416.94
693270	03-Mar-2021	SCULPTURE SERVICES OF COLORADO, LLC	3,150.00
693271	03-Mar-2021	SENERGY PETROLEUM, LLC	4,910.70
693272	03-Mar-2021	SOLENIS LLC	27,157.20
693273	03-Mar-2021	SOUTHERN TIRE MART, LLC	953.81
693274	03-Mar-2021	SPARKS KARATE	525.00
693275	03-Mar-2021	SUN MECHANICAL CONTRACTING INC.	18,760.00
693276	03-Mar-2021	T-MOBILE USA	3,833.85
693277	03-Mar-2021	TELEVEDA SYSTEMS LLC	3,150.00
693278	03-Mar-2021	THAILYS LLC (R)	11.25
693279	03-Mar-2021	THATCHER COMPANY OF ARIZONA	13,230.00
693280	03-Mar-2021	TRASH PANDA VEGAN LLC (R)	45.00
693281	03-Mar-2021	TWINE SOCIAL LLC	13,680.00
693282	03-Mar-2021	UNITED ROTARY BRUSH CORPORATION	7,823.32
693283	03-Mar-2021	UNITED SITE SERVICES OF ARIZONA, INC.	184.37
693284	03-Mar-2021	USP TECHNOLOGIES	13,858.00
693285	03-Mar-2021	VINCON ENGINEERING CONSTRUCTION LLC	485,235.37
693286	03-Mar-2021	W L EMSHOFF	6,900.00
693287	03-Mar-2021	WESTERN STATES FIRE PROTECTION	845.00
693288	03-Mar-2021	WRIGHT CONSULTING GROUP INC (R)	45.00
693289	03-Mar-2021	YELLOWSTONE LANDSCAPE	27,672.23
693290	03-Mar-2021	BADAHMAN, ALHASSAN (R)	108.54
693291	03-Mar-2021	BARNES, LINDA (R)	42.23
693292	03-Mar-2021	BAZAN MONROY, YOSELYN (R)	36.74
693293	03-Mar-2021	BEHREND, ANTHONY (R)	72.98
693294	03-Mar-2021	BROOKS, JAMES (R)	7.80
693295	03-Mar-2021	BUCA DI BEPPO (R)	607.76
693296	03-Mar-2021	CANOPY COMMUNITY ASSOCIATION (R)	315.77
693297	03-Mar-2021	CARUME CONTRACTING QUALITY (R)	1,158.73
693298	03-Mar-2021	CASTILLO, MARIA (R)	56.57
693299	03-Mar-2021	CHANLEY, CHEYENNE (R)	17.23
693300	03-Mar-2021	CHOLLA MANAGING GROUP (R)	1,405.28
693301	03-Mar-2021	CORWIN, DANIEL (R)	37.54
693302	03-Mar-2021	DON, CHRISTOPHER (R)	13.59
693303	03-Mar-2021	FENNEL, CHRISTINA (R)	58.32
693304	03-Mar-2021	FLORES, MARTIN (R)	87.14
693305	03-Mar-2021	GRANADO, JOE (R)	131.25
693306	03-Mar-2021	HALL, DIANE (R)	35.86
693307	03-Mar-2021	HETRICK, RENEE (R)	57.92
693308	03-Mar-2021	KUGLER, MONICA (R)	40.35
693309	03-Mar-2021	L KEELEY CONSTRUCTION (R)	957.47
693310	03-Mar-2021	LEI, QIN (R)	58.80
693311	03-Mar-2021	LESTER, THURMAN (R)	78.94
693312	03-Mar-2021	LONDON-WILLIAMS, JOSEPHINE (R)	30.08
693313	03-Mar-2021	MATHESON, COLIN (R)	31.15
693314	03-Mar-2021	MCCRACKEN, JEVON (R)	84.67
693315	03-Mar-2021	MCNEIL BROTHERS INC (R)	1,257.81
693316	03-Mar-2021	MYND MANAGEMENT (R)	56.17
693317	03-Mar-2021	OLMSTEAD, PAUL (R)	69.88
693318	03-Mar-2021	PERRY-CHRISTENSEN, CORI (R)	71.35
693319	03-Mar-2021	PRIDE CONTRACTING INC (R)	1,169.33
693320	03-Mar-2021	REID, DIMITRI (R)	7.80
693321	03-Mar-2021	RUSSELL, JOANNAH	48.29
693322	03-Mar-2021	SHEWCHUK, JAMES (R)	51.79
693323	03-Mar-2021	SUNLAND ASPHALT AND CONSTRUCTION, INC (R)	1,068.74

693324	03-Mar-2021	TATREAU, CALEB (R)	26.63
693325	03-Mar-2021	TAYLOR, SETH (R)	57.75
693326	03-Mar-2021	TENCH, KEITH (R)	14.49
693327	03-Mar-2021	WOLTERS, GERARD (R)	73.20
693328	03-Mar-2021	10615 W CAMPBELL LLC	3,162.00
693329	03-Mar-2021	ARIZONA PUBLIC SERVICE COMPANY	5,855.00
693330	03-Mar-2021	BUSTAMANTE, CARMEN (R)	26.00
693331	03-Mar-2021	CITY OF GLENDALE (233-5)	4,885.70
693332	03-Mar-2021	CITY OF MESA	82.00
693333	03-Mar-2021	ESPINOZA, MARISELA (R)	161.00
693334	03-Mar-2021	GO GET IT INVESTMENTS LLC	400.00
693335	03-Mar-2021	HOUSING AUTHORITY OF JOLIET	2,410.74
693336	03-Mar-2021	HUERTA, JUANITA	160.00
693337	03-Mar-2021	KING COUNTY HOUSING AUTHORITY	6,583.70
693338	03-Mar-2021	NICHOLS, SABRINA (R)	376.00
693339	03-Mar-2021	OROS, ARSENIO	65.00
693340	03-Mar-2021	PRIME TIME INC	5,501.00
693341	03-Mar-2021	SALT RIVER PROJECT	2,251.00
693342	03-Mar-2021	SAN DIEGO HOUSING COMMISSION	2,494.74
693343	03-Mar-2021	SCOTT COUNTY CDA	756.74
693344	10-Mar-2021	ACCIDENT LAW GROUP (R)	5.00
693345	10-Mar-2021	ALLIED UNIVERSAL SECURITY SERVICES	1,145.70
693346	10-Mar-2021	ALLIED UNIVERSAL SECURITY SERVICES	3,603.59
693347	10-Mar-2021	ALTERNATIVE MAINTENANCE SERVICE	250.00
693348	10-Mar-2021	AMERICAN FAMILY INSURANCE GROUP	10.00
693349	10-Mar-2021	AQUATIC CONSULTING & TESTING INC	4,710.00
693350	10-Mar-2021	ARIZONA ATTORNEY GENERAL	1,167.97
693351	10-Mar-2021	ARIZONA ELEVATOR SOLUTIONS INC	142.66
693352	10-Mar-2021	ARIZONA MATERIALS LLC	1,859.93
693353	10-Mar-2021	ARIZONA POWER AUTHORITY	3,177.13
693354	10-Mar-2021	ARIZONA PUBLIC SERVICE COMPANY	105.07
693355	10-Mar-2021	ARIZONA PUBLIC SERVICE COMPANY	2,643.70
693356	10-Mar-2021	ARRINGTON WATKINS ARCHITECTS, LLC	6,910.09
693357	10-Mar-2021	BAKER & TAYLOR INC	1,985.98
693358	10-Mar-2021	BOUND TREE MEDICAL LLC	3,861.86
693359	10-Mar-2021	BROOKSIE'S	52.74
693360	10-Mar-2021	BUESING CORPORATION	115.00
693361	10-Mar-2021	CASTELLANOS, KAREN AND FELIPE	4,690.00
693362	10-Mar-2021	CERNER CORPORATION	11,082.12
693363	10-Mar-2021	CHANDLER CHAMBER COMMUNITY FOUNDATION	998.00
693364	10-Mar-2021	CHILLER CITY CORP	1,463.00
693365	10-Mar-2021	COFFMAN ASSOCIATES INC	9,520.40
693366	10-Mar-2021	COMMERCIAL POOL REPAIR	10,755.30
693367	10-Mar-2021	COMPUTER AID, INC	35,422.13
693368	10-Mar-2021	COPPER STATE PAVEMENT SERVICES, INC	19,141.45
693369	10-Mar-2021	CORE & MAIN LP	52,536.29
693370	10-Mar-2021	COSTCO	197.52
693371	10-Mar-2021	DATA PROCESSING AIR CORPORATION	186.00
693372	10-Mar-2021	DESERT TOX, LLC	516.20
693373	10-Mar-2021	DIBBLE & ASSOCIATES CONSULTING ENGINEERS, INC	6,375.00
693374	10-Mar-2021	DIBBLE CM, LLC	26,975.00
693375	10-Mar-2021	DPC ENTERPRISES LP	42,082.84
693376	10-Mar-2021	OEHLER, DEBRA (R)	50.00
693377	10-Mar-2021	SALT RIVER PROJECT	1,372.73
693378	10-Mar-2021	EAR PROFESSIONAL AUDIO VIDEO	6,138.34

693379	10-Mar-2021	EAST VALLEY DISASTER SERVICES INC	10,644.65
693380	10-Mar-2021	EVEREST COMMUNICATIONS	1,593.00
693381	10-Mar-2021	FASTER ASSET SOLUTIONS	78,268.79
693382	10-Mar-2021	FORESITE DESIGN & CONSTRUCTION, INC	42,708.61
693383	10-Mar-2021	GRAINGER INC	369.39
693384	10-Mar-2021	GRAINGER INC	1,856.42
693385	10-Mar-2021	GUIDESOFT INC	158.52
693386	10-Mar-2021	HOFFMAN SOUTHWEST CORP	3,070.00
693387	10-Mar-2021	INTERWEST SAFETY SUPPLY LLC	351.32
693388	10-Mar-2021	ISO SERVICES, INC	25.00
693389	10-Mar-2021	KANOPY LLC	2,055.00
693390	10-Mar-2021	KNOCKABOUTS, THE	700.00
693391	10-Mar-2021	KWALL LLC	3,500.00
693392	10-Mar-2021	MARICOPA COUNTY DEPT OF	26,907.95
693393	10-Mar-2021	MATHESON TRI-GAS INC	281.00
693394	10-Mar-2021	MESA MARTIN LUTHER KING JR CELEBRATION COMMITTEE	4,500.00
693395	10-Mar-2021	MIDWEST TAPE	325.68
693397	10-Mar-2021	MUNICIPAL EMERGENCY SERVICES INC	6,981.62
693398	10-Mar-2021	NINYO & MOORE	3,314.50
693399	10-Mar-2021	NORTHERN ARIZONA CENTER FOR ENTREPRENEURSHIP AND TECHNOLOGY	20,833.33
693400	10-Mar-2021	NORTHSTAR COMMUNICATIONS INC	1,545.00
693401	10-Mar-2021	OTTO LOGISTICS LLC	6,444.42
693402	10-Mar-2021	OTW SAFETY	4,750.33
693403	10-Mar-2021	PRECISION SWEEPING SERVICES, LLC	175.00
693404	10-Mar-2021	PROJECT HOSTS INC	1,341.00
693405	10-Mar-2021	RED MOUNTAIN WOODWORKING	3,060.23
693406	10-Mar-2021	REGIONAL PUBLIC TRANS AUTHORITY-VALLEY METRO	124,180.67
693407	10-Mar-2021	RESENDEZ INJURY LAW GROUP PLLC (R)	10.00
693408	10-Mar-2021	RICOH USA INC	3,788.55
693409	10-Mar-2021	SAN TAN FORD	71,315.81
693410	10-Mar-2021	SECURITY TITLE AGENCY	100.00
693411	10-Mar-2021	SIERRA SUN LANDSCAPING LLC	19,460.00
693412	10-Mar-2021	SITUS REAL ESTATE GROUP, LLC	5,400.00
693413	10-Mar-2021	SOFT HANDS PRESSURE WASHING	868.00
693414	10-Mar-2021	SOUTHLAND ENVELOPE COMPANY INC	11,295.00
693415	10-Mar-2021	SOUTHWEST UMPIRES ASSOCIATION	3,172.00
693416	10-Mar-2021	SUN MECHANICAL CONTRACTING INC.	6,651.36
693417	10-Mar-2021	SWCA ENVIRONMENTAL CONSULTANTS	6,990.00
693418	10-Mar-2021	T-MOBILE USA	59.50
693419	10-Mar-2021	T2 PEST SERVICES	32.00
693420	10-Mar-2021	TRAVELERS INSURANCE (R)	40.00
693421	10-Mar-2021	UBM ENTERPRISE, INC	12,176.99
693422	10-Mar-2021	UNITED SITE SERVICES OF ARIZONA, INC.	151.30
693423	10-Mar-2021	UNTANGLE INC	4,320.00
693424	10-Mar-2021	WESTERN STATES FIRE PROTECTION	3,490.00
693425	10-Mar-2021	WILSON ENGINEERS LLC	4,445.20
693426	10-Mar-2021	YELLOWSTONE LANDSCAPE	21,598.06
693427	10-Mar-2021	ACE ASPHALT (R)	415.81
693428	10-Mar-2021	ADLER, SARAH (R)	12.30
693429	10-Mar-2021	AL MUTI, EMAD (R)	42.09
693430	10-Mar-2021	ALLEN, JAMAL (R)	172.36
693431	10-Mar-2021	ALLEN, SAMUEL (R)	60.21
693432	10-Mar-2021	ANDERSON, JESSICA (R)	30.86
693433	10-Mar-2021	BELL, BILLY (R)	88.75
693434	10-Mar-2021	BERGQUIST-HARPER, BESSIE (R)	16.79

693435	10-Mar-2021	BISHOP, JILL (R)	50.22
693436	10-Mar-2021	BOWER, KIMBERLY (R)	54.17
693437	10-Mar-2021	BRADY, TIMOTHY (R)	66.86
693438	10-Mar-2021	CAIN, DIANE (R)	44.65
693439	10-Mar-2021	CASTILLO, NINA (R)	56.24
693440	10-Mar-2021	CELAYA, ANTHONY (R)	54.33
693441	10-Mar-2021	CERVANTES, TAMI (R)	124.77
693442	10-Mar-2021	CHAVEZ, JOHN (R)	103.45
693443	10-Mar-2021	DAI, JIANMIN (R)	18.55
693444	10-Mar-2021	DAVIDSON, EMILY (R)	68.52
693445	10-Mar-2021	DAVIS, BRITTNEY (R)	44.07
693446	10-Mar-2021	DAVIS, MAYA (R)	35.62
693447	10-Mar-2021	DEAGOSTINE, HEATHER (R)	24.09
693448	10-Mar-2021	DEAN, JAMES (R)	24.56
693449	10-Mar-2021	DEROSSO, AUSTIN (R)	28.76
693450	10-Mar-2021	DUFFIELD, JEANNETTE (R)	76.07
693451	10-Mar-2021	EMERSON, ERIC (R)	31.41
693452	10-Mar-2021	FERGUSON, CHERYL (R)	12.24
693453	10-Mar-2021	FOOS, RICHARD (R)	74.30
693454	10-Mar-2021	GREGORIO, SERENA (R)	5.56
693455	10-Mar-2021	GURRAM, JYOTHI (R)	64.24
693456	10-Mar-2021	HARWOOD, JENNIFER (R)	35.86
693457	10-Mar-2021	HENDRICKSON, SHAYLA (R)	44.55
693458	10-Mar-2021	HENDRIX, MARGARET (R)	83.41
693459	10-Mar-2021	HERRIFORD, ROBERT (R)	79.63
693460	10-Mar-2021	HIGGINS, MICHAEL (R)	69.12
693461	10-Mar-2021	HODO, CASSANDRA (R)	10.58
693462	10-Mar-2021	HUNT, MARNIE (R)	29.91
693463	10-Mar-2021	JIANG, RICHARD (R)	11.46
693464	10-Mar-2021	KAGAN, JENNAFER (R)	34.69
693465	10-Mar-2021	KIGHT, DEBRA (R)	11.52
693466	10-Mar-2021	KLEPP, NORA (R)	78.05
693467	10-Mar-2021	KUNELLIS, RON (R)	242.00
693468	10-Mar-2021	LINNERSON, STEVEN (R)	22.50
693469	10-Mar-2021	LUTTRELL, LORI (R)	50.48
693470	10-Mar-2021	MACK, RICHARD (R)	75.77
693471	10-Mar-2021	MANGER, KAELA (R)	39.34
693472	10-Mar-2021	MATSON, RYAN (R)	12.03
693473	10-Mar-2021	MCABEE, RYAN (R)	35.63
693474	10-Mar-2021	MCCOY, DOUGLAS (R)	73.82
693475	10-Mar-2021	MONTALVO, DAVID (R)	40.84
693476	10-Mar-2021	MONTES, BRIANNA (R)	14.05
693477	10-Mar-2021	MOSAIC CONSTRUCTION (R)	884.50
693478	10-Mar-2021	NEWBY, ALEXENDER (R)	44.70
693479	10-Mar-2021	PADILLA, IVAN (R)	34.45
693480	10-Mar-2021	POWELL, STEPHANIE (R)	9.78
693481	10-Mar-2021	QUESADA, JACQUELINE (R)	27.01
693482	10-Mar-2021	RITZERT, NANCY (R)	5.09
693483	10-Mar-2021	ROBBINS, WENDY (R)	120.00
693484	10-Mar-2021	SCHOLLMEYER, AUSTIN (R)	99.86
693485	10-Mar-2021	SGARBOSSA PROPERTIES LLC (R)	52.80
693486	10-Mar-2021	SHARP SABER (R)	92.63
693487	10-Mar-2021	SMITH, MARK (R)	20.98
693488	10-Mar-2021	STANLEY, TRINA (R)	37.71
693489	10-Mar-2021	STAUBER, DANIEL (R)	18.08

693490	10-Mar-2021	THOMPSON, ASHLEY (R)	45.31
693491	10-Mar-2021	TOMPKINS, RYAN (R)	36.36
693492	10-Mar-2021	TUCKER, MATTHEW (R)	14.94
693493	10-Mar-2021	WALL, SCOTT (R)	32.43
693494	10-Mar-2021	WATERS, THOMAS (R)	44.96
693495	10-Mar-2021	WEST, JACK (R)	77.89
693496	10-Mar-2021	WU, ZHIHONG (R)	37.34
693497	11-Mar-2021	ELITE SPORTS BUILDERS	4,174.00
693498	11-Mar-2021	A & V VENTURES LLC	1,375.00
693499	11-Mar-2021	APARTMENT HUNTERS	133.00
693500	11-Mar-2021	BROWN, JACK	1,000.00
693501	11-Mar-2021	CITY OF MESA	2,681.48
693502	11-Mar-2021	CITY OF MESA	265.00
693503	11-Mar-2021	HOUSING AUTHORITY OF THE CITY OF BELLINGHAM	8,951.70
693504	11-Mar-2021	SALT RIVER PROJECT	187.00
693505	11-Mar-2021	SUNDIAL REAL ESTATE LC	46.00
693506	17-Mar-2021	A MIND FOR DETAIL INC	3,295.00
693507	17-Mar-2021	ADAPTIVE ARCHITECTS, INC	4,052.00
693508	17-Mar-2021	ADVANCED TRAFFIC PRODUCTS INC	24,502.47
693509	17-Mar-2021	AFLAC	137.67
693510	17-Mar-2021	ALLIED UNIVERSAL SECURITY SERVICES	1,041.50
693511	17-Mar-2021	ALPHA CLEANING COMPANY (R)	45.00
693512	17-Mar-2021	ALTERNATIVE MAINTENANCE SERVICE	250.00
693513	17-Mar-2021	APL ACCESS & SECURITY	70.00
693514	17-Mar-2021	ARIZONA ELEVATOR SOLUTIONS INC	5,145.58
693515	17-Mar-2021	ARIZONA OFFICE TECHNOLOGIES	132.19
693516	17-Mar-2021	ARIZONA POLICE PSYCHOLOGY PLLC	900.00
693517	17-Mar-2021	ARIZONA PUBLIC SERVICE COMPANY	235.37
693518	17-Mar-2021	ARIZONA TRUCK & COACH LLC	2,776.04
693519	17-Mar-2021	BAKER & TAYLOR INC	4,232.75
693520	17-Mar-2021	BC CRANE, INC	300.00
693521	17-Mar-2021	BECKMAN, MAX	450.00
693522	17-Mar-2021	BECKMAN, MAX	300.00
693523	17-Mar-2021	BLOOM, CLAUDIA	400.00
693524	17-Mar-2021	BOUND TREE MEDICAL LLC	2,340.40
693525	17-Mar-2021	CANNON-BUSH, DENISE (R)	70.00
693526	17-Mar-2021	CENTURYLINK	17,755.91
693527	17-Mar-2021	CHANDLER AIRPORT CENTER CAC, INC (R)	69,443.88
693528	17-Mar-2021	CHANDLER CHAMBER COMMUNITY FOUNDATION	883.00
693529	17-Mar-2021	CHANDLER REGIONAL MEDICAL CENTER	10.00
693530	17-Mar-2021	CLARK, ADAM	400.00
693531	17-Mar-2021	CLARK, ADAM	300.00
693532	17-Mar-2021	CONIAM, SCOTT M	66.50
693533	17-Mar-2021	COPPER STATE PAVEMENT SERVICES, INC	33,507.84
693534	17-Mar-2021	CORE & MAIN LP	2,433,833.05
693535	17-Mar-2021	COX COMMUNICATIONS INC	3,160.00
693536	17-Mar-2021	COX COMMUNICATIONS INC	6.28
693537	17-Mar-2021	CRAWFORD MECHANICAL SERVICES	1,273.51
693538	17-Mar-2021	DAWSON, BENNETTE R	140.00
693539	17-Mar-2021	DBA CONSTRUCTION	3,519.61
693540	17-Mar-2021	DCS CONTRACTING INC	390,047.89
693541	17-Mar-2021	DECA SOUTHWEST	7,479.00
693542	17-Mar-2021	DEPARTMENT OF PUBLIC WORKS	19.80
693543	17-Mar-2021	DIBBLE & ASSOCIATES CONSULTING ENGINEERS, INC	1,846.22
693544	17-Mar-2021	DIETERICH ARCHITECTURAL GROUP INC	3,815.00

693545	17-Mar-2021	DROSSI, ANGEL (R)	1,847.05
693546	17-Mar-2021	DYNAMISM, INC	6,710.40
693547	17-Mar-2021	OPTUM	3,638.81
693548	17-Mar-2021	SOUTHWEST GAS CORP	7,270.63
693549	17-Mar-2021	SREDI, CASSIE (R)	46.25
693550	17-Mar-2021	TORLONI, ANTONIO SERGIO (R)	392.74
693551	17-Mar-2021	ENVIRONMENTAL DRAIN & ODOR CONTROL SERVICES LLC	1,105.00
693552	17-Mar-2021	FACTORY MOTOR PARTS COMPANY	118.62
693553	17-Mar-2021	FLYERS ENERGY LLC	16,568.31
693554	17-Mar-2021	FORESITE DESIGN & CONSTRUCTION, INC	187,525.20
693555	17-Mar-2021	FSL HOME IMPROVEMENTS	13,683.12
693556	17-Mar-2021	GOUDELIS, IOANNIS	450.00
693557	17-Mar-2021	GOUDELIS, IOANNIS	450.00
693558	17-Mar-2021	GRAINGER INC	1,112.68
693559	17-Mar-2021	GRAINGER INC	12,828.20
693560	17-Mar-2021	GROUNDS CONTROL LLC	93,765.37
693561	17-Mar-2021	GUIDESOFT INC	475.56
693562	17-Mar-2021	HACH COMPANY	9,842.21
693563	17-Mar-2021	HDR ENGINEERING INC	3,388.50
693564	17-Mar-2021	HEINFELD, MEECH & CO PC	6,197.50
693565	17-Mar-2021	HOLLAND, NICHOLAS (R)	21.95
693566	17-Mar-2021	HOM, INC	1,296.60
693567	17-Mar-2021	KELLER ELECTRICAL INDUSTRIES INC	380.00
693568	17-Mar-2021	LEA-ARCHITECTS, LLC	2,546.63
693569	17-Mar-2021	LEDERMAN, BETH	600.00
693570	17-Mar-2021	LEVEL 3 COMMUNICATIONS LLC	2,368.57
693571	17-Mar-2021	LEVEL 3 COMMUNICATIONS LLC	2,465.92
693572	17-Mar-2021	LEXIS NEXIS (R)	5.00
693573	17-Mar-2021	LG MUSIC	600.00
693574	17-Mar-2021	LIGHTING UNLIMITED INC	360.55
693575	17-Mar-2021	LOGOCOMOTION	167.09
693576	17-Mar-2021	LYFT INC	1,574.34
693577	17-Mar-2021	MARICOPA ASSOC OF GOVERNMENTS	4,046.84
693578	17-Mar-2021	MCCLURE, JANE (R)	10.00
693579	17-Mar-2021	MIDWEST TAPE	112.11
693580	17-Mar-2021	MUNICIPAL EMERGENCY SERVICES INC	194.03
693581	17-Mar-2021	NICOMIA	2,404.16
693582	17-Mar-2021	NINA STAKE CO INC	421.69
693583	17-Mar-2021	NTT AMERICA SOLUTIONS, INC	493,551.30
693584	17-Mar-2021	ODYSSEY FOODS, LLC (R)	45.00
693585	17-Mar-2021	OTTO LOGISTICS LLC	5,126.45
693586	17-Mar-2021	OTW SAFETY	39,979.23
693587	17-Mar-2021	OZUNA, MICHAEL	375.00
693588	17-Mar-2021	OZUNA, MICHAEL	525.00
693589	17-Mar-2021	PANCRAZI, PETE	450.00
693590	17-Mar-2021	PANCRAZI, PETE	500.00
693591	17-Mar-2021	PANTHEON SYSTEMS, INC	32,461.44
693592	17-Mar-2021	PB&J CREATVE LLC	2,520.00
693593	17-Mar-2021	PETRICH, MARY	600.00
693594	17-Mar-2021	PINON FAMILY MEDICINE	700.00
693595	17-Mar-2021	PINON FAMILY MEDICINE	200.00
693596	17-Mar-2021	PIPELINE SERVICES INC	6,298.80
693597	17-Mar-2021	PLAN ET COMMUNITIES	11,494.00
693598	17-Mar-2021	PRECISION SWEEPING SERVICES, LLC	1,675.23
693599	17-Mar-2021	PROTEA MEDICAL CENTER (R)	437.20

693600	17-Mar-2021	ASSOCIATED FENCE	20,789.44
693601	17-Mar-2021	BOBBIE, ROBIN G	353.50
693602	17-Mar-2021	LARSON-WILDE, DONNA	375.00
693603	17-Mar-2021	NESTLE PURE LIFE	58.26
693604	17-Mar-2021	NEW SQUARE, LLC	190,476.00
693605	17-Mar-2021	REPUBLIC SERVICES INC	608.70
693606	17-Mar-2021	REPUBLIC SERVICES INC	6,052.50
693607	17-Mar-2021	REYES & SONS LANDSCAPING LLC	470.00
693608	17-Mar-2021	RICOH USA INC	1,052.51
693609	17-Mar-2021	ROCHA, LLC	367.54
693610	17-Mar-2021	SAFELITE AUTOGLASS CORP	704.05
693611	17-Mar-2021	SEALY MEDIA	812.50
693612	17-Mar-2021	SENERGY PETROLEUM, LLC	6,154.14
693613	17-Mar-2021	SIMPLEVIEW INC	10,000.00
693614	17-Mar-2021	SKYLINE WINDOW CLEANING	390.00
693615	17-Mar-2021	SMITH, CHARLES	300.00
693616	17-Mar-2021	SMITH, CHARLES	450.00
693617	17-Mar-2021	SNAPDRAGON ENTERPRISES LLC	4,995.00
693618	17-Mar-2021	STANLEY CONSULTANTS INC	23,258.90
693619	17-Mar-2021	SUN MECHANICAL CONTRACTING INC.	39,655.00
693620	17-Mar-2021	SUN VALLEY CHURCH (R)	6,549.00
693621	17-Mar-2021	SUPERIOR SUPPLY INC	29,388.95
693622	17-Mar-2021	T-MOBILE USA	2,495.57
693623	17-Mar-2021	T2 PEST SERVICES	96.00
693624	17-Mar-2021	THATCHER COMPANY OF ARIZONA	13,414.84
693625	17-Mar-2021	THE PEACEFUL HOME LLC (R)	45.00
693626	17-Mar-2021	THE W-T GROUP, LLC	5,000.00
693627	17-Mar-2021	TIMBOS SPICE (R)	45.00
693628	17-Mar-2021	TORUS GROUP	1,300.00
693629	17-Mar-2021	TRAFFICADE SERVICE INC	2,066.26
693630	17-Mar-2021	UTAH CAMERON CONSTRUCTION INC (R)	33.75
693631	17-Mar-2021	vCORE TECHNOLOGY PARTNERS LLC	3,500.00
693632	17-Mar-2021	VINCON ENGINEERING CONSTRUCTION LLC	336,944.90
693633	17-Mar-2021	VOIANCE LANGUAGE SERVICES LLC	422.83
693634	17-Mar-2021	WATER & ENERGY SYSTEMS TECHNOLOGY INC	2,306.75
693635	17-Mar-2021	WELINK LLC (R)	200.00
693636	17-Mar-2021	WESTERN STATES FIRE PROTECTION	75.00
693637	17-Mar-2021	WORKGROUP CONNECTIONS INC	30,300.00
693638	17-Mar-2021	XS BAGGAGE	639.95
693639	17-Mar-2021	BAILEY, JOYCE (R)	37.10
693640	17-Mar-2021	BODINE, TRACE (R)	56.17
693641	17-Mar-2021	CUNNINGHAM, JACQUIE (R)	12.92
693642	17-Mar-2021	DAHL, CECILIA (R)	83.41
693643	17-Mar-2021	FIELDS, SHAWNLEI (R)	20.68
693644	17-Mar-2021	GARRINGER, BRADY (R)	41.62
693645	17-Mar-2021	HIGGINS, MICHAEL (R)	6.40
693646	17-Mar-2021	HODSON, MATTHEW (R)	19.56
693647	17-Mar-2021	HOLLENSEN, CYNTHIA (R)	26.73
693648	17-Mar-2021	LI, XIAOJUN (R)	90.41
693649	17-Mar-2021	LOVELL, AMANDA (R)	111.32
693650	17-Mar-2021	MURPHY, RYAN (R)	21.69
693651	17-Mar-2021	MURTAUGH, SEAN (R)	10.31
693652	17-Mar-2021	NEELY, ELIZABETH (R)	40.10
693653	17-Mar-2021	PENG, ZHILIANG (R)	48.62
693654	17-Mar-2021	PEREZ, MANUEL (R)	54.35

693655	17-Mar-2021	R FIRST ONE LLC (R)	90.65
693656	17-Mar-2021	RAMIREZ, CHRISTIAN (R)	22.22
693657	17-Mar-2021	SILLS, VALERIE (R)	5.17
693658	17-Mar-2021	WATSON, JESSICA (R)	31.99
693659	17-Mar-2021	1112 NORTH CALIFORNIA STREET PROPERTY LLC	707.00
693660	18-Mar-2021	HUMES, SAMUEL L	52.00
693661	18-Mar-2021	JAROSIK, CHRISTINE M	23.31
693662	18-Mar-2021	KELBER, SHANE R	52.00
693663	18-Mar-2021	LOPEZ, CASEY G	52.00
693664	18-Mar-2021	PURSLEY, ELISA D	71.64
693665	18-Mar-2021	SUNRISE ENGINEERING INC	3,950.00
693666	18-Mar-2021	UNDERWOOD, JASON W	52.00
693667	24-Mar-2021	CORDOVA, ROMMEL	100.00
693668	24-Mar-2021	FLORENCE, RICHARD	3,500.00
693669	24-Mar-2021	NATIONAL LAW ENFORCEMENT SUPPLY AND RESCUE ESSENTIALS	4,949.76
693670	24-Mar-2021	RDO EQUIPMENT COMPANY	92.13
693671	24-Mar-2021	REGAL FENCE LLC	3,500.00
693672	24-Mar-2021	RICOH USA INC	3,098.17
693673	24-Mar-2021	SAFELITE AUTOGLASS CORP	2,322.29
693674	24-Mar-2021	SECURITY TITLE AGENCY	500.00
693675	24-Mar-2021	SOUTHERN TIRE MART, LLC	3,760.75
693676	24-Mar-2021	SOUTHWEST UMPIRES ASSOCIATION	2,470.00
693677	24-Mar-2021	SPRINGSHARE LLC	2,748.00
693678	24-Mar-2021	SUEZ WTS USA, INC	11,969.90
693679	24-Mar-2021	SUMMIT HEALTH MEDICAL	50.00
693680	24-Mar-2021	SURVEILLANCE SECURITY INC	216.00
693681	24-Mar-2021	T2 PEST SERVICES	32.00
693682	24-Mar-2021	THATCHER COMPANY OF ARIZONA	30,901.55
693683	24-Mar-2021	TRAFFICADE SERVICE INC	754.20
693684	24-Mar-2021	TREELAND LIMITED PARTNERSHIP	14,850.00
693685	24-Mar-2021	UBM ENTERPRISE, INC	667.07
693686	24-Mar-2021	USP TECHNOLOGIES	5,330.00
693687	24-Mar-2021	WESCO DISTRIBUTION, INC	15,909.90
693688	24-Mar-2021	WESTERN STATES FIRE PROTECTION	375.00
693689	24-Mar-2021	WUNDERLICH-MALEC SYSTEMS, INC	7,980.00
693690	24-Mar-2021	YICHUN, XU (R)	7.09
693691	24-Mar-2021	AGRAWAL, VISHAL (R)	99.77
693692	24-Mar-2021	ALLRED, ANTHONY (R)	11.34
693693	24-Mar-2021	BALLARD, JAMES (R)	68.77
693694	24-Mar-2021	BAZAN, MONROY YOSELYN (R)	36.74
693695	24-Mar-2021	BENEDICT, LAWRENCE (R)	65.48
693696	24-Mar-2021	BORCHER, ANGELA (R)	46.80
693697	24-Mar-2021	BRYNER, FEDERICO (R)	42.96
693698	24-Mar-2021	CARRION-ROMAN, JOANNE (R)	55.00
693699	24-Mar-2021	CHANDLER, GEORGE (R)	102.22
693700	24-Mar-2021	CHILD TIME CARE (R)	10.00
693701	24-Mar-2021	CIBOCI, ALEX (R)	51.97
693702	24-Mar-2021	CLAUDE, JERRY (R)	43.84
693703	24-Mar-2021	CRUZ & ASSOCIATES (R)	5.00
693704	24-Mar-2021	DT CHANDLER PROPERTY LLC (R)	133.97
693705	24-Mar-2021	DUERMIT, NATALIE (R)	46.98
693706	24-Mar-2021	ELLIS, NICHOLAS (R)	39.67
693707	24-Mar-2021	FERNANDEZ, SAVANNAH (R)	67.71
693708	24-Mar-2021	FINCH, BRAD (R)	5.66
693709	24-Mar-2021	GARCIA, ESLEN (R)	8.44

693710	24-Mar-2021	GEIST, CYNTHIA (R)	65.27
693711	24-Mar-2021	GILDAY, JASON (R)	9.65
693712	24-Mar-2021	GOLD COAST REALTY (R)	14.35
693713	24-Mar-2021	HALL, COURTNEY (R)	37.25
693714	24-Mar-2021	HAMBICKI, KEVIN (R)	45.23
693715	24-Mar-2021	HAYES, LATISHA (R)	8.32
693716	24-Mar-2021	HEFEIDA, OBAIDALLA (R)	21.77
693717	24-Mar-2021	HEWAVITHANA, THUSHARA (R)	8.97
693718	24-Mar-2021	HUBBARD, JORDAN AND GARRETT (R)	31.89
693719	24-Mar-2021	INTEGRITY PAIN & WELLNESS	22.40
693720	24-Mar-2021	JACKSON, JOHN (R)	25.93
693721	24-Mar-2021	KIM, SUNG JOO (R)	24.33
693722	24-Mar-2021	KOLIBAS, ARIELLE (R)	48.64
693723	24-Mar-2021	LADWIG, BARBARA (R)	80.41
693724	24-Mar-2021	LANSKY, KAREN (R)	74.49
693725	24-Mar-2021	LAWSON, MICHAEL (R)	18.42
693726	24-Mar-2021	LU, VIEN (R)	28.42
693727	24-Mar-2021	MANN, POLLY (R)	27.91
693728	24-Mar-2021	MCCABE, COLLEEN (R)	93.96
693729	24-Mar-2021	MONDS, SARA (R)	64.10
693730	24-Mar-2021	PARSONS, KIMBERLY (R)	39.27
693731	24-Mar-2021	PHANTOM REALTY INC (R)	41.85
693732	24-Mar-2021	SADOWSKI, JENNIFER (R)	70.93
693733	24-Mar-2021	SAN TAN I LIMITED PARTNERSHIP (R)	12,823.37
693734	24-Mar-2021	SKINNER, VANCE (R)	43.11
693735	24-Mar-2021	STENSON, SUSAN (R)	26.50
693736	24-Mar-2021	SUTTON, TYLER (R)	57.57
693737	24-Mar-2021	TADISCA, JENNIFER (R)	11.23
693738	24-Mar-2021	THOMPSON, MATT (R)	39.86
693739	24-Mar-2021	TIKKA, JULIE (R)	70.88
693740	24-Mar-2021	WEST, ELIZABETH (R)	75.86
693741	24-Mar-2021	WISTER, WILLIAM (R)	75.86
693742	24-Mar-2021	ZIENTA, YVONNE (R)	32.69
693743	24-Mar-2021	A & M NUT & BOLT	106.50
693744	24-Mar-2021	ALLARD COLLISION	5,141.72
693745	24-Mar-2021	ALLIED UNIVERSAL SECURITY SERVICES	1,145.70
693746	24-Mar-2021	ARCADIS US INC	19,138.50
693747	24-Mar-2021	ARIZONA DEPT OF TRANSPORTATION	10,000.00
693748	24-Mar-2021	ARIZONA PUBLIC SERVICE COMPANY	12,600.28
693749	24-Mar-2021	ARIZONA TRUCK & COACH LLC	9,159.50
693750	24-Mar-2021	ARIZONA WASTEWATER INDUSTRIES INC	363.23
693751	24-Mar-2021	BAKER & TAYLOR INC	5,337.96
693752	24-Mar-2021	BRIDGESTONE HOSEPOWER LLC	80.52
693753	24-Mar-2021	BRINKS INCORPORATED	20,855.00
693754	24-Mar-2021	BUESING CORPORATION	170.00
693755	24-Mar-2021	CERNER CORPORATION	622.11
693756	24-Mar-2021	CHANDLER CHAMBER COMMUNITY FOUNDATION	1,171.00
693757	24-Mar-2021	CHANDLER CHAMBER OF COMMERCE	5,000.00
693758	24-Mar-2021	CHUSKA CONSULTING LLC	1,420.00
693759	24-Mar-2021	COM SENSE INC	2,480.00
693760	24-Mar-2021	COMMERCIAL POOL REPAIR	10,319.86
693761	24-Mar-2021	CORE & MAIN LP	14,724.36
693762	24-Mar-2021	DANIEL D SMITH & ASSOCIATES	66.00
693763	24-Mar-2021	DAVE BANG AND ASSOCIATES	3,294.73
693765	24-Mar-2021	DAY AUTO SUPPLY, INC	1,947.98

693766	24-Mar-2021	DEARREADER.COM	500.00
693767	24-Mar-2021	DECA SOUTHWEST	2,660.67
693768	24-Mar-2021	DEGAN CONSTRUCTION LLC	24,129.00
693769	24-Mar-2021	DOOLEY ENTERPRISES INC.	17,389.87
693770	24-Mar-2021	DPC ENTERPRISES LP	101,099.90
693771	24-Mar-2021	MACE BECKSON, M.D., A PROFESSIONAL CORPORATION	517.50
693772	24-Mar-2021	SALT RIVER PROJECT	32.68
693773	24-Mar-2021	SAN MARCOS JUSTICE COURT	250.00
693774	24-Mar-2021	SOUTH MOUNTAIN JUSTICE COURT	500.00
693775	24-Mar-2021	SOUTHWEST GAS CORP	43.28
693776	24-Mar-2021	SURPRISE CITY COURT	250.00
693777	24-Mar-2021	BRESNAHAN-BZDOK, PATRICIA A (R)	150.00
693778	24-Mar-2021	EAR PROFESSIONAL AUDIO VIDEO	1,536.26
693779	24-Mar-2021	EARNHARDT	40.32
693780	24-Mar-2021	EARNHARDT	1,947.75
693781	24-Mar-2021	EARNHARDT CHEVROLET	5,735.53
693782	24-Mar-2021	EARTHPLANTER	2,169.00
693783	24-Mar-2021	FACTORY MOTOR PARTS COMPANY	1,664.97
693784	24-Mar-2021	FLYERS ENERGY LLC	702.78
693785	24-Mar-2021	FREIGHTLINER OF ARIZONA LLC	171.32
693786	24-Mar-2021	GARNER, JAMES (R)	15.00
693787	24-Mar-2021	GILA RIVER INDIAN COMMUNITY	4,396.89
693788	24-Mar-2021	GILA RIVER INDIAN COMMUNITY UTILITY AUTHORITY	20,174.13
693789	24-Mar-2021	GO AZ MOTORCYCLES	2,865.26
693790	24-Mar-2021	GRAINGER INC	3,736.67
693791	24-Mar-2021	GREKOWICZ, JOSEPH (R)	50.00
693792	24-Mar-2021	GROUNDS CONTROL LLC	2,092.66
693793	24-Mar-2021	GUIDESOFT INC	475.56
693794	24-Mar-2021	HEINFELD, MEECH & CO PC	4,824.00
693795	24-Mar-2021	HOFFMAN SOUTHWEST CORP	29,274.81
693796	24-Mar-2021	HUNT, SAMUEL KARL	135.06
693797	24-Mar-2021	INTERSTATE BATTERY SYSTEM OF PHX	772.96
693798	24-Mar-2021	INTERWEST SAFETY SUPPLY LLC	6,342.24
693799	24-Mar-2021	JR'S SHOES & BOOTS	527.15
693800	24-Mar-2021	KFT FIRE TRAINER LLC	14,733.00
693801	24-Mar-2021	LANDPRO VALUATION LLC	2,000.00
693802	24-Mar-2021	LANGUAGE CONNECTION	190.00
693803	24-Mar-2021	LEA-ARCHITECTS, LLC	1,967.74
693804	24-Mar-2021	LEFEVRE, DANIEL	226.12
693805	24-Mar-2021	LITTLER MENDELSON PC	924.00
693806	24-Mar-2021	MATHESON TRI-GAS INC	297.28
693807	24-Mar-2021	MIDWEST TAPE	269.86
693808	24-Mar-2021	MOORE, LISA	497.20
693809	24-Mar-2021	MUNICIPAL EMERGENCY SERVICES INC	749.82
693810	24-Mar-2021	NESCON, LLC	293,185.26
693811	24-Mar-2021	NFRA INC	11,438.18
693812	24-Mar-2021	NORTH AMERICAN LUBRICANTS COMPANY	4,144.74
693813	24-Mar-2021	NORTHSTAR COMMUNICATIONS INC	40,440.00
693814	24-Mar-2021	NTT AMERICA SOLUTIONS, INC	223,031.44
693815	24-Mar-2021	OLS RESTORATION, INC	2,650.00
693816	24-Mar-2021	OTTO LOGISTICS LLC	22,861.46
693817	24-Mar-2021	PATHOLOGY SPECIALISTS OF ARIZONA, LLP	25.00
693818	24-Mar-2021	PITNEY BOWES INC	340.76
693819	24-Mar-2021	PRECISION GLASS & TINTING	300.00
693820	24-Mar-2021	PREMIER ENGINEERING CORP	16,813.33

693821	24-Mar-2021	SEQUEL POLYGRAPH	6,845.00
693822	25-Mar-2021	ARIZONA COLLEGE PREP (ERIE CAMPUS) (R)	142.80
693823	25-Mar-2021	BALDWIN, KRISTILYN D	29.94
693824	25-Mar-2021	GRIFFITHS, CHARLES J	38.00
693825	25-Mar-2021	KELBER, SHANE R	38.00
693826	25-Mar-2021	SAGNELLA, THOMAS R	38.00
693827	25-Mar-2021	WAGNER, BRIAN S	33.69
693828	25-Mar-2021	A & V VENTURES LLC	400.00
693829	25-Mar-2021	AHMED, MARIAN	383.86
693830	25-Mar-2021	CARDENAS, ALBERTO	325.86
693831	25-Mar-2021	CLEAVER, RITA	508.00
693832	25-Mar-2021	MARTHA, DELILA (R)	664.00
693833	25-Mar-2021	MARTINEZ, LETICIA (R)	308.86
693834	25-Mar-2021	MORRIS, LATASHA	6,565.85
693835	25-Mar-2021	PARK TOWER CHANDLER, LLC	210.00
693839	29-Mar-2021	2013-1 IH BORROWER LP	3,553.00
693840	29-Mar-2021	2017-1 IH BORROWER LP	4,959.00
693841	29-Mar-2021	2017-2 IH BORROWER LP	502.00
693842	29-Mar-2021	2018-2 IH BORROWER LP	1,341.00
693843	29-Mar-2021	A & V VENTURES LLC	1,375.00
693844	29-Mar-2021	AHMETOVIC, AMILA	1,600.00
693845	29-Mar-2021	APARTMENT HUNTERS	4,438.00
693846	29-Mar-2021	ARCHES AT HIDDEN CREEK	1,418.00
693847	29-Mar-2021	BENTZ, CHRISTINA A	687.00
693848	29-Mar-2021	BREWER & STRATTON PROPERTY MANAGEMENT LLC	3,094.00
693849	29-Mar-2021	BROWN, JACK	1,000.00
693850	29-Mar-2021	CH REALTY VII-TH MHC CHANDLER WISHING WELL, LLC	456.00
693851	29-Mar-2021	DENALI REAL ESTATE LLC	2,083.00
693852	29-Mar-2021	DESERT WIDE PROPERTIES INC.	475.00
693853	29-Mar-2021	DO, HUNG VAN	1,128.00
693854	29-Mar-2021	DWIGHT SCHRUTE HOLDINGS LLC	1,226.00
693855	29-Mar-2021	FARNSWORTH REALTY & MANAGEMENT	1,534.00
693856	29-Mar-2021	GANI, OSAMA S	1,346.00
693857	29-Mar-2021	GEDDAM, PRIYABRUNDA	586.00
693858	29-Mar-2021	GREAT HOMES REALTY, LLC	950.00
693859	29-Mar-2021	GREENTREE PLACE APARTMENTS	1,687.00
693860	29-Mar-2021	HAMMACK, PAULA	1,377.00
693861	29-Mar-2021	HOMETREND PROPERTY MANAGEMENT & REAL ESTATE INC	961.00
693862	29-Mar-2021	HUERTA, JUANITA	160.00
693863	29-Mar-2021	J & B INVESTMENT	1,114.00
693864	29-Mar-2021	LIFEWELL BEHAVIORAL WELLNESS	848.00
693865	29-Mar-2021	LIM, NIMUL	619.00
693866	29-Mar-2021	LYNN, DANNY	900.00
693867	29-Mar-2021	NELSEN, DON E.	972.00
693868	29-Mar-2021	NOMA GROUP INC	1,488.00
693869	29-Mar-2021	NXRT FAIRWAYS LLC	5,357.00
693870	29-Mar-2021	ON Q PROPERTY MANAGEMENT	1,706.00
693871	29-Mar-2021	ONE WAY HOMES, LLC	1,165.00
693872	29-Mar-2021	OROS, ARSENIO	65.00
693873	29-Mar-2021	PARK TOWER CHANDLER, LLC	1,878.00
693874	29-Mar-2021	PARKER, DIXIE L.	530.00
693875	29-Mar-2021	PARKER, DIXIE L.	592.00
693876	29-Mar-2021	PRIME TIME INC	1,496.00
693877	29-Mar-2021	PROPERTY PLUS USA	677.00
693878	29-Mar-2021	PRS PROPERTY MANAGEMENT	1,352.00

693879	29-Mar-2021	REALTY EXECUTIVES, AN ARIZONA CORP	1,421.00
693880	29-Mar-2021	ROBERTS, CAROL YVONNE	881.00
693881	29-Mar-2021	ROBSON APARTMENTS LLC	467.00
693882	29-Mar-2021	RUVOLO, CHARLES OR LAURIE	741.00
693883	29-Mar-2021	SAISSAN, JOHN	626.00
693884	29-Mar-2021	SCREMIN FAMILY LTD	861.00
693885	29-Mar-2021	SECURED EQUITIES	1,004.00
693886	29-Mar-2021	SUN, HONGXLA	1,495.00
693887	29-Mar-2021	SUNDIAL REAL ESTATE	505.00
693888	29-Mar-2021	SUNDIAL REAL ESTATE LC	831.00
693889	29-Mar-2021	SUNDIAL REAL ESTATE LC	801.00
693890	29-Mar-2021	TEAM SIZZLE	1,100.00
693891	29-Mar-2021	THE HOUSING PROFESSIONALS LLC	2,452.00
693892	29-Mar-2021	THR PHOENIX LP	3,090.00
693893	29-Mar-2021	THR PROPERTY BORROWER LP	2,183.00
693894	29-Mar-2021	TRADELANDS LLC	1,478.00
693895	29-Mar-2021	TRAN, TOM B	1,011.00
693896	29-Mar-2021	VISTA ASSET COMPANY LLC	2,723.00
693897	29-Mar-2021	VISTA STAR COMPANY, LLC	4,292.00
693898	29-Mar-2021	WALTON ENTERPRISES LLC	573.00
693899	29-Mar-2021	WORLD CLASS PROPERTIES	364.00
693900	29-Mar-2021	WREF	12,512.00
693901	29-Mar-2021	WREF GREENTREE PLACE, LP	9,078.00
693902	29-Mar-2021	ZHENG, SHAO MEI	1,400.00
693903	29-Mar-2021	10615 W CAMPBELL LLC	915.00
693904	29-Mar-2021	1112 NORTH CALIFORNIA STREET PROPERTY LLC	812.00
693905	29-Mar-2021	1GPA	653.00
693906	31-Mar-2021	NESTLE PURE LIFE	2,752.19
693907	31-Mar-2021	QUALWAYS LLC (R)	45.00
693908	31-Mar-2021	REPUBLIC SERVICES INC	1,403.23
693909	31-Mar-2021	RICOH USA INC	127.21
693910	31-Mar-2021	RKS PLUMBING & MECHANICAL INC	32,851.12
693911	31-Mar-2021	RUBIN LAW, PLC	370.00
693912	31-Mar-2021	RYAN HERCO PRODUCTS CORP	8,888.21
693913	31-Mar-2021	SAFELITE AUTOGLASS CORP	301.77
693914	31-Mar-2021	SALT RIVER PROJECT	24.06
693915	31-Mar-2021	SENTINEL TECHNOLOGIES	32,462.56
693916	31-Mar-2021	SOLOMON, WAYNE S	6,801.34
693917	31-Mar-2021	SOUTHERN TIRE MART, LLC	6,473.25
693918	31-Mar-2021	SPINITAR	7,133.00
693919	31-Mar-2021	SPORTS BLING & THINGS	1,344.12
693920	31-Mar-2021	SUEZ WTS USA, INC	9,137.70
693921	31-Mar-2021	T-MOBILE USA	4,403.90
693922	31-Mar-2021	THATCHER COMPANY OF ARIZONA	4,459.73
693923	31-Mar-2021	TRANE	3,827.00
693924	31-Mar-2021	TRINITY CONCESSIONS LLC (R)	45.00
693925	31-Mar-2021	TRIPLEX TRAINING LLC	1,950.00
693926	31-Mar-2021	UNION PACIFIC RAILROAD COMPANY	1,842.46
693927	31-Mar-2021	UNITED SITE SERVICES OF ARIZONA, INC.	151.30
693928	31-Mar-2021	UNITED SITE SERVICES OF ARIZONA, INC.	184.37
693929	31-Mar-2021	UNIVERSAL POLICE SUPPLY CO	3,161.50
693930	31-Mar-2021	VINCON ENGINEERING CONSTRUCTION LLC	3,965.78
693931	31-Mar-2021	VIRAMONTES, FRANCES	7,800.00
693932	31-Mar-2021	WESTERN STATES FIRE PROTECTION	4,725.39
693933	31-Mar-2021	WILSON ENGINEERS LLC	305,687.90

693934	31-Mar-2021	WITTE LIGHTING SERVICES & REPAIR, LLC	1,037.77
693935	31-Mar-2021	YOLO'S AUTHENTIC MEXICAN (R)	33.75
693936	31-Mar-2021	ACUNA, AMADO (R)	294.35
693937	31-Mar-2021	ALSILAWI, IVAN (R)	9.54
693938	31-Mar-2021	ANDERSON, JAMILLAH (R)	32.26
693939	31-Mar-2021	BROWN, JULIA (R)	40.57
693940	31-Mar-2021	BUNCH, JAMES (R)	52.67
693941	31-Mar-2021	BYERS, AMANDA (R)	55.29
693942	31-Mar-2021	CAFFAL, CHAD (R)	1,341.98
693943	31-Mar-2021	CRUM, LINDA (R)	14.95
693944	31-Mar-2021	DALAL, CYRUS (R)	61.25
693945	31-Mar-2021	DARWISH, TONY (R)	8.17
693946	31-Mar-2021	GREGG, CHRISTINA (R)	62.23
693947	31-Mar-2021	GRIFFIN, JASMINE (R)	55.05
693948	31-Mar-2021	HARRIS, KENNETH (R)	64.92
693949	31-Mar-2021	HOLLAND, GARRETT (R)	35.86
693950	31-Mar-2021	KERR-WOLLER, ELIZABETH (R)	16.45
693951	31-Mar-2021	KRUEGER, BRYAN (R)	56.00
693952	31-Mar-2021	LAWSON, MARY (R)	18.42
693953	31-Mar-2021	LOLL, DOROTHY (R)	22.74
693954	31-Mar-2021	LUDLOW, KERSTYN (R)	15.99
693955	31-Mar-2021	MARTINEZ, JOHN (R)	50.47
693956	31-Mar-2021	MELIA, ANTHONY (R)	8.27
693957	31-Mar-2021	MIZIA, ROBERT (R)	11.55
693958	31-Mar-2021	MONTGOMERY, JOSEPH (R)	94.85
693959	31-Mar-2021	ODOM, SAMUEL (R)	51.20
693960	31-Mar-2021	PIERCE-BYRD, HABIB (R)	136.12
693961	31-Mar-2021	QUINTERO, KARINA (R)	28.62
693962	31-Mar-2021	REID, KEVIN (R)	75.95
693963	31-Mar-2021	SEAWRIGHT, SHATOCKIA (R)	54.25
693964	31-Mar-2021	SELAMAT, JOHNSON (R)	90.76
693965	31-Mar-2021	SINGH, MARIA (R)	55.73
693966	31-Mar-2021	SPITZER, JON (R)	22.65
693967	31-Mar-2021	SUNDT CONSTRUCTION INC (R)	1,330.51
693968	31-Mar-2021	THANGAVEL, RAJESHKANNA (R)	30.88
693969	31-Mar-2021	TRAN, LONG (R)	79.17
693970	31-Mar-2021	WARREN, DAVID (R)	28.96
693971	31-Mar-2021	AT&T MOBILITY	3,520.07
693972	31-Mar-2021	EARNHARDT	6,094.79
693973	31-Mar-2021	EARNHARDT	260.22
693974	31-Mar-2021	EARNHARDT CHEVROLET	10,792.58
693975	31-Mar-2021	EMPIRE SOUTHWEST	1,480.02
693976	31-Mar-2021	ENGINEERS, PLANNERS AND SURVEYORS GROUP INC	910.00
693977	31-Mar-2021	FACTORY MOTOR PARTS COMPANY	2,893.91
693978	31-Mar-2021	FASTMED URGENT CARE	170.00
693979	31-Mar-2021	FERMOBUSA	4,883.00
693980	31-Mar-2021	FIDELITY NATIONAL TITLE AGENCY INC	150.00
693981	31-Mar-2021	FREIGHTLINER OF ARIZONA LLC	991.74
693982	31-Mar-2021	GO AZ MOTORCYCLES	1,222.02
693983	31-Mar-2021	GOOD BUILDER LLC	300.00
693984	31-Mar-2021	GRAINGER INC	159.37
693985	31-Mar-2021	GRAINGER INC	2,977.85
693986	31-Mar-2021	GRAY QUARTER, INC	1,017.50
693987	31-Mar-2021	HOT SHOT DELIVERY, INC	309.35
693988	31-Mar-2021	IMAGE TREND, INC.	2,800.00

693989	31-Mar-2021	INDUSTRIAL COMMISSION OF AZ	8,740.48
693990	31-Mar-2021	INDUSTRIAL SHOE OF ARIZONA	560.00
693991	31-Mar-2021	INFINITY REMODEL	9,100.00
693992	31-Mar-2021	INTERWEST SAFETY SUPPLY LLC	987.61
693993	31-Mar-2021	JACK'S TIRE & OIL MANAGEMENT COMPANY, INC	4,689.03
693994	31-Mar-2021	JENNINGS, HAUG & CUNNINGHAM, LLP	2,067.00
693995	31-Mar-2021	JENNINGS, HAUG & CUNNINGHAM, LLP	654.50
693996	31-Mar-2021	JENNINGS, HAUG & CUNNINGHAM, LLP	1,717.00
693997	31-Mar-2021	LANGUAGE CONNECTION	96.40
693998	31-Mar-2021	LEVEL 3 COMMUNICATIONS LLC	630.75
693999	31-Mar-2021	LEVEL 3 COMMUNICATIONS LLC	8,143.35
694000	31-Mar-2021	LIGHT HOUSE OF ARIZONA	377.15
694001	31-Mar-2021	LOGOCOMOTION	28.03
694002	31-Mar-2021	M R TANNER CONSTRUCTION	493,935.74
694003	31-Mar-2021	MARICOPA COUNTY	4,750.00
694004	31-Mar-2021	MC MC IME LLC	6,120.00
694005	31-Mar-2021	METERING SERVICES INC	10,012.58
694006	31-Mar-2021	METTLER-TOLEDO LLC	2,067.31
694007	31-Mar-2021	MIDWEST TAPE	216.51
694008	31-Mar-2021	MUNICIPAL EMERGENCY SERVICES INC	838.06
694009	31-Mar-2021	NATIONAL TESTING NETWORK INC	1,250.00
694010	31-Mar-2021	NTT AMERICA SOLUTIONS, INC	29,139.27
694011	31-Mar-2021	OTTO LOGISTICS LLC	24,479.20
694012	31-Mar-2021	PASEO VISTA ARCHERY CLUB INC	1,560.00
694014	31-Mar-2021	PROCHECK INC	13,522.04
694015	31-Mar-2021	SEQUEL POLYGRAPH	2,405.00
694016	31-Mar-2021	ALLIED UNIVERSAL SECURITY SERVICES	1,145.70
694017	31-Mar-2021	ARCADIS US INC	35,537.90
694018	31-Mar-2021	ARIZONA ATTORNEY GENERAL	24,034.47
694019	31-Mar-2021	ARIZONA COUNTIES INSURANCE POOL	150.00
694020	31-Mar-2021	ARIZONA LANDSCAPE CONTRACTOR'S ASSOC	150.00
694021	31-Mar-2021	ARIZONA RUBBER CO	1,258.54
694022	31-Mar-2021	ARIZONA TRUCK & COACH LLC	1,295.38
694023	31-Mar-2021	ARIZONA WASTEWATER INDUSTRIES INC	2,278.37
694024	31-Mar-2021	ARROWHEAD SCIENTIFIC INC	1,708.00
694025	31-Mar-2021	AXON ENTERPRISE, INC.	865,016.17
694026	31-Mar-2021	BAKER & TAYLOR INC	3,337.06
694027	31-Mar-2021	BOUND TREE MEDICAL LLC	861.25
694028	31-Mar-2021	BRICKS 4 KIDZ	1,125.00
694029	31-Mar-2021	BROOKSIE'S	143.13
694030	31-Mar-2021	BUESING CORPORATION	120.00
694031	31-Mar-2021	CHANDLER CHAMBER COMMUNITY FOUNDATION	1,133.00
694032	31-Mar-2021	CITY OF CHANDLER	2,285.00
694033	31-Mar-2021	CLARK TRANSPORTATION SOLUTIONS	2,796.13
694034	31-Mar-2021	CORE & MAIN LP	21,314.31
694035	31-Mar-2021	CORVEL CORPORATION	2,650.00
694037	31-Mar-2021	DAY AUTO SUPPLY, INC	3,458.43
694038	31-Mar-2021	DETECTION INSTRUMENTS CORP.	840.00
694039	31-Mar-2021	DONOHO, DIANE	745.50
694040	31-Mar-2021	DPC ENTERPRISES LP	25,576.75
694041	31-Mar-2021	RAY BUSE PRINTING & ADVERTISING, INC	10,543.98
1069907	04-Jan-2021	BANK OF AMERICA	793,852.60
1069908	07-Jan-2021	AMERICAN TELEPHONE	4,128.00
1069909	07-Jan-2021	BROWN AND CALDWELL	4,361.00
1069910	07-Jan-2021	ARTISTIC LAND MANAGEMENT INC	3,887.66

1069911	07-Jan-2021	ANCON	2,637.58
1069912	07-Jan-2021	CLEAN HARBORS ENVIRONMENTAL SERVICES, INC	3,301.67
1069913	07-Jan-2021	CENTRAL ARIZONA PROJECT	264,320.00
1069914	07-Jan-2021	CITY WIDE PEST CONTROL INC	1,178.00
1069915	07-Jan-2021	DOWNTOWN CHANDLER COMM PARTNERSHIP, INC.	59,402.00
1069916	07-Jan-2021	DEVAU HUMAN RESOURCES	8,052.71
1069917	07-Jan-2021	BRENNTAG PACIFIC INC	40,874.58
1069918	07-Jan-2021	ANDREW'S REFRIGERATIONS INC	3,300.00
1069919	07-Jan-2021	DUNN-EDWARDS CORPORATION	912.08
1069920	07-Jan-2021	CE WILSON CONSULTING, LLC	6,420.00
1069921	07-Jan-2021	ARIZONA'S BEST CHOICE PEST & TERMITE SERVICES	95.00
1069922	07-Jan-2021	TRISTAR ICS, INC	5,761.56
1069923	07-Jan-2021	DELTA DENTAL PLAN OF ARIZONA INC	181,590.02
1069924	07-Jan-2021	CENTURYLINK	67.69
1069925	07-Jan-2021	HORIZON DISTRIBUTORS INC	435.94
1069926	07-Jan-2021	FOSTER ELECTRIC	13,293.06
1069927	07-Jan-2021	SMITH, MICHAEL J	4,167.00
1069928	07-Jan-2021	NEIGHBORS WHO CARE	16,000.00
1069929	07-Jan-2021	NESBITT CONTRACTING COMPANY INC	11,658.08
1069930	07-Jan-2021	KIMLEY-HORN AND ASSOCIATES	7,993.20
1069931	07-Jan-2021	GREEN & BAKER	20,553.00
1069932	07-Jan-2021	POLYDYNE, INC.	9,936.00
1069933	07-Jan-2021	EUROFINS TESTAMERICA	6,183.00
1069934	07-Jan-2021	GREATER PHOENIX ECONOMIC COUNCIL	32,663.50
1069935	07-Jan-2021	KRONOS INCORPORATED	90.00
1069936	07-Jan-2021	JAMES COOKE & HOBSON	28,751.64
1069937	07-Jan-2021	MARTIN, JEFFREY G	899.30
1069938	07-Jan-2021	MYTHICS INC	603.25
1069939	07-Jan-2021	GHASTER PAINTING & COATINGS INC	2,910.00
1069940	07-Jan-2021	PHOENIX PUMPS INC	16,971.07
1069941	07-Jan-2021	JACOBO LAW FIRM, PLLC	4,167.00
1069942	07-Jan-2021	JOVOS INC	2,598.00
1069943	07-Jan-2021	PM PLUMBING & MECHANICAL INC	14,586.58
1069944	07-Jan-2021	LAW OFFICE OF LYNN R. AROUH	4,167.00
1069945	07-Jan-2021	IN-PIPE TECHNOLOGY	12,000.00
1069946	07-Jan-2021	SEGAL COMPANY, THE	6,581.25
1069947	07-Jan-2021	VOSS LIGHTING	1,692.34
1069948	07-Jan-2021	WASTE MANAGEMENT	2,960.09
1069949	07-Jan-2021	UNIFIRST CORPORATION	1,604.77
1069950	07-Jan-2021	VULCAN MATERIALS COMPANY	1,301.64
1069951	07-Jan-2021	SPRINKLER WORLD OF AZ INC	75.19
1069952	07-Jan-2021	TOWN OF GILBERT	126,427.68
1069953	07-Jan-2021	SHANNON S MARTIN CO	3,865.96
1069954	07-Jan-2021	WIST OFFICE PRODUCTS COMPANY	721.76
1069955	07-Jan-2021	VALLEYWIDE GENERATOR SERVICE LLC	1,836.50
1069956	07-Jan-2021	SHI INTERNATIONAL CORP	74,370.08
1069957	07-Jan-2021	REDDI SERVICES	2,659.85
1069958	07-Jan-2021	WAXIE SANITARY SUPPLY	4,333.88
1069959	07-Jan-2021	ORANGE COUNTY HOUSING AUTHORITY	3,228.48
1069960	07-Jan-2021	REAL T MANAGEMENT	400.00
1069961	13-Jan-2021	CHANDLER PROPERTY DEVELOPMENT ASSOCIATES LTD PTR (231-1)	92.00
1069962	13-Jan-2021	LE, KIEU	422.00
1069963	13-Jan-2021	BARKDOLL PROPERTIES LLC	824.00
1069964	13-Jan-2021	DUPAGE HOUSING AUTHORITY	2,753.48
1069965	13-Jan-2021	STRATEGIC CAPITAL ALLIANCE LTD PARTNERSHIP	1,323.00

1069966	13-Jan-2021	BIG STAR PROPERTIES, LLC	1,780.00
1069967	13-Jan-2021	BMF IV AZ LAGUNA VILLAGE LLC	1,020.00
1069968	14-Jan-2021	A/B ACE HARDWARE	1,389.63
1069969	14-Jan-2021	ARIZONA WATER WORKS SUPPLY	497.61
1069970	14-Jan-2021	BALAR EQUIPMENT CORPORATION	212.79
1069971	14-Jan-2021	ARTISTIC LAND MANAGEMENT INC	750.70
1069972	14-Jan-2021	ARIZONA PEST PREVENTION	85.00
1069973	14-Jan-2021	ANCON	13,484.51
1069974	14-Jan-2021	ARIZONA PET MORTUARY	696.00
1069975	14-Jan-2021	ALL CITY TOWING	1,215.00
1069976	14-Jan-2021	DEVAU HUMAN RESOURCES	9,578.37
1069977	14-Jan-2021	BLACK & VEATCH	24,855.00
1069978	14-Jan-2021	BRENNTAG PACIFIC INC	11,597.77
1069979	14-Jan-2021	CHANDLER ALTERNATOR STARTER	157.92
1069980	14-Jan-2021	DYE CARBONIC	966.52
1069981	14-Jan-2021	AJP ELECTRIC INC	535,905.45
1069982	14-Jan-2021	ANDREW'S REFRIGERATIONS INC	2,640.00
1069983	14-Jan-2021	DH PACE SYSTEMS INTEGRATION	3,645.22
1069984	14-Jan-2021	BROWN WHOLESALE ELECTRIC	5,173.05
1069985	14-Jan-2021	BRIGHTVIEW LANDSCAPE SERVICES, INC	15,847.76
1069986	14-Jan-2021	CHOICE MAINTENANCE AND ASPHALT SERVICES, LLC	12,087.80
1069987	14-Jan-2021	FLEXIBLE BENEFIT ADMINISTRATORS INC	974.46
1069988	14-Jan-2021	VISION SERVICE PLAN OF ARIZONA	68.94
1069989	14-Jan-2021	VISION SERVICE PLAN OF ARIZONA	24,109.62
1069990	14-Jan-2021	VISION SERVICE PLAN OF ARIZONA	4,604.40
1069991	14-Jan-2021	ANTHEM LIFE INSURANCE COMPANY	11,768.90
1069992	14-Jan-2021	VOYA FINANCIAL	70,778.59
1069993	14-Jan-2021	HORIZON DISTRIBUTORS INC	323.40
1069994	14-Jan-2021	LTI INC	124.00
1069995	14-Jan-2021	KIMLEY-HORN AND ASSOCIATES	65,621.01
1069996	14-Jan-2021	KRONOS INCORPORATED	49.65
1069997	14-Jan-2021	MARTIN, JEFFREY G	1,048.05
1069998	14-Jan-2021	PCL CONSTRUCTION INC	67,300.81
1069999	14-Jan-2021	JUSTIFACTS CREDENTIAL VERIFICATION, INC.	49.00
1070000	14-Jan-2021	EWING IRRIGATION	3,517.15
1070001	14-Jan-2021	PM PLUMBING & MECHANICAL INC	1,026.00
1070002	14-Jan-2021	VULCAN MATERIALS COMPANY	337.59
1070003	14-Jan-2021	SPRINKLER WORLD OF AZ INC	1,550.08
1070004	14-Jan-2021	VERIZON WIRELESS	11,298.92
1070005	14-Jan-2021	RITOCH-POWELL & ASSOCIATES	46,114.05
1070006	14-Jan-2021	REDFLEX TRAFFIC SYSTEMS	21.01
1070007	14-Jan-2021	SHANNON S MARTIN CO	14,691.81
1070008	14-Jan-2021	SYSTEMS ELECTRONIC GROUP	2,087.50
1070009	14-Jan-2021	EUROFINS TESTAMERICA	8,121.00
1070010	14-Jan-2021	TOPETE/STONEFIELD INC	129.87
1070011	14-Jan-2021	AMERICAN TRAFFIC SOLUTIONS INC	5,746.34
1070012	14-Jan-2021	SIMON FAMILY ENTERPRISES INC	8,290.00
1070013	14-Jan-2021	REDDI SERVICES	229.00
1070014	14-Jan-2021	WAXIE SANITARY SUPPLY	32,147.54
1070015	14-Jan-2021	UNITED FIBERS LLC	92,163.00
1070016	14-Jan-2021	WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC	54,647.00
1070017	14-Jan-2021	WASTE MANAGEMENT	42,519.71
1070018	14-Jan-2021	UNIFIRST CORPORATION	2,779.13
1070019	15-Jan-2021	ARIZONA COMMUNITY FOUNDATION	254,350.00
1070020	20-Jan-2021	ARIZONA COMMUNITY FOUNDATION	503,900.00

1070021	21-Jan-2021	ARTISTIC LAND MANAGEMENT INC	980.00
1070022	21-Jan-2021	CURTIS BLUE LINE	579.92
1070023	21-Jan-2021	ANCON	6,810.21
1070024	21-Jan-2021	CITY WIDE PEST CONTROL INC	540.00
1070025	21-Jan-2021	CONSULTANT ENGINEERING INC	45,827.15
1070026	21-Jan-2021	ALL CITY TOWING	30.00
1070027	21-Jan-2021	DEVAU HUMAN RESOURCES	6,906.35
1070028	21-Jan-2021	BRENNTAG PACIFIC INC	11,357.92
1070029	21-Jan-2021	DYE CARBONIC	1,446.59
1070030	21-Jan-2021	AMERICAN TRAFFIC SOLUTIONS INC	31,400.00
1070031	21-Jan-2021	ANDREW'S REFRIGERATIONS INC	2,371.64
1070032	21-Jan-2021	BRIGHTVIEW LANDSCAPE SERVICES, INC	2,370.00
1070033	21-Jan-2021	ARIZONA'S BEST CHOICE PEST & TERMITE SERVICES	480.00
1070034	21-Jan-2021	ARTHUR J GALLAGHER RISK MANAGEMENT SERVICES INC	30.00
1070035	21-Jan-2021	HORIZON DISTRIBUTORS INC	1,210.44
1070036	21-Jan-2021	KIMLEY-HORN AND ASSOCIATES	14,901.82
1070037	21-Jan-2021	JUST PLANT DESIGNERS INC	165.00
1070038	21-Jan-2021	ENVIRONMENTAL PLANNING GROUP LLC	271.35
1070039	21-Jan-2021	MEDTOX LABORATORIES INC.	30.00
1070040	21-Jan-2021	SOUTHWEST GROUNDWATER CONSULTANTS	3,647.50
1070041	21-Jan-2021	PIONEER LANDSCAPE CENTERS	35,786.02
1070042	21-Jan-2021	WASTE MANAGEMENT	387.36
1070043	21-Jan-2021	UNIFIRST CORPORATION	298.70
1070044	21-Jan-2021	SUNLAND, INC	665,299.98
1070045	21-Jan-2021	Y S MANTRI & ASSOCIATES, LLC	18,429.97
1070046	21-Jan-2021	VERIZON WIRELESS	80.02
1070047	21-Jan-2021	SHANNON S MARTIN CO	500.21
1070048	21-Jan-2021	VALLEYWIDE GENERATOR SERVICE LLC	180.00
1070049	21-Jan-2021	WAXIE SANITARY SUPPLY	5,221.55
1070050	21-Jan-2021	STANTEC CONSULTING SERVICES INC	26,190.99
1070051	21-Jan-2021	UNITED STATES POSTAL SERVICES	100,000.00
1070052	21-Jan-2021	ARIZONA COMMUNITY FOUNDATION	499,300.00
1070053	26-Jan-2021	ARIZONA COMMUNITY FOUNDATION	330,900.00
1070054	27-Jan-2021	ARIZONA COMMUNITY FOUNDATION	200,000.00
1070055	28-Jan-2021	CHRISTMAS LIGHT DECORATORS	18,078.08
1070056	28-Jan-2021	A/B ACE HARDWARE	468.16
1070057	28-Jan-2021	ARIZONA WATER WORKS SUPPLY	448.57
1070058	28-Jan-2021	BALAR EQUIPMENT CORPORATION	1,201.62
1070059	28-Jan-2021	BROWN AND CALDWELL	1,549.00
1070060	28-Jan-2021	ARTISTIC LAND MANAGEMENT INC	2,319.23
1070061	28-Jan-2021	ARIZONA PEST PREVENTION	285.00
1070062	28-Jan-2021	AZTEC ENGINEERING	2,565.00
1070063	28-Jan-2021	DOWNTOWN CHANDLER COMM PARTNERSHIP, INC.	2,400.00
1070064	28-Jan-2021	ARIZONA GLOVE & SAFETY	941.14
1070065	28-Jan-2021	ALL CITY TOWING	120.00
1070066	28-Jan-2021	DEVAU HUMAN RESOURCES	24,154.09
1070067	28-Jan-2021	BRENNTAG PACIFIC INC	16,606.18
1070068	28-Jan-2021	DYE CARBONIC	1,057.41
1070069	28-Jan-2021	ARTHUR J GALLAGHER RISK MANAGEMENT SERVICES INC	30.00
1070070	28-Jan-2021	CH2M HILL INC	70,210.00
1070071	28-Jan-2021	ANDREW'S REFRIGERATIONS INC	990.00
1070072	28-Jan-2021	COMMONWEALTH AMMUNITION LLC	3,350.00
1070073	28-Jan-2021	BROWN WHOLESALE ELECTRIC	304.08
1070074	28-Jan-2021	DT CHANDLER LLC	29,048.97
1070075	28-Jan-2021	BRIGHTVIEW LANDSCAPE SERVICES, INC	10,060.00

1070076	28-Jan-2021	ARIZONA'S BEST CHOICE PEST & TERMITE SERVICES	1,001.00
1070077	28-Jan-2021	NUTRIEN AG SOLUTIONS, INC	3,277.12
1070078	28-Jan-2021	FELIX CONSTRUCTION COMPANY	40,907.93
1070079	28-Jan-2021	FOSTER ELECTRIC	190.00
1070080	28-Jan-2021	H&E EQUIPMENT SERVICES INC	868.80
1070081	28-Jan-2021	GRUBER INDUSTRIES	5,441.85
1070082	28-Jan-2021	JAMES COOKE & HOBSON	2,416.06
1070083	28-Jan-2021	MARTIN, JEFFREY G	1,508.75
1070084	28-Jan-2021	GHASTER PAINTING & COATINGS INC	1,250.00
1070085	28-Jan-2021	EWING IRRIGATION	972.00
1070086	28-Jan-2021	LAW OFFICE OF LAURIE GROGAN	4,167.00
1070087	28-Jan-2021	HENDERSON BELTWAY, LLC	6,135.04
1070088	28-Jan-2021	LAYNE CHRISTENSEN COMPANY	5,848.91
1070089	28-Jan-2021	JOVOS INC	8,211.80
1070090	28-Jan-2021	PM PLUMBING & MECHANICAL INC	2,943.15
1070091	28-Jan-2021	VOSS LIGHTING	3,962.82
1070092	28-Jan-2021	SIMPSON NORTON	141.40
1070093	28-Jan-2021	WASTE MANAGEMENT	983,877.94
1070094	28-Jan-2021	UNIFIRST CORPORATION	1,835.48
1070095	28-Jan-2021	VULCAN MATERIALS COMPANY	838.93
1070096	28-Jan-2021	SPRINKLER WORLD OF AZ INC	615.51
1070097	28-Jan-2021	SUPREME OIL CO	6,792.28
1070098	28-Jan-2021	VERIZON WIRELESS	400.12
1070099	28-Jan-2021	RITOCH-POWELL & ASSOCIATES	45,492.25
1070100	28-Jan-2021	SHANNON S MARTIN CO	7,943.41
1070101	28-Jan-2021	SPIKER SPORTS	368.00
1070102	28-Jan-2021	SPEEDIE & ASSOCIATES	195.00
1070103	28-Jan-2021	WIST OFFICE PRODUCTS COMPANY	1,175.21
1070104	28-Jan-2021	VALLEY COLLECTION SERVICE LLC	550.45
1070105	28-Jan-2021	VALLEYWIDE GENERATOR SERVICE LLC	12,735.37
1070106	28-Jan-2021	FISHEL COMPANY, THE	605,083.45
1070107	28-Jan-2021	SIMON FAMILY ENTERPRISES INC	5,539.25
1070108	28-Jan-2021	WAXIE SANITARY SUPPLY	10,056.93
1070109	28-Jan-2021	STARLIGHT INVESTIGATIONS	417.50
1070110	28-Jan-2021	LE, KIEU	1,103.00
1070111	28-Jan-2021	PRICE, MI-SIM	960.00
1070112	28-Jan-2021	GREBE, ROLANDO	1,300.00
1070113	28-Jan-2021	HOANG, BUUCHAU QUOC	1,476.00
1070114	28-Jan-2021	COSTALES, ABEL	577.00
1070115	28-Jan-2021	CARPENTER, SONJA G	903.00
1070116	28-Jan-2021	HALL, ERIC	807.00
1070117	28-Jan-2021	SINGH, REENA	1,484.00
1070118	28-Jan-2021	SUNSHINE REALTY LLC	801.00
1070119	28-Jan-2021	NGUYEN, NGOC	887.00
1070120	28-Jan-2021	XIA, JINGNA	779.00
1070121	28-Jan-2021	XIE, YUN	2,661.00
1070122	28-Jan-2021	MAKEY, JAMES	805.00
1070123	28-Jan-2021	GOVINDARAJAN, OMKAR	827.00
1070124	28-Jan-2021	OARE, ELIZABETH	755.00
1070125	28-Jan-2021	ARIZONA HOMES PLUS	1,510.00
1070126	28-Jan-2021	I & PSSG LLC	1,400.00
1070127	28-Jan-2021	WATTS, ELSKA M.	475.00
1070128	28-Jan-2021	NGUYEN, HONG	1,142.00
1070129	28-Jan-2021	FRESNO INVESTMENTS	2,329.00
1070130	28-Jan-2021	WONG, CHRISTOPHER DINH	692.00

1070131	28-Jan-2021	JJBMC PROPERTIES LLC	4,095.00
1070132	28-Jan-2021	BIYANI, MANISH	1,450.00
1070133	28-Jan-2021	LAM, CHI MING	1,400.00
1070134	28-Jan-2021	WARDA, ALBERT	1,549.00
1070135	28-Jan-2021	SALEH, ZIAD	1,430.00
1070136	28-Jan-2021	SKOGLUND, NANCY B	1,450.00
1070137	28-Jan-2021	ARIZONA ELITE PROPERTIES	1,625.00
1070138	28-Jan-2021	MCKINLEY, ROSS HARRISON	399.00
1070139	28-Jan-2021	KRUY IN, BUN	865.00
1070140	28-Jan-2021	SIN, BENNY	572.00
1070141	28-Jan-2021	AILEEN CHU HOLDINGS LLC	1,675.00
1070142	28-Jan-2021	WOODS, KAY	1,170.00
1070143	28-Jan-2021	2ND ST INVESTMENTS	864.00
1070144	28-Jan-2021	EDB ENTERPRISE LLC	1,205.00
1070145	28-Jan-2021	POUCHKAREV, ANDREI	1,395.00
1070146	28-Jan-2021	CHANDLER PROPERTY DEVELOPMENT ASSOCIATES LTD PTR (231-1)	27,376.00
1070147	28-Jan-2021	KIANPOUR, FARAMARZ	938.00
1070148	28-Jan-2021	RODRIGUEZ-MESA, IVAN	1,690.00
1070149	28-Jan-2021	KHATRI, SHAH	6,850.00
1070150	28-Jan-2021	ARM OF SAVE THE FAMILY FOUNDATION OF ARIZONA	371.00
1070151	28-Jan-2021	GORE, VIPUL	773.00
1070152	28-Jan-2021	BIG STAR PROPERTIES, LLC	5,928.00
1070153	28-Jan-2021	BROADWAY ROAD PROPERTY LLC	880.00
1070154	28-Jan-2021	RAY ROAD PROPERTY LLC	666.00
1070155	28-Jan-2021	MORTENSEN, GLORIA J	1,100.00
1070156	28-Jan-2021	THY LLC	956.00
1070157	28-Jan-2021	BMF IV AZ LAGUNA VILLAGE LLC	10,732.00
1070158	28-Jan-2021	MASHAYEKHI, MITRA	1,600.00
1070159	28-Jan-2021	GET MULTIFAMILY	934.00
1070160	28-Jan-2021	NPTL 4 LLC	1,380.00
1070161	28-Jan-2021	P.J HUSSEY & ASSOCIATES INC	495.00
1070162	28-Jan-2021	HARTFORD APARTMENTS	1,680.00
1070163	28-Jan-2021	REAL T MANAGEMENT	1,264.00
1070164	28-Jan-2021	HADAWAY, MICHELLE VIVIANNE	974.00
1070165	28-Jan-2021	AUSTIN FLECK PROPERTY MANAGEMENT LLC	951.00
1070166	28-Jan-2021	JONES, PATRICIA A.	916.00
1070167	28-Jan-2021	MCKINDLES, JOHN	1,495.00
1070168	28-Jan-2021	LUNDIN, ANDREY	776.00
1070169	28-Jan-2021	KHILLAN, RAJNEEK	1,120.00
1070170	28-Jan-2021	CANO-CARRILLO, GRICELDA	561.00
1070171	28-Jan-2021	GOSKONDA, VENKATESHWAR	289.00
1070172	28-Jan-2021	TAM, VIVIAN	761.00
1070173	28-Jan-2021	MCLOONE, AMANDA	1,512.00
1070174	28-Jan-2021	GENTILE, JAMES	1,428.00
1070175	28-Jan-2021	GUERRERO, LAURIE	1,370.00
1070176	28-Jan-2021	MILLER, JEFFERY ROBERT	632.00
1070177	28-Jan-2021	ABDELKARIM, RABAH	1,174.00
1070178	28-Jan-2021	BURNHAM, TIMOTHY	1,331.00
1070179	28-Jan-2021	SARVI, MICHAEL	1,111.00
1070180	28-Jan-2021	SALZMAN, BART	1,500.00
1070181	28-Jan-2021	AVA HOLDINGS LLC	549.00
1070182	28-Jan-2021	LARSEN DEVELOPMENT LLC	951.00
1070183	28-Jan-2021	FOCUS LLC	3,415.00
1070184	28-Jan-2021	FENG, WINNIE	1,565.00
1070185	28-Jan-2021	CX RENTALS LLC	605.00

1070186	28-Jan-2021	GJONZENELI, MURAT	3,871.00
1070187	28-Jan-2021	VAKKALANKA, SURYANARAYANA	713.00
1070188	28-Jan-2021	SJ PROPERTIES LLC	540.00
1070189	28-Jan-2021	HYF INVESTCO, LLC	963.00
1070190	28-Jan-2021	HANDZEL, SHARON C	1,003.00
1070191	28-Jan-2021	STRATEGIC CAPITAL ALLIANCE LTD PARTNERSHIP	10,407.00
1070192	28-Jan-2021	CHANDLER GARDENS	17,522.00
1070193	28-Jan-2021	CABRERA, TERESA	1,650.00
1070194	28-Jan-2021	PALM TRAILS LLC	9,800.00
1070195	28-Jan-2021	WUZ 66 RENTAL LLC	1,138.00
1070196	28-Jan-2021	LUEDY, IRINA	1,303.00
1070197	28-Jan-2021	TRINH, KY Q	1,205.00
1070198	28-Jan-2021	PASHAPOUR NIKU, MAZIAR	1,624.00
1070199	28-Jan-2021	AQUINO, MIRA-FLOR T	920.00
1070200	28-Jan-2021	DESERT WIND PROPERTY MANAGEMENT & REAL ESTATE LLC	149.00
1070201	28-Jan-2021	SWH 2017-1 BORROWER, LP	2,802.00
1070202	28-Jan-2021	KATZ, JENNIFER ANN	759.00
1070203	28-Jan-2021	SANTOS, AGNES	660.00
1070204	28-Jan-2021	NGUY HUANG LLC	1,106.00
1070205	28-Jan-2021	SHAO, LAN	3,084.00
1070206	28-Jan-2021	BOSCHEE, CHARLES L	608.00
1070207	28-Jan-2021	BURTON, DOUGLAS J	1,165.00
1070208	28-Jan-2021	YIN, WENBI	1,619.00
1070209	28-Jan-2021	847 RAY LLC	4,482.00
1070210	28-Jan-2021	AZURE SEA LANE LLC	2,480.00
1070211	28-Jan-2021	SFR 2012-1 US WEST LLC	3,452.00
1070212	28-Jan-2021	SPC RENTAL PROPERTY, LLC	2,025.00
1070213	28-Jan-2021	WL INVESTMENT LLC	1,324.00
1070214	28-Jan-2021	BRAVO, DEBORAH LYNN	778.00
1070215	28-Jan-2021	THOMASIAN, BIKI	618.00
1070216	28-Jan-2021	SHAHIN, GABRIEL	1,420.00
1070217	28-Jan-2021	O'DONNELL, MELISSA	955.00
1070218	28-Jan-2021	INVESTAR REAL ESTATE SPECIALISTS LLC	890.00
1070219	28-Jan-2021	GOLD COAST REALTY	1,068.00
1070220	28-Jan-2021	MAYPER, CHAD	736.00
1070221	28-Jan-2021	N/A TOWN SQUARE-65 LP	957.00
1070222	28-Jan-2021	NGUYEN, CALVIN	625.00
1070223	28-Jan-2021	330 N COMANCHE LLC	3,455.00
1070224	28-Jan-2021	LEWERRIT LLC	1,550.00
1070225	28-Jan-2021	1125 CALIFORNIA LLC	1,545.00
1070226	28-Jan-2021	WEINBERG, JAMES M	1,490.00
1070227	28-Jan-2021	JAIN, VIKAS	814.00
1070228	28-Jan-2021	BLATO PROPERTY MANAGEMENT LLC	913.00
1070229	28-Jan-2021	TREVNIC HOLDINGS, INC	934.00
1070230	28-Jan-2021	DALA GROUP, LLC	1,162.00
1070231	28-Jan-2021	SEVEN STRONG ENTERPRISES, LLC	984.00
1070232	28-Jan-2021	MAAG, BLANCA RIVERA	1,036.00
1070233	28-Jan-2021	AZ HOME FOR US	1,292.00
1070234	28-Jan-2021	LEE, KEVIN	1,559.00
1070235	28-Jan-2021	YASSIR, YOUSEF	1,848.00
1070236	28-Jan-2021	LAROUSSI, REDOUANE	617.00
1070237	28-Jan-2021	MARYLAND PALMS APARTMENTS LLC	768.00
1070238	28-Jan-2021	HERNANDEZ, ERIBERTO	940.00
1070239	28-Jan-2021	ANDERSON DUNIGAN EAST VALLEY PM LLC	1,541.00
1070240	28-Jan-2021	RRC INVESTMENTS LLC	1,071.00

1070241	28-Jan-2021	EPICENTER HOLDINGS LLC	718.00
1070242	28-Jan-2021	OKATI LLC	1,168.00
1070243	28-Jan-2021	WANG, XIAOGANG	982.00
1070244	28-Jan-2021	TALAI, FRANCESCO	297.00
1070245	28-Jan-2021	SLABAUGH, INGRID	4.00
1070246	28-Jan-2021	SURCHIK, EDWARD	967.00
1070247	28-Jan-2021	EKSS LLC	1,578.00
1070248	28-Jan-2021	LEE, LARRY	1,240.00
1070249	28-Jan-2021	XIAO, HONG MEI	1,392.00
1070250	28-Jan-2021	AHN, SUNGIL	766.00
1070251	28-Jan-2021	ZHANG, QISHENG	1,195.00
1070252	28-Jan-2021	GUERRERO, ROSE	4,679.00
1070253	28-Jan-2021	ZHANG, JUNLI	1,430.00
1070254	28-Jan-2021	LIN, RONG CHUN	2,724.00
1070255	28-Jan-2021	BURCH, CHRISTOPHER	1,010.00
1070256	28-Jan-2021	PASQUALINA VITIRITTI TRUSTEE	519.00
1070257	28-Jan-2021	PERSONAL REAL ESTATE SERVICES LLC	499.00
1070258	28-Jan-2021	GILBERT, THURMAN	663.00
1070259	28-Jan-2021	CRUZ, JUAN	510.00
1070260	28-Jan-2021	HADEED, JAMES	1,030.00
1070261	28-Jan-2021	LETS REED LLC	498.00
1070262	28-Jan-2021	VIRDEE, ARVINDER S	1,273.00
1070263	28-Jan-2021	MCNELLIS, JOHN	842.00
1070264	28-Jan-2021	GILBERT, JUSTIN	1,255.00
1070265	28-Jan-2021	NJOROGE, ELIZABETH	947.00
1070266	28-Jan-2021	WU, SUYUAN LIN	2,811.00
1070267	28-Jan-2021	BARKDOLL PROPERTIES LLC	7,541.00
1070268	28-Jan-2021	GARCIA, CRISTINA	590.00
1070269	28-Jan-2021	ARIZONA LIVING PROPERTY MANAGEMENT, INC	1,379.00
1070270	28-Jan-2021	MRGUDICH, JON A	981.00
1070271	28-Jan-2021	JDC INVESTMENTS LLC	965.00
1070272	28-Jan-2021	NGUY CONCEPT LLC	1,806.00
1070273	28-Jan-2021	LE, THUC	1,400.00
1070274	28-Jan-2021	S J FOWLER REAL ESTATE INC	710.00
1070275	28-Jan-2021	STARLIGHT INVESTIGATIONS	0.00
1070276	28-Jan-2021	VALLEY METRO RAIL INC	0.00
1070277	28-Jan-2021	FOUR LIZARD STUDIOS LLC	0.00
1070278	02-Feb-2021	ARIZONA COMMUNITY FOUNDATION	312,200.00
1070279	04-Feb-2021	BROWN WHOLESALE ELECTRIC	33,770.37
1070280	04-Feb-2021	BRIGHTVIEW LANDSCAPE SERVICES, INC	15,847.76
1070281	04-Feb-2021	CHOICE MAINTENANCE AND ASPHALT SERVICES, LLC	28,500.00
1070282	04-Feb-2021	AMERICAN TELEPHONE	4,128.00
1070283	04-Feb-2021	A/B ACE HARDWARE	930.81
1070284	04-Feb-2021	BAVCO	1,829.25
1070285	04-Feb-2021	ARTISTIC LAND MANAGEMENT INC	5,081.91
1070286	04-Feb-2021	ARIZONA PEST PREVENTION	45.00
1070287	04-Feb-2021	ANCON	26,560.04
1070288	04-Feb-2021	CONSULTANT ENGINEERING INC	2,905.00
1070289	04-Feb-2021	ARIZONA GLOVE & SAFETY	213.26
1070290	04-Feb-2021	ALL CITY TOWING	10.00
1070291	04-Feb-2021	DEVAU HUMAN RESOURCES	9,835.75
1070292	04-Feb-2021	BLACK & VEATCH	4,255.00
1070293	04-Feb-2021	GONZALEZ, ALEX	4,167.00
1070294	04-Feb-2021	BRENNTAG PACIFIC INC	26,053.07
1070295	04-Feb-2021	DYE CARBONIC	599.23

1070296	04-Feb-2021	CENTURYLINK	20.78
1070297	04-Feb-2021	ANDREW'S REFRIGERATIONS INC	330.00
1070298	04-Feb-2021	CE WILSON CONSULTING, LLC	4,620.00
1070299	04-Feb-2021	JAMES COOKE & HOBSON	2,652.37
1070300	04-Feb-2021	LAMBTECH INC	1,050.00
1070301	04-Feb-2021	EWING IRRIGATION	2,447.50
1070302	04-Feb-2021	PIONEER LANDSCAPE CENTERS	18,858.20
1070303	04-Feb-2021	LAYNE CHRISTENSEN COMPANY	4,988.06
1070304	04-Feb-2021	JOVOS INC	2,922.20
1070305	04-Feb-2021	PM PLUMBING & MECHANICAL INC	998.56
1070306	04-Feb-2021	LAW OFFICE OF LYNN R. AROUH	4,167.00
1070307	04-Feb-2021	IN-PIPE TECHNOLOGY	12,000.00
1070308	04-Feb-2021	FELIX CONSTRUCTION COMPANY	48,380.98
1070309	04-Feb-2021	SMITH, MICHAEL J	8,334.00
1070310	04-Feb-2021	FULL SPECTRUM ANALYTICS INC	5,445.42
1070311	04-Feb-2021	KIMLEY-HORN AND ASSOCIATES	16,911.42
1070312	04-Feb-2021	GREEN & BAKER	1,813.00
1070313	04-Feb-2021	JUST PLANT DESIGNERS INC	165.00
1070314	04-Feb-2021	KRONOS INCORPORATED	60.23
1070315	04-Feb-2021	UNIFIRST CORPORATION	1,007.15
1070316	04-Feb-2021	VULCAN MATERIALS COMPANY	246.75
1070317	04-Feb-2021	SPRINKLER WORLD OF AZ INC	95.70
1070318	04-Feb-2021	SHANNON S MARTIN CO	14,646.60
1070319	04-Feb-2021	SYSTEMS ELECTRONIC GROUP	10,995.00
1070320	04-Feb-2021	SDB INC	1,497.63
1070321	04-Feb-2021	WIST OFFICE PRODUCTS COMPANY	6.48
1070322	04-Feb-2021	SIRCHIE FINGER PRINT LABORATORIES INC	204.60
1070323	04-Feb-2021	VALLEYWIDE GENERATOR SERVICE LLC	5,374.21
1070324	04-Feb-2021	SILVA LAW FIRM PC	4,167.00
1070325	04-Feb-2021	WAXIE SANITARY SUPPLY	257.95
1070326	04-Feb-2021	STANTEC CONSULTING SERVICES INC	534.51
1070327	04-Feb-2021	LAW OFFICE OF JARED ALLEN, THE	4,167.00
1070328	04-Feb-2021	REGIONAL PUBLIC TRANS AUTHORITY-VALLEY METRO	0.00
1070329	04-Feb-2021	BECKMAN, KRISTI M	0.00
1070330	04-Feb-2021	JONOVICH, KATINA	0.00
1070331	04-Feb-2021	RAMER, WALTER DAVID	434.39
1070332	04-Feb-2021	HUNTER, HOLLY H	5.39
1070333	05-Feb-2021	ARIZONA COMMUNITY FOUNDATION	659,250.00
1070334	05-Feb-2021	O'DONNELL, MELISSA	246.00
1070335	05-Feb-2021	CHANDLER GARDENS	1,834.00
1070336	05-Feb-2021	ORANGE COUNTY HOUSING AUTHORITY	3,228.48
1070337	05-Feb-2021	BIG STAR PROPERTIES, LLC	2,041.00
1070338	05-Feb-2021	CHANDLER PROPERTY DEVELOPMENT ASSOCIATES LTD PTR (231-1)	284.00
1070339	05-Feb-2021	BARKDOLL PROPERTIES LLC	1,131.00
1070340	05-Feb-2021	OKATI LLC	162.00
1070341	05-Feb-2021	DUPAGE HOUSING AUTHORITY	1,376.74
1070342	05-Feb-2021	847 RAY LLC	1,195.00
1070343	08-Feb-2021	BANK OF AMERICA	703,021.15
1070344	08-Feb-2021	ARIZONA COMMUNITY FOUNDATION	916,400.00
1070345	11-Feb-2021	A NEW LEAF	9,463.00
1070346	11-Feb-2021	BALAR EQUIPMENT CORPORATION	1,395.37
1070347	11-Feb-2021	ARTISTIC LAND MANAGEMENT INC	3,874.23
1070348	11-Feb-2021	AZTEC ENGINEERING	1,300.00
1070349	11-Feb-2021	CONNEY SAFETY PRODUCTS LLC	33.67
1070350	11-Feb-2021	ARIZONA PET MORTUARY	1,579.00

1070351	11-Feb-2021	CATHOLIC CHARITIES COMMUNITY SERVICES INC	6,250.00
1070352	11-Feb-2021	ALL CITY TOWING	1,079.50
1070353	11-Feb-2021	DEVAU HUMAN RESOURCES	16,157.65
1070354	11-Feb-2021	BRENNTAG PACIFIC INC	5,751.17
1070355	11-Feb-2021	ABOUT CARE INC	17,000.00
1070356	11-Feb-2021	CHANDLER FIREFIGHTER CHARITIES	1,818.00
1070357	11-Feb-2021	AZCEND	143,370.00
1070358	11-Feb-2021	DUNN-EDWARDS CORPORATION	275.95
1070359	11-Feb-2021	BRIGHTVIEW LANDSCAPE SERVICES, INC	42,380.00
1070360	11-Feb-2021	ARIZONA'S BEST CHOICE PEST & TERMITE SERVICES	143.00
1070361	11-Feb-2021	DELTA DENTAL PLAN OF ARIZONA INC	125,543.84
1070362	11-Feb-2021	VISION SERVICE PLAN OF ARIZONA	24,398.18
1070363	11-Feb-2021	VISION SERVICE PLAN OF ARIZONA	5,536.20
1070364	11-Feb-2021	VISION SERVICE PLAN OF ARIZONA	68.94
1070365	11-Feb-2021	ANTHEM LIFE INSURANCE COMPANY	11,926.70
1070366	11-Feb-2021	VOYA FINANCIAL	75,664.18
1070367	11-Feb-2021	FLEXIBLE BENEFIT ADMINISTRATORS INC	953.60
1070368	11-Feb-2021	IMPROVING CHANDLER AREA NEIGHBORHOODS	17,199.00
1070369	11-Feb-2021	LTI INC	1,141.00
1070370	11-Feb-2021	NEIGHBORS WHO CARE	8,000.00
1070371	11-Feb-2021	MATTHEW'S CROSSING	11,250.00
1070372	11-Feb-2021	PROFORCE LAW ENFORCEMENT	10,565.25
1070373	11-Feb-2021	EAST VALLEY JCC	31,556.25
1070374	11-Feb-2021	ONE SMALL STEP INC	9,100.00
1070375	11-Feb-2021	FANS ACROSS AMERICAN CHARITABLE FOUNDATION	7,375.00
1070376	11-Feb-2021	PRECISION ELECTRIC CO	3,321.46
1070377	11-Feb-2021	MARTIN, JEFFREY G	1,955.00
1070378	11-Feb-2021	PCL CONSTRUCTION INC	31,350.00
1070379	11-Feb-2021	JUSTIFACTS CREDENTIAL VERIFICATION, INC.	24.50
1070380	11-Feb-2021	GHASTER PAINTING & COATINGS INC	1,890.00
1070381	11-Feb-2021	EWING IRRIGATION	3,912.52
1070382	11-Feb-2021	GOODMANS INTERIOR STRUCTURES	13,758.23
1070383	11-Feb-2021	JACOBO LAW FIRM, PLLC	4,167.00
1070384	11-Feb-2021	JOVOS INC	6,599.46
1070385	11-Feb-2021	PM PLUMBING & MECHANICAL INC	5,008.07
1070386	11-Feb-2021	UNIFIRST CORPORATION	996.25
1070387	11-Feb-2021	VULCAN MATERIALS COMPANY	839.77
1070388	11-Feb-2021	ARIZONA REPUBLIC, THE	2,464.75
1070389	11-Feb-2021	WEBER WATER RESOURCES LLC	20,268.04
1070390	11-Feb-2021	SPRINKLER WORLD OF AZ INC	2,564.10
1070391	11-Feb-2021	STOTZ EQUIPMENT	103.55
1070392	11-Feb-2021	RECREATION AND ATHLETICS FOR THE DISABLED	180.00
1070393	11-Feb-2021	REDDI SERVICES	631.12
1070394	11-Feb-2021	WAXIE SANITARY SUPPLY	16,865.03
1070395	11-Feb-2021	UNITED FIBERS LLC	70,208.00
1070396	11-Feb-2021	RITOCH-POWELL & ASSOCIATES	74,008.60
1070397	11-Feb-2021	REDFLEX TRAFFIC SYSTEMS	9.96
1070398	11-Feb-2021	SHANNON S MARTIN CO	13,750.00
1070399	11-Feb-2021	SPIKER SPORTS	1,104.00
1070400	11-Feb-2021	SDB INC	45,798.95
1070401	11-Feb-2021	VALLEYWIDE GENERATOR SERVICE LLC	764.38
1070402	11-Feb-2021	AMERICAN TRAFFIC SOLUTIONS INC	6,222.22
1070403	11-Feb-2021	SAVE THE FAMILY FOUNDATION OF ARIZONA	84,750.00
1070404	11-Feb-2021	SEGAL COMPANY, THE	2,925.00
1070405	11-Feb-2021	WASTE MANAGEMENT	20,476.44

1070406	11-Feb-2021	VALLEY OF THE SUN UNITED WAY	360.00
1070407	11-Feb-2021	RESURRECTION STREET MINISTRY INC	23,312.50
1070408	11-Feb-2021	ARIZONA COMMUNITY FOUNDATION	619,600.00
1070409	12-Feb-2021	SJ PROPERTIES LLC	602.00
1070410	12-Feb-2021	ARIZONA COMMUNITY FOUNDATION	384,700.00
1070411	18-Feb-2021	A/B ACE HARDWARE	545.93
1070412	18-Feb-2021	ARTISTIC LAND MANAGEMENT INC	2,050.00
1070413	18-Feb-2021	AZTEC ENGINEERING	9,785.00
1070414	18-Feb-2021	COMMUNITY BRIDGES	33,630.75
1070415	18-Feb-2021	ANCON	4,220.13
1070416	18-Feb-2021	CHANDLER CULTURAL FOUNDATION	80.50
1070417	18-Feb-2021	CONSULTANT ENGINEERING INC	65,704.32
1070418	18-Feb-2021	ARIZONA BLUE STAKE INC	1,923.83
1070419	18-Feb-2021	DEVAU HUMAN RESOURCES	1,927.92
1070420	18-Feb-2021	BRENNTAG PACIFIC INC	13,617.13
1070421	18-Feb-2021	CHANDLER FIREFIGHTER CHARITIES	6,694.50
1070422	18-Feb-2021	AZCEND	11,000.00
1070423	18-Feb-2021	AJP ELECTRIC INC	851,194.35
1070424	18-Feb-2021	AMERICAN TRAFFIC SOLUTIONS INC	29,600.00
1070425	18-Feb-2021	CHOICE MAINTENANCE AND ASPHALT SERVICES, LLC	37,346.00
1070426	18-Feb-2021	TRISTAR ICS, INC	5,732.68
1070427	18-Feb-2021	SPERANZA, CAROLE	258.69
1070428	18-Feb-2021	HORIZON DISTRIBUTORS INC	330.32
1070429	18-Feb-2021	O C TANNER RECOGNITION CO	518.36
1070430	18-Feb-2021	KIMLEY-HORN AND ASSOCIATES	77,157.20
1070431	18-Feb-2021	POLYDYNE, INC.	10,216.00
1070432	18-Feb-2021	JAMES COOKE & HOBSON	3,453.31
1070433	18-Feb-2021	GHASTER PAINTING & COATINGS INC	1,175.00
1070434	18-Feb-2021	LAYNE CHRISTENSEN COMPANY	33,000.24
1070435	18-Feb-2021	JOHNSON CONTROLS INC	11,208.26
1070436	18-Feb-2021	JOVOS INC	3,146.80
1070437	18-Feb-2021	WASTE MANAGEMENT	973,566.24
1070438	18-Feb-2021	UNIFIRST CORPORATION	354.55
1070439	18-Feb-2021	SUNLAND, INC	855,578.96
1070440	18-Feb-2021	Y S MANTRI & ASSOCIATES, LLC	3,366.92
1070441	18-Feb-2021	TOWN OF GILBERT	294,405.02
1070442	18-Feb-2021	SUPREME OIL CO	8,803.21
1070443	18-Feb-2021	VERIZON WIRELESS	9,324.31
1070444	18-Feb-2021	RITOCH-POWELL & ASSOCIATES	21,291.38
1070445	18-Feb-2021	SHANNON S MARTIN CO	3,589.85
1070446	18-Feb-2021	ROADWAY ELECTRIC LLC	92,880.00
1070447	18-Feb-2021	TOPETE/STONEFIELD INC	262.46
1070448	18-Feb-2021	WIST OFFICE PRODUCTS COMPANY	157.60
1070449	18-Feb-2021	FISHEL COMPANY, THE	140,471.59
1070450	18-Feb-2021	WAXIE SANITARY SUPPLY	64.98
1070451	18-Feb-2021	CHANDLER PROPERTY DEVELOPMENT ASSOCIATES LTD PTR (231-1)	507.00
1070452	18-Feb-2021	WEST GALVESTON LLC	718.00
1070453	18-Feb-2021	ARIZONA COMMUNITY FOUNDATION	256,600.00
1070454	22-Feb-2021	ARIZONA COMMUNITY FOUNDATION	101,100.00
1070455	23-Feb-2021	SJ PROPERTIES LLC	1,383.00
1070456	23-Feb-2021	HYF INVESTCO, LLC	963.00
1070457	23-Feb-2021	HANDZEL, SHARON C	1,003.00
1070458	23-Feb-2021	PASHAPOUR NIKU, MAZIAR	1,625.00
1070459	23-Feb-2021	AQUINO, MIRA-FLOR T	920.00
1070460	23-Feb-2021	DESERT WIND PROPERTY MANAGEMENT & REAL ESTATE LLC	149.00

1070461	23-Feb-2021	SWH 2017-1 BORROWER, LP	2,802.00
1070462	23-Feb-2021	KATZ, JENNIFER ANN	759.00
1070463	23-Feb-2021	SANTOS, AGNES	660.00
1070464	23-Feb-2021	NGUY HUANG LLC	1,106.00
1070465	23-Feb-2021	SHAO, LAN	3,084.00
1070466	23-Feb-2021	BOSCHEE, CHARLES L	655.00
1070467	23-Feb-2021	BURTON, DOUGLAS J	1,165.00
1070468	23-Feb-2021	YIN, WENBI	1,619.00
1070469	23-Feb-2021	847 RAY LLC	5,616.00
1070470	23-Feb-2021	AZURE SEA LANE LLC	2,480.00
1070471	23-Feb-2021	SFR 2012-1 US WEST LLC	3,452.00
1070472	23-Feb-2021	WL INVESTMENT LLC	1,324.00
1070473	23-Feb-2021	BRAVO, DEBORAH LYNN	778.00
1070474	23-Feb-2021	THOMASIAN, BIKI	772.00
1070475	23-Feb-2021	SHAHIN, GABRIEL	1,420.00
1070476	23-Feb-2021	O'DONNELL, MELISSA	1,201.00
1070477	23-Feb-2021	INVESTAR REAL ESTATE SPECIALISTS LLC	890.00
1070478	23-Feb-2021	GOLD COAST REALTY	1,068.00
1070479	23-Feb-2021	MAYPER, CHAD	736.00
1070480	23-Feb-2021	N/A TOWN SQUARE-65 LP	957.00
1070481	23-Feb-2021	NGUYEN, CALVIN	625.00
1070482	23-Feb-2021	330 N COMANCHE LLC	3,455.00
1070483	23-Feb-2021	LEWERRIT LLC	1,550.00
1070484	23-Feb-2021	1125 CALIFORNIA LLC	1,820.00
1070485	23-Feb-2021	WEINBERG, JAMES M	1,490.00
1070486	23-Feb-2021	JAIN, VIKAS	814.00
1070487	23-Feb-2021	BLATO PROPERTY MANAGEMENT LLC	913.00
1070488	23-Feb-2021	TREVNIC HOLDINGS, INC	934.00
1070489	23-Feb-2021	DALA GROUP, LLC	1,162.00
1070490	23-Feb-2021	SEVEN STRONG ENTERPRISES, LLC	984.00
1070491	23-Feb-2021	MAAG, BLANCA RIVERA	1,036.00
1070492	23-Feb-2021	AZ HOME FOR US	1,021.00
1070493	23-Feb-2021	LEE, KEVIN	1,559.00
1070494	23-Feb-2021	YASSIR, YOUSEF	1,953.00
1070495	23-Feb-2021	LAROUSSI, REDOUANE	372.00
1070496	23-Feb-2021	MARYLAND PALMS APARTMENTS LLC	768.00
1070497	23-Feb-2021	HERNANDEZ, ERIBERTO	995.00
1070498	23-Feb-2021	ANDERSON DUNIGAN EAST VALLEY PM LLC	1,541.00
1070499	23-Feb-2021	STRATEGIC CAPITAL ALLIANCE LTD PARTNERSHIP	10,785.00
1070500	23-Feb-2021	CHANDLER GARDENS	17,735.00
1070501	23-Feb-2021	CABRERA, TERESA	1,650.00
1070502	23-Feb-2021	PALM TRAILS LLC	9,670.00
1070503	23-Feb-2021	WUZ 66 RENTAL LLC	1,138.00
1070504	23-Feb-2021	LUEDY, IRINA	1,303.00
1070505	23-Feb-2021	TRINH, KY Q	1,264.00
1070506	23-Feb-2021	BIG STAR PROPERTIES, LLC	7,048.00
1070507	23-Feb-2021	BROADWAY ROAD PROPERTY LLC	880.00
1070508	23-Feb-2021	RAY ROAD PROPERTY LLC	666.00
1070509	23-Feb-2021	MORTENSEN, GLORIA J	1,100.00
1070510	23-Feb-2021	THY LLC	956.00
1070511	23-Feb-2021	BMF IV AZ LAGUNA VILLAGE LLC	9,844.00
1070512	23-Feb-2021	MASHAYEKHI, MITRA	1,600.00
1070513	23-Feb-2021	GET MULTIFAMILY	934.00
1070514	23-Feb-2021	NPTL 4 LLC	1,380.00
1070515	23-Feb-2021	P.J HUSSEY & ASSOCIATES INC	495.00

1070516	23-Feb-2021	HARTFORD APARTMENTS	3,945.00
1070517	23-Feb-2021	REAL T MANAGEMENT	1,264.00
1070518	23-Feb-2021	JONOVICH, KATINA	1,103.00
1070519	23-Feb-2021	MCLOONE, AMANDA	1,512.00
1070520	23-Feb-2021	GENTILE, JAMES	1,428.00
1070521	23-Feb-2021	GUERRERO, LAURIE	1,370.00
1070522	23-Feb-2021	MILLER, JEFFERY ROBERT	1,600.00
1070523	23-Feb-2021	ABDELKARIM, RABAH	1,174.00
1070524	23-Feb-2021	BURNHAM, TIMOTHY	1,477.00
1070525	23-Feb-2021	SARVI, MICHAEL	1,111.00
1070526	23-Feb-2021	SALZMAN, BART	1,500.00
1070527	23-Feb-2021	AVA HOLDINGS LLC	549.00
1070528	23-Feb-2021	LARSEN DEVELOPMENT LLC	951.00
1070529	23-Feb-2021	FOCUS LLC	3,415.00
1070530	23-Feb-2021	FENG, WINNIE	1,565.00
1070531	23-Feb-2021	CX RENTALS LLC	605.00
1070532	23-Feb-2021	GJONZENELI, MURAT	3,871.00
1070533	23-Feb-2021	VAKKALANKA, SURYANARAYANA	713.00
1070534	23-Feb-2021	JJBMC PROPERTIES LLC	4,095.00
1070535	23-Feb-2021	BIYANI, MANISH	1,450.00
1070536	23-Feb-2021	LAM, CHI MING	1,400.00
1070537	23-Feb-2021	SALEH, ZIAD	1,430.00
1070538	23-Feb-2021	SKOGLUND, NANCY B	1,450.00
1070539	23-Feb-2021	ARIZONA ELITE PROPERTIES	1,625.00
1070540	23-Feb-2021	MCKINLEY, ROSS HARRISON	399.00
1070541	23-Feb-2021	KRUY IN, BUN	865.00
1070542	23-Feb-2021	SIN, BENNY	572.00
1070543	23-Feb-2021	AILEEN CHU HOLDINGS LLC	1,675.00
1070544	23-Feb-2021	WOODS, KAY	1,170.00
1070545	23-Feb-2021	2ND ST INVESTMENTS	864.00
1070546	23-Feb-2021	EDB ENTERPRISE LLC	1,031.00
1070547	23-Feb-2021	POUCHKAREV, ANDREI	1,395.00
1070548	23-Feb-2021	CHANDLER PROPERTY DEVELOPMENT ASSOCIATES LTD PTR (231-1)	27,660.00
1070549	23-Feb-2021	KIANPOUR, FARAMARZ	938.00
1070550	23-Feb-2021	RODRIGUEZ-MESA, IVAN	1,690.00
1070551	23-Feb-2021	KHATRI, SHAH	6,839.00
1070552	23-Feb-2021	ARM OF SAVE THE FAMILY FOUNDATION OF ARIZONA	371.00
1070553	23-Feb-2021	GORE, VIPUL	773.00
1070554	23-Feb-2021	LE, KIEU	1,103.00
1070555	23-Feb-2021	PRICE, MI-SIM	960.00
1070556	23-Feb-2021	GREBE, ROLANDO	919.00
1070557	23-Feb-2021	HOANG, BUUCHAU QUOC	1,476.00
1070558	23-Feb-2021	COSTALES, ABEL	577.00
1070559	23-Feb-2021	CARPENTER, SONJA G	903.00
1070560	23-Feb-2021	HALL, ERIC	807.00
1070561	23-Feb-2021	SINGH, REENA	1,484.00
1070562	23-Feb-2021	SUNSHINE REALTY LLC	801.00
1070563	23-Feb-2021	NGUYEN, NGOC	2,457.00
1070564	23-Feb-2021	XIA, JINGNA	779.00
1070565	23-Feb-2021	XIE, YUN	2,773.00
1070566	23-Feb-2021	MAKEY, JAMES	805.00
1070567	23-Feb-2021	GOVINDARAJAN, OMKAR	827.00
1070568	23-Feb-2021	OARE, ELIZABETH	755.00
1070569	23-Feb-2021	ARIZONA HOMES PLUS	1,510.00
1070570	23-Feb-2021	I & PSSG LLC	1,400.00

1070571	23-Feb-2021	WATTS, ELSKA M.	475.00
1070572	23-Feb-2021	NGUYEN, HONG	1,142.00
1070573	23-Feb-2021	FRESNO INVESTMENTS	2,329.00
1070574	23-Feb-2021	WONG, CHRISTOPHER DINH	692.00
1070575	23-Feb-2021	LIN, RONG CHUN	2,724.00
1070576	23-Feb-2021	BURCH, CHRISTOPHER	1,010.00
1070577	23-Feb-2021	PASQUALINA VITIRITTI TRUSTEE	519.00
1070578	23-Feb-2021	PERSONAL REAL ESTATE SERVICES LLC	499.00
1070579	23-Feb-2021	GILBERT, THURMAN	663.00
1070580	23-Feb-2021	CRUZ, JUAN	497.00
1070581	23-Feb-2021	HADEED, JAMES	1,030.00
1070582	23-Feb-2021	LETS REED LLC	498.00
1070583	23-Feb-2021	VIRDEE, ARVINDER S	1,273.00
1070584	23-Feb-2021	MCNELLIS, JOHN	888.00
1070585	23-Feb-2021	GILBERT, JUSTIN	607.00
1070586	23-Feb-2021	NJOROGE, ELIZABETH	947.00
1070587	23-Feb-2021	WU, SUYUAN LIN	2,811.00
1070588	23-Feb-2021	BARKDOLL PROPERTIES LLC	8,683.00
1070589	23-Feb-2021	GARCIA, CRISTINA	590.00
1070590	23-Feb-2021	ARIZONA LIVING PROPERTY MANAGEMENT, INC	1,379.00
1070591	23-Feb-2021	JDC INVESTMENTS LLC	965.00
1070592	23-Feb-2021	NGUY CONCEPT LLC	1,806.00
1070593	23-Feb-2021	LE, THUC	1,400.00
1070594	23-Feb-2021	S J FOWLER REAL ESTATE INC	710.00
1070595	23-Feb-2021	HADAWAY, MICHELLE VIVIANNE	974.00
1070596	23-Feb-2021	AUSTIN FLECK PROPERTY MANAGEMENT LLC	951.00
1070597	23-Feb-2021	JONES, PATRICIA A.	916.00
1070598	23-Feb-2021	MCKINDLES, JOHN	1,209.00
1070599	23-Feb-2021	LUNDIN, ANDREY	776.00
1070600	23-Feb-2021	KHILLAN, RAJNEEK	1,120.00
1070601	23-Feb-2021	RRC INVESTMENTS LLC	1,071.00
1070602	23-Feb-2021	EPICENTER HOLDINGS LLC	718.00
1070603	23-Feb-2021	OKATI LLC	1,249.00
1070604	23-Feb-2021	WANG, XIAOGANG	982.00
1070605	23-Feb-2021	TALAI, FRANCESCO	297.00
1070606	23-Feb-2021	SURCHIK, EDWARD	967.00
1070607	23-Feb-2021	EKSS LLC	1,578.00
1070608	23-Feb-2021	LEE, LARRY	1,240.00
1070609	23-Feb-2021	AHN, SUNGIL	766.00
1070610	23-Feb-2021	ZHANG, QISHENG	1,189.00
1070611	23-Feb-2021	GUERRERO, ROSE	4,367.00
1070612	23-Feb-2021	ZHANG, JUNLI	1,430.00
1070613	23-Feb-2021	CANO-CARRILLO, GRICELDA	561.00
1070614	23-Feb-2021	GOSKONDA, VENKATESHWAR	289.00
1070615	23-Feb-2021	TAM, VIVIAN	761.00
1070616	25-Feb-2021	CLEANVIEW SEWER INSPECTIONS LLC	8,196.43
1070617	25-Feb-2021	BROWN AND CALDWELL	1,432.08
1070618	25-Feb-2021	ARTISTIC LAND MANAGEMENT INC	30,535.00
1070619	25-Feb-2021	ARIZONA PEST PREVENTION	285.00
1070620	25-Feb-2021	CURTIS BLUE LINE	9,996.63
1070621	25-Feb-2021	CENTRAL ARIZONA PROJECT	16,029.00
1070622	25-Feb-2021	CITY WIDE PEST CONTROL INC	517.00
1070623	25-Feb-2021	CONSULTANT ENGINEERING INC	455.00
1070624	25-Feb-2021	ALL CITY TOWING	148.00
1070625	25-Feb-2021	DEVAU HUMAN RESOURCES	20,139.16

1070626	25-Feb-2021	ARIZONA EMERGENCY PRODUCTS	89,650.75
1070627	25-Feb-2021	BRENNTAG PACIFIC INC	19,037.68
1070628	25-Feb-2021	BANNER OCCUPATIONAL HEALTH SERVICES	7,417.00
1070629	25-Feb-2021	DYE CARBONIC	2,085.17
1070630	25-Feb-2021	CH2M HILL INC	71,177.51
1070631	25-Feb-2021	ARIZONA FURNISHINGS	1,851.55
1070632	25-Feb-2021	DH PACE SYSTEMS INTEGRATION	4,012.00
1070633	25-Feb-2021	CE WILSON CONSULTING, LLC	5,640.00
1070634	25-Feb-2021	BROWN WHOLESALE ELECTRIC	1,847.75
1070635	25-Feb-2021	DT CHANDLER LLC	29,048.97
1070636	25-Feb-2021	ARIZONA'S BEST CHOICE PEST & TERMITE SERVICES	1,456.00
1070637	25-Feb-2021	CHOICE MAINTENANCE AND ASPHALT SERVICES, LLC	34,986.00
1070638	25-Feb-2021	FIGUEROA, HEATHER N	16.08
1070639	25-Feb-2021	NUTRIEN AG SOLUTIONS, INC	4,792.79
1070640	25-Feb-2021	LTI INC	248.00
1070641	25-Feb-2021	MUNICODE	1,508.92
1070642	25-Feb-2021	POLYDYNE, INC.	14,898.00
1070643	25-Feb-2021	ENVIRONMENTAL PLANNING GROUP LLC	3,887.50
1070644	25-Feb-2021	JAMES COOKE & HOBSON	4,197.39
1070645	25-Feb-2021	MARTIN, JEFFREY G	1,521.50
1070646	25-Feb-2021	EWING IRRIGATION	2,687.08
1070647	25-Feb-2021	MAK INDUSTRIES LLC	7,311.55
1070648	25-Feb-2021	ENTELLUS INC	59,595.13
1070649	25-Feb-2021	PHOENIX PUMPS INC	10,044.73
1070650	25-Feb-2021	LAYNE CHRISTENSEN COMPANY	5,400.00
1070651	25-Feb-2021	GOERING, ROBERT, RUBIN, BROGNA, ENOS & TREADWELL-RUBIN, P.C.	2,822.46
1070652	25-Feb-2021	PM PLUMBING & MECHANICAL INC	4,072.45
1070653	25-Feb-2021	SAN DIEGO POLICE EQUIPMENT COMPANY	16,110.72
1070654	25-Feb-2021	WASTE MANAGEMENT	111,214.51
1070655	25-Feb-2021	UNIFIRST CORPORATION	1,068.46
1070656	25-Feb-2021	ARIZONA REPUBLIC, THE	973.69
1070657	25-Feb-2021	SPRINKLER WORLD OF AZ INC	1,313.87
1070658	25-Feb-2021	TOTER LLC	5,479.22
1070659	25-Feb-2021	VERIZON WIRELESS	679.87
1070660	25-Feb-2021	SHANNON S MARTIN CO	5,790.16
1070661	25-Feb-2021	SPIKER SPORTS	368.00
1070662	25-Feb-2021	WIST OFFICE PRODUCTS COMPANY	356.40
1070663	25-Feb-2021	VALLEYWIDE GENERATOR SERVICE LLC	1,620.72
1070664	25-Feb-2021	SHI INTERNATIONAL CORP	98,178.56
1070665	25-Feb-2021	SIMON FAMILY ENTERPRISES INC	13,037.98
1070666	25-Feb-2021	WAXIE SANITARY SUPPLY	92.60
1070667	25-Feb-2021	RJ TORRANCE LLC	0.00
1070668	25-Feb-2021	COANNAH REALTY LLC	0.00
1070669	25-Feb-2021	AZ REALTY PROPERTY HOLDINGS, LLC	0.00
1070670	25-Feb-2021	RAILPROS FIELD SERVICES, INC	0.00
1070671	03-Mar-2021	ORANGE COUNTY HOUSING AUTHORITY	3,228.48
1070672	03-Mar-2021	BECKMAN, KRISTI M	1,551.00
1070673	03-Mar-2021	RJ TORRANCE LLC	568.00
1070674	03-Mar-2021	COANNAH REALTY LLC	1,371.00
1070675	03-Mar-2021	AZ REALTY PROPERTY HOLDINGS, LLC	6,049.00
1070676	03-Mar-2021	XIAO, HONG MEI	1,480.00
1070677	03-Mar-2021	DUPAGE HOUSING AUTHORITY	1,376.74
1070678	03-Mar-2021	847 RAY LLC	1,711.00
1070679	03-Mar-2021	ARIZONA COMMUNITY FOUNDATION	22,100.00
1070680	04-Mar-2021	AMERICAN TELEPHONE	4,128.00

1070681	04-Mar-2021	A/B ACE HARDWARE	124.91
1070682	04-Mar-2021	ARIZONA WATER WORKS SUPPLY	1,675.46
1070683	04-Mar-2021	BALAR EQUIPMENT CORPORATION	1,812.84
1070684	04-Mar-2021	ARTISTIC LAND MANAGEMENT INC	9,572.00
1070685	04-Mar-2021	ARIZONA PEST PREVENTION	85.00
1070686	04-Mar-2021	ANCON	3,927.35
1070687	04-Mar-2021	CITY WIDE PEST CONTROL INC	590.00
1070688	04-Mar-2021	ARIZONA BLUE STAKE INC	1,923.83
1070689	04-Mar-2021	ALL CITY TOWING	12.00
1070690	04-Mar-2021	DEVAU HUMAN RESOURCES	7,095.35
1070691	04-Mar-2021	GONZALEZ, ALEX	4,167.00
1070692	04-Mar-2021	BRENNTAG PACIFIC INC	21,426.16
1070693	04-Mar-2021	BANNER OCCUPATIONAL HEALTH SERVICES	960.00
1070694	04-Mar-2021	DYE CARBONIC	433.31
1070695	04-Mar-2021	CENTURYLINK	48.07
1070696	04-Mar-2021	CH2M HILL INC	5,905.36
1070697	04-Mar-2021	ANDREW'S REFRIGERATIONS INC	267.00
1070698	04-Mar-2021	DUNN-EDWARDS CORPORATION	674.57
1070699	04-Mar-2021	CE WILSON CONSULTING, LLC	5,100.00
1070700	04-Mar-2021	BROWN WHOLESALE ELECTRIC	458.48
1070701	04-Mar-2021	BRIGHTVIEW LANDSCAPE SERVICES, INC	23,679.03
1070702	04-Mar-2021	ARIZONA'S BEST CHOICE PEST & TERMITE SERVICES	14.00
1070703	04-Mar-2021	HORIZON DISTRIBUTORS INC	47.86
1070704	04-Mar-2021	NUTRIEN AG SOLUTIONS, INC	1,552.32
1070705	04-Mar-2021	MUNICODE	37.42
1070706	04-Mar-2021	KIMLEY-HORN AND ASSOCIATES	14,856.24
1070707	04-Mar-2021	EWING IRRIGATION	4,543.66
1070708	04-Mar-2021	LAW OFFICE OF LAURIE GROGAN	4,167.00
1070709	04-Mar-2021	PHOENIX PUMPS INC	600.00
1070710	04-Mar-2021	PIONEER LANDSCAPE CENTERS	222.82
1070711	04-Mar-2021	HENDERSON BELTWAY, LLC	5,933.30
1070712	04-Mar-2021	LAYNE CHRISTENSEN COMPANY	10,668.65
1070713	04-Mar-2021	GOERING, ROBERT, RUBIN, BROGNA, ENOS & TREADWELL-RUBIN, P.C.	7,914.96
1070714	04-Mar-2021	PM PLUMBING & MECHANICAL INC	4,042.09
1070715	04-Mar-2021	IN-PIPE TECHNOLOGY	12,000.00
1070716	04-Mar-2021	SEGAL COMPANY, THE	5,768.75
1070717	04-Mar-2021	WASTE MANAGEMENT	565.76
1070718	04-Mar-2021	UNIFIRST CORPORATION	3,616.68
1070719	04-Mar-2021	VULCAN MATERIALS COMPANY	3,147.09
1070720	04-Mar-2021	SPRINKLER WORLD OF AZ INC	541.49
1070721	04-Mar-2021	SHANNON S MARTIN CO	20,355.00
1070722	04-Mar-2021	SDB INC	8,303.04
1070723	04-Mar-2021	ROADWAY ELECTRIC LLC	98,820.00
1070724	04-Mar-2021	FISHEL COMPANY, THE	437,187.85
1070725	04-Mar-2021	SIMON FAMILY ENTERPRISES INC	3,258.02
1070726	04-Mar-2021	WAXIE SANITARY SUPPLY	9,841.94
1070727	04-Mar-2021	STANTEC CONSULTING SERVICES INC	1,650.00
1070728	04-Mar-2021	UNITED FIBERS LLC	68,178.00
1070729	04-Mar-2021	LAW OFFICE OF JARED ALLEN, THE	4,167.00
1070730	04-Mar-2021	GO GET IT INVESTMENTS LLC	0.00
1070731	04-Mar-2021	CITY PROPERTY MANAGEMENT COMPANY	0.00
1070732	04-Mar-2021	NINEVEH PROPERTIES LLC	0.00
1070733	04-Mar-2021	HENES, HAIDY	0.00
1070734	04-Mar-2021	CORE X SYSTEM LLC	0.00
1070735	11-Mar-2021	ARIZONA GLOVE & SAFETY	93.59

1070736	11-Mar-2021	DEVAU HUMAN RESOURCES	19,772.54
1070737	11-Mar-2021	CARWASH SERVICES OF ARIZONA LLC	2,229.24
1070738	11-Mar-2021	BRENNTAG PACIFIC INC	4,539.04
1070739	11-Mar-2021	DYE CARBONIC	1,603.38
1070740	11-Mar-2021	BRIGHTVIEW LANDSCAPE SERVICES, INC	50,000.00
1070741	11-Mar-2021	ARIZONA'S BEST CHOICE PEST & TERMITE SERVICES	49.00
1070742	11-Mar-2021	ARTISTIC LAND MANAGEMENT INC	3,602.66
1070743	11-Mar-2021	ANCON	4,417.88
1070744	11-Mar-2021	ASCENT AVIATION GROUP INC	23,958.65
1070745	11-Mar-2021	CCS PRESENTATION SYSTEMS	7,282.41
1070746	11-Mar-2021	CENTRAL ARIZONA PROJECT	264,320.00
1070747	11-Mar-2021	CITY WIDE PEST CONTROL INC	1,341.00
1070748	11-Mar-2021	CONSULTANT ENGINEERING INC	848.35
1070749	11-Mar-2021	BAKER COMMODITIES INC	89.00
1070750	11-Mar-2021	BROWN AND CALDWELL	2,374.50
1070751	11-Mar-2021	HORIZON DISTRIBUTORS INC	3,740.50
1070752	11-Mar-2021	PROQUEST LLC	635.48
1070753	11-Mar-2021	LTI INC	372.00
1070754	11-Mar-2021	CURTIS BLUE LINE	4,937.24
1070755	11-Mar-2021	FOSTER ELECTRIC	7,935.61
1070756	11-Mar-2021	O C TANNER RECOGNITION CO	286.61
1070757	11-Mar-2021	FULL SPECTRUM ANALYTICS INC	5,445.42
1070758	11-Mar-2021	KIMLEY-HORN AND ASSOCIATES	8,823.20
1070759	11-Mar-2021	JUST PLANT DESIGNERS INC	165.00
1070760	11-Mar-2021	KRONOS INCORPORATED	73.61
1070761	11-Mar-2021	JAMES COOKE & HOBSON	2,346.50
1070762	11-Mar-2021	MARTIN, JEFFREY G	1,891.25
1070763	11-Mar-2021	JUSTIFACTS CREDENTIAL VERIFICATION, INC.	49.00
1070764	11-Mar-2021	GHASTER PAINTING & COATINGS INC	895.00
1070765	11-Mar-2021	EWING IRRIGATION	1,101.02
1070766	11-Mar-2021	JACOBO LAW FIRM, PLLC	4,167.00
1070767	11-Mar-2021	PM PLUMBING & MECHANICAL INC	4,384.33
1070768	11-Mar-2021	LAW OFFICE OF LYNN R. AROUH	4,167.00
1070769	11-Mar-2021	WASTE MANAGEMENT	8,119.33
1070770	11-Mar-2021	UNIFIRST CORPORATION	239.28
1070771	11-Mar-2021	VULCAN MATERIALS COMPANY	1,469.50
1070772	11-Mar-2021	SAFEWAY SIGN COMPANY	803.80
1070773	11-Mar-2021	SPRINKLER WORLD OF AZ INC	1,763.17
1070774	11-Mar-2021	Y S MANTRI & ASSOCIATES, LLC	2,825.38
1070775	11-Mar-2021	UNIVERSAL FIELD SERVICES INC	3,626.89
1070776	11-Mar-2021	VERIZON WIRELESS	6,949.55
1070777	11-Mar-2021	RITOCH-POWELL & ASSOCIATES	99,934.17
1070778	11-Mar-2021	REDFLEX TRAFFIC SYSTEMS	129.45
1070779	11-Mar-2021	SPIKER SPORTS	690.00
1070780	11-Mar-2021	STARKWEATHER ROOFING INC	1,752.00
1070781	11-Mar-2021	SDB INC	73,364.18
1070782	11-Mar-2021	TOPETE/STONEFIELD INC	161.92
1070783	11-Mar-2021	VALLEYWIDE GENERATOR SERVICE LLC	4,391.60
1070784	11-Mar-2021	SIERRA TRANSPORTATION & TECHNOLOGIES LLC	5,284.36
1070785	11-Mar-2021	SHI INTERNATIONAL CORP	1,204.00
1070786	11-Mar-2021	AMERICAN TRAFFIC SOLUTIONS INC	4,996.93
1070787	11-Mar-2021	SALT WORKS	9,695.15
1070788	11-Mar-2021	WAXIE SANITARY SUPPLY	7,012.67
1070789	16-Mar-2021	BANK OF AMERICA	881,216.53
1070790	17-Mar-2021	SLABAUGH, INGRID	685.00

1070791	17-Mar-2021	SJ PROPERTIES LLC	739.00
1070792	17-Mar-2021	CHANDLER GARDENS	852.00
1070793	17-Mar-2021	BECKMAN, KRISTI M	400.00
1070794	17-Mar-2021	AZ REALTY PROPERTY HOLDINGS, LLC	1,288.00
1070795	18-Mar-2021	ARIZONA'S BEST CHOICE PEST & TERMITE SERVICES	1,617.50
1070796	18-Mar-2021	DELTA DENTAL PLAN OF ARIZONA INC	171,956.87
1070797	18-Mar-2021	VISION SERVICE PLAN OF ARIZONA	23,304.86
1070798	18-Mar-2021	VISION SERVICE PLAN OF ARIZONA	68.94
1070799	18-Mar-2021	VISION SERVICE PLAN OF ARIZONA	4,686.08
1070800	18-Mar-2021	ANTHEM LIFE INSURANCE COMPANY	17,719.26
1070801	18-Mar-2021	TRISTAR ICS, INC	5,736.29
1070802	18-Mar-2021	FLEXIBLE BENEFIT ADMINISTRATORS INC	950.62
1070803	18-Mar-2021	DEVAU HUMAN RESOURCES	8,320.74
1070804	18-Mar-2021	DYE CARBONIC	921.08
1070805	18-Mar-2021	AJP ELECTRIC INC	393,129.01
1070806	18-Mar-2021	ANDREW'S REFRIGERATIONS INC	990.00
1070807	18-Mar-2021	DH PACE SYSTEMS INTEGRATION	48,711.30
1070808	18-Mar-2021	CE WILSON CONSULTING, LLC	5,820.00
1070809	18-Mar-2021	BRIGHTVIEW LANDSCAPE SERVICES, INC	15,676.36
1070810	18-Mar-2021	A/B ACE HARDWARE	269.97
1070811	18-Mar-2021	ARTISTIC LAND MANAGEMENT INC	2,894.23
1070812	18-Mar-2021	AZTEC ENGINEERING	8,960.00
1070813	18-Mar-2021	ANCON	2,901.29
1070814	18-Mar-2021	ARIZONA PET MORTUARY	1,073.00
1070815	18-Mar-2021	CENTRAL ARIZONA PROJECT	245,185.00
1070816	18-Mar-2021	CONSULTANT ENGINEERING INC	51,110.99
1070817	18-Mar-2021	PULICE CONSTRUCTION INC	159,281.42
1070818	18-Mar-2021	KIMLEY-HORN AND ASSOCIATES	75,537.33
1070819	18-Mar-2021	ENVIRONMENTAL PLANNING GROUP LLC	2,284.13
1070820	18-Mar-2021	PCL CONSTRUCTION INC	43,466.26
1070821	18-Mar-2021	GHASTER PAINTING & COATINGS INC	1,895.00
1070822	18-Mar-2021	EWING IRRIGATION	39.30
1070823	18-Mar-2021	PHOENIX PUMPS INC	9,652.98
1070824	18-Mar-2021	PM PLUMBING & MECHANICAL INC	3,481.35
1070825	18-Mar-2021	HOQUE & ASSOCIATES, INC	6,947.50
1070826	18-Mar-2021	WASTE MANAGEMENT	70,337.21
1070827	18-Mar-2021	UNIFIRST CORPORATION	1,076.40
1070828	18-Mar-2021	VULCAN MATERIALS COMPANY	838.09
1070829	18-Mar-2021	SPRINKLER WORLD OF AZ INC	70.51
1070830	18-Mar-2021	SUNLAND, INC	1,066,423.19
1070831	18-Mar-2021	SUPREME OIL CO	6,880.05
1070832	18-Mar-2021	VERIZON WIRELESS	654.50
1070833	18-Mar-2021	SHANNON S MARTIN CO	7,028.75
1070834	18-Mar-2021	TOPETE/STONEFIELD INC	39.38
1070835	18-Mar-2021	WIST OFFICE PRODUCTS COMPANY	315.22
1070836	18-Mar-2021	WAXIE SANITARY SUPPLY	33,450.48
1070837	18-Mar-2021	ASR CONSTRUCTION GROUP LLC	0.00
1070838	25-Mar-2021	ARTHUR J GALLAGHER RISK MANAGEMENT SERVICES INC	30.00
1070839	25-Mar-2021	ARTHUR J GALLAGHER RISK MANAGEMENT SERVICES INC	30.00
1070840	25-Mar-2021	CHRISTMAS LIGHT DECORATORS	593.72
1070841	25-Mar-2021	A/B ACE HARDWARE	170.30
1070842	25-Mar-2021	BALAR EQUIPMENT CORPORATION	98.65
1070843	25-Mar-2021	BOYS & GIRLS CLUB OF THE EAST VALLEY	52,650.00
1070844	25-Mar-2021	ARTISTIC LAND MANAGEMENT INC	980.00
1070845	25-Mar-2021	ARIZONA PEST PREVENTION	170.00

1070846	25-Mar-2021	ANCON	7,925.91
1070847	25-Mar-2021	ALL THE KING'S FLAGS	319.98
1070848	25-Mar-2021	ARIZONA OFFICE TECHNOLOGIES	2.26
1070849	25-Mar-2021	ARIZONA BLUE STAKE INC	1,923.83
1070850	25-Mar-2021	ALL CITY TOWING	447.50
1070851	25-Mar-2021	DEVAU HUMAN RESOURCES	16,180.98
1070852	25-Mar-2021	BRENNTAG PACIFIC INC	31,347.75
1070853	25-Mar-2021	BSN SPORTS INC	1,441.26
1070854	25-Mar-2021	DYE CARBONIC	1,130.48
1070855	25-Mar-2021	AZCEND	2,600,000.00
1070856	25-Mar-2021	DH PACE SYSTEMS INTEGRATION	12,272.00
1070857	25-Mar-2021	BROWN WHOLESALE ELECTRIC	7,690.62
1070858	25-Mar-2021	DT CHANDLER LLC	29,048.97
1070859	25-Mar-2021	BRIGHTVIEW LANDSCAPE SERVICES, INC	6,510.00
1070860	25-Mar-2021	ARIZONA'S BEST CHOICE PEST & TERMITE SERVICES	14.00
1070861	25-Mar-2021	CHOICE MAINTENANCE AND ASPHALT SERVICES, LLC	45,433.52
1070862	25-Mar-2021	ASR CONSTRUCTION GROUP LLC	4,663.95
1070863	25-Mar-2021	VOYA FINANCIAL	74,339.99
1070864	25-Mar-2021	HORIZON DISTRIBUTORS INC	647.87
1070865	25-Mar-2021	LTI INC	248.00
1070866	25-Mar-2021	CURTIS BLUE LINE	1,710.45
1070867	25-Mar-2021	FOSTER ELECTRIC	193.51
1070868	25-Mar-2021	H&E EQUIPMENT SERVICES INC	12,429.92
1070869	25-Mar-2021	POLYDYNE, INC.	36,669.06
1070870	25-Mar-2021	ENVIRONMENTAL PLANNING GROUP LLC	245.00
1070871	25-Mar-2021	GREATER PHOENIX ECONOMIC COUNCIL	32,663.50
1070872	25-Mar-2021	JAMES COOKE & HOBSON	4,875.93
1070873	25-Mar-2021	MARTIN, JEFFREY G	1,620.95
1070874	25-Mar-2021	EWING IRRIGATION	2,980.65
1070875	25-Mar-2021	GOODMANS INTERIOR STRUCTURES	7,240.48
1070876	25-Mar-2021	HENDERSON BELTWAY, LLC	5,933.30
1070877	25-Mar-2021	JOVOS INC	6,056.75
1070878	25-Mar-2021	PM PLUMBING & MECHANICAL INC	5,236.66
1070879	25-Mar-2021	SEGAL COMPANY, THE	7,800.00
1070880	25-Mar-2021	WASTE MANAGEMENT	917,367.23
1070881	25-Mar-2021	UNIFIRST CORPORATION	1,474.62
1070882	25-Mar-2021	VULCAN MATERIALS COMPANY	944.67
1070883	25-Mar-2021	ARIZONA REPUBLIC, THE	1,486.06
1070884	25-Mar-2021	SPRINKLER WORLD OF AZ INC	1,022.00
1070885	25-Mar-2021	STOTZ EQUIPMENT	215.41
1070886	25-Mar-2021	VERIZON WIRELESS	160.06
1070887	25-Mar-2021	SHANNON S MARTIN CO	16,715.55
1070888	25-Mar-2021	SPEEDIE & ASSOCIATES	230.00
1070889	25-Mar-2021	WIST OFFICE PRODUCTS COMPANY	458.69
1070890	25-Mar-2021	VALLEYWIDE GENERATOR SERVICE LLC	2,812.89
1070891	25-Mar-2021	SIERRA TRANSPORTATION & TECHNOLOGIES LLC	4,958.80
1070892	25-Mar-2021	THE FISHEL COMPANY	189,754.94
1070893	25-Mar-2021	SILVA LAW FIRM PC	4,167.00
1070894	25-Mar-2021	WAXIE SANITARY SUPPLY	7,268.78
1070895	25-Mar-2021	REGIONAL PUBLIC TRANS AUTHORITY-VALLEY METRO	0.00
1070896	25-Mar-2021	BARKDOLL PROPERTIES LLC	464.00
1070897	25-Mar-2021	STRATEGIC CAPITAL ALLIANCE LTD PARTNERSHIP	566.00
1070898	25-Mar-2021	ARIZONA COMMUNITY FOUNDATION	208,700.00
1070899	29-Mar-2021	BMF IV AZ LAGUNA VILLAGE LLC	9,844.00
1070900	29-Mar-2021	MASHAYEKHI, MITRA	1,600.00

1070901	29-Mar-2021	GET MULTIFAMILY	985.00
1070902	29-Mar-2021	NPTL 4 LLC	1,380.00
1070903	29-Mar-2021	P.J HUSSEY & ASSOCIATES INC	495.00
1070904	29-Mar-2021	HARTFORD APARTMENTS	4,254.00
1070905	29-Mar-2021	REAL T MANAGEMENT	1,264.00
1070906	29-Mar-2021	BECKMAN, KRISTI M	1,551.00
1070907	29-Mar-2021	JONOVICH, KATINA	1,103.00
1070908	29-Mar-2021	RJ TORRANCE LLC	168.00
1070909	29-Mar-2021	COANNAH REALTY LLC	1,371.00
1070910	29-Mar-2021	AZ REALTY PROPERTY HOLDINGS, LLC	8,115.00
1070911	29-Mar-2021	GO GET IT INVESTMENTS LLC	915.00
1070912	29-Mar-2021	CITY PROPERTY MANAGEMENT COMPANY	575.00
1070913	29-Mar-2021	NINEVEH PROPERTIES LLC	1,549.00
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1070915	29-Mar-2021	MCNELLIS, JOHN	888.00
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1070917	29-Mar-2021	NJOROGE, ELIZABETH	947.00
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1070920	29-Mar-2021	GARCIA, CRISTINA	590.00
1070921	29-Mar-2021	ARIZONA LIVING PROPERTY MANAGEMENT, INC	1,340.00
1070922	29-Mar-2021	JDC INVESTMENTS LLC	965.00
1070923	29-Mar-2021	NGUY CONCEPT LLC	1,806.00
1070924	29-Mar-2021	LE, THUC	1,400.00
1070925	29-Mar-2021	S J FOWLER REAL ESTATE INC	710.00
1070926	29-Mar-2021	HADAWAY, MICHELLE VIVIANNE	974.00
1070927	29-Mar-2021	AUSTIN FLECK PROPERTY MANAGEMENT LLC	951.00
1070928	29-Mar-2021	HERNANDEZ, ERIBERTO	995.00
1070929	29-Mar-2021	ANDERSON DUNIGAN EAST VALLEY PM LLC	1,308.00
1070930	29-Mar-2021	STRATEGIC CAPITAL ALLIANCE LTD PARTNERSHIP	11,516.00
1070931	29-Mar-2021	CHANDLER GARDENS	18,696.00
1070932	29-Mar-2021	CABRERA, TERESA	1,650.00
1070933	29-Mar-2021	PALM TRAILS LLC	8,500.00
1070934	29-Mar-2021	WUZ 66 RENTAL LLC	1,138.00
1070935	29-Mar-2021	LUEDY, IRINA	1,303.00
1070936	29-Mar-2021	TRINH, KY Q	1,264.00
1070937	29-Mar-2021	BIG STAR PROPERTIES, LLC	7,048.00
1070938	29-Mar-2021	BROADWAY ROAD PROPERTY LLC	880.00
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1070946	29-Mar-2021	RRC INVESTMENTS LLC	1,071.00
1070947	29-Mar-2021	EPICENTER HOLDINGS LLC	718.00
1070948	29-Mar-2021	OKATI LLC	1,249.00
1070949	29-Mar-2021	WANG, XIAOGANG	982.00
1070950	29-Mar-2021	TALAI, FRANCESCO	297.00
1070951	29-Mar-2021	SLABAUGH, INGRID	1,061.00
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1070953	29-Mar-2021	EKSS LLC	1,578.00
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1070955	29-Mar-2021	XIAO, HONG MEI	1,480.00

1070956	29-Mar-2021	ZHANG, QISHENG	1,189.00
1070957	29-Mar-2021	GUERRERO, ROSE	4,367.00
1070958	29-Mar-2021	ZHANG, JUNLI	1,430.00
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1070961	29-Mar-2021	TAM, VIVIAN	761.00
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1070963	29-Mar-2021	GENTILE, JAMES	1,428.00
1070964	29-Mar-2021	GUERRERO, LAURIE	1,370.00
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1070966	29-Mar-2021	ABDELKARIM, RABAH	1,174.00
1070967	29-Mar-2021	BURNHAM, TIMOTHY	1,477.00
1070968	29-Mar-2021	SARVI, MICHAEL	1,111.00
1070969	29-Mar-2021	SALZMAN, BART	775.00
1070970	29-Mar-2021	AVA HOLDINGS LLC	512.00
1070971	29-Mar-2021	LARSEN DEVELOPMENT LLC	951.00
1070972	29-Mar-2021	FOCUS LLC	3,415.00
1070973	29-Mar-2021	FENG, WINNIE	1,565.00
1070974	29-Mar-2021	CX RENTALS LLC	605.00
1070975	29-Mar-2021	GJONZENELI, MURAT	3,868.00
1070976	29-Mar-2021	VAKKALANKA, SURYANARAYANA	713.00
1070977	29-Mar-2021	SJ PROPERTIES LLC	2,231.00
1070978	29-Mar-2021	HYF INVESTCO, LLC	963.00
1070979	29-Mar-2021	HANDZEL, SHARON C	1,003.00
1070980	29-Mar-2021	PASHAPOUR NIKU, MAZIAR	1,625.00
1070981	29-Mar-2021	AQUINO, MIRA-FLOR T	934.00
1070982	29-Mar-2021	DESERT WIND PROPERTY MANAGEMENT & REAL ESTATE LLC	347.00
1070983	29-Mar-2021	SWH 2017-1 BORROWER, LP	2,802.00
1070984	29-Mar-2021	KATZ, JENNIFER ANN	759.00
1070985	29-Mar-2021	SANTOS, AGNES	660.00
1070986	29-Mar-2021	NGUY HUANG LLC	1,106.00
1070987	29-Mar-2021	SHAO, LAN	3,086.00
1070988	29-Mar-2021	BOSCHEE, CHARLES L	655.00
1070989	29-Mar-2021	BURTON, DOUGLAS J	1,165.00
1070990	29-Mar-2021	YIN, WENBI	1,619.00
1070991	29-Mar-2021	847 RAY LLC	6,487.00
1070992	29-Mar-2021	AZURE SEA LANE LLC	2,480.00
1070993	29-Mar-2021	SFR 2012-1 US WEST LLC	3,452.00
1070994	29-Mar-2021	WL INVESTMENT LLC	1,324.00
1070995	29-Mar-2021	BRAVO, DEBORAH LYNN	778.00
1070996	29-Mar-2021	THOMASIAN, BIKI	772.00
1070997	29-Mar-2021	SHAHIN, GABRIEL	1,420.00
1070998	29-Mar-2021	O'DONNELL, MELISSA	1,264.00
1070999	29-Mar-2021	INVESTAR REAL ESTATE SPECIALISTS LLC	890.00
1071000	29-Mar-2021	GOLD COAST REALTY	1,068.00
1071001	29-Mar-2021	MAYPER, CHAD	736.00
1071002	29-Mar-2021	N/A TOWN SQUARE-65 LP	957.00
1071003	29-Mar-2021	NGUYEN, CALVIN	625.00
1071004	29-Mar-2021	330 N COMANCHE LLC	3,455.00
1071005	29-Mar-2021	LEWERRIT LLC	1,550.00
1071006	29-Mar-2021	1125 CALIFORNIA LLC	1,820.00
1071007	29-Mar-2021	WEINBERG, JAMES M	1,490.00
1071008	29-Mar-2021	JAIN, VIKAS	814.00
1071009	29-Mar-2021	BLATO PROPERTY MANAGEMENT LLC	913.00
1071010	29-Mar-2021	TREVNIC HOLDINGS, INC	934.00

1071011	29-Mar-2021	DALA GROUP, LLC	1,162.00
1071012	29-Mar-2021	SEVEN STRONG ENTERPRISES, LLC	932.00
1071013	29-Mar-2021	MAAG, BLANCA RIVERA	1,036.00
1071014	29-Mar-2021	AZ HOME FOR US	1,021.00
1071015	29-Mar-2021	LEE, KEVIN	1,559.00
1071016	29-Mar-2021	YASSIR, YOUSEF	1,953.00
1071017	29-Mar-2021	LAROUSSI, REDOUANE	372.00
1071018	29-Mar-2021	MARYLAND PALMS APARTMENTS LLC	768.00
1071019	29-Mar-2021	WATTS, ELSKA M.	475.00
1071020	29-Mar-2021	NGUYEN, HONG	1,142.00
1071021	29-Mar-2021	FRESNO INVESTMENTS	273.00
1071022	29-Mar-2021	WONG, CHRISTOPHER DINH	692.00
1071023	29-Mar-2021	LIN, RONG CHUN	2,724.00
1071024	29-Mar-2021	BURCH, CHRISTOPHER	1,010.00
1071025	29-Mar-2021	PASQUALINA VITIRITTI TRUSTEE	512.00
1071026	29-Mar-2021	PERSONAL REAL ESTATE SERVICES LLC	499.00
1071027	29-Mar-2021	GILBERT, THURMAN	663.00
1071028	29-Mar-2021	CRUZ, JUAN	497.00
1071029	29-Mar-2021	HADEED, JAMES	1,030.00
1071030	29-Mar-2021	LETS REED LLC	498.00
1071031	29-Mar-2021	VIRDEE, ARVINDER S	1,273.00
1071032	29-Mar-2021	JJBMC PROPERTIES LLC	4,095.00
1071033	29-Mar-2021	BIYANI, MANISH	242.00
1071034	29-Mar-2021	LAM, CHI MING	1,400.00
1071035	29-Mar-2021	SALEH, ZIAD	1,430.00
1071036	29-Mar-2021	SKOGLUND, NANCY B	1,450.00
1071037	29-Mar-2021	ARIZONA ELITE PROPERTIES	1,625.00
1071038	29-Mar-2021	MCKINLEY, ROSS HARRISON	399.00
1071039	29-Mar-2021	KRUY IN, BUN	865.00
1071040	29-Mar-2021	SIN, BENNY	572.00
1071041	29-Mar-2021	AILEEN CHU HOLDINGS LLC	1,675.00
1071042	29-Mar-2021	WOODS, KAY	1,170.00
1071043	29-Mar-2021	2ND ST INVESTMENTS	864.00
1071044	29-Mar-2021	EDB ENTERPRISE LLC	1,031.00
1071045	29-Mar-2021	POUCHKAREV, ANDREI	1,395.00
1071046	29-Mar-2021	CHANDLER PROPERTY DEVELOPMENT ASSOCIATES LTD PTR (231-1)	27,512.00
1071047	29-Mar-2021	KIANPOUR, FARAMARZ	516.00
1071048	29-Mar-2021	RODRIGUEZ-MESA, IVAN	1,690.00
1071049	29-Mar-2021	KHATRI, SHAH	6,839.00
1071050	29-Mar-2021	ARM OF SAVE THE FAMILY FOUNDATION OF ARIZONA	371.00
1071051	29-Mar-2021	GORE, VIPUL	773.00
1071052	29-Mar-2021	LE, KIEU	1,103.00
1071053	29-Mar-2021	PRICE, MI-SIM	960.00
1071054	29-Mar-2021	GREBE, ROLANDO	919.00
1071055	29-Mar-2021	HOANG, BUUCHAU QUOC	1,695.00
1071056	29-Mar-2021	COSTALES, ABEL	577.00
1071057	29-Mar-2021	CARPENTER, SONJA G	903.00
1071058	29-Mar-2021	HALL, ERIC	807.00
1071059	29-Mar-2021	SINGH, REENA	1,484.00
1071060	29-Mar-2021	SUNSHINE REALTY LLC	801.00
1071061	29-Mar-2021	NGUYEN, NGOC	2,274.00
1071062	29-Mar-2021	XIA, JINGNA	779.00
1071063	29-Mar-2021	XIE, YUN	2,773.00
1071064	29-Mar-2021	MAKEY, JAMES	805.00
1071065	29-Mar-2021	GOVINDARAJAN, OMKAR	827.00

1071066	29-Mar-2021	OARE, ELIZABETH	755.00
1071067	29-Mar-2021	ARIZONA HOMES PLUS	1,510.00
1071068	29-Mar-2021	I & PSSG LLC	764.00

CHANDLER arizona
Community of Innovation

City Council Memorandum **Neighborhood Resources** **Memo No.** NR21-010

Date: April 19, 2021
To: Mayor and Council
Thru: Joshua H. Wright, Acting City Manager
Debra Stapleton, Assistant City Manager
Leah Powell, Neighborhood Resources Director
From: Karin Bishop, Community Development and Resources Supervisor
Subject: Resolution No. 5459 Approving and Authorizing the Acting City Manager or His Designee to Execute and Submit the Community Development Block Grant Program Year 2021–2022 Annual Action Plan to the United States Department of Housing and Urban Development and Execute All Subrecipient Contracts

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Proposed Motion:

Move that City Council pass and adopt Resolution No. 5459 approving and authorizing the Acting City Manager or his designee to execute and submit the Community Development Block Grant (CDBG) Program Year 2021–2022 Annual Action Plan to the United States Department of Housing and Urban Development (HUD) and execute all subrecipient contracts.

Background:

Each year, the City of Chandler receives federal CDBG funding, administered by HUD, to develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for persons with low and moderate income. Funds support a wide range of community development activities directed toward revitalizing neighborhoods, economic development, and providing improved community facilities and services.

As a prerequisite for receiving CDBG funding, the City of Chandler is required to prepare and submit an Annual Action Plan that serves as the formal application for the use of entitlement funds that are received by the City of Chandler. The Annual Action Plan defines the one-year activities in relationship to the five-year goals and objectives of the 2020-2025 Consolidated Plan approved by City Council on June 25, 2020.

In compliance with HUD regulations and the Citizen Participation Plan, the City held a 30-day public comment period regarding the draft Program Year 2021-2022 Annual Action Plan, which included the Housing and Human Services Commission's funding recommendations based on anticipated formula funding for Program Year 2021–2022. The public comment period began Tuesday, March 22, 2021, and ended Tuesday, April 20, 2021. In addition, two public hearings were held on February 10, 2021, and on April 7, 2021, to ensure multiple opportunities for input from the community regarding the draft Program Year 2021–2022 Annual Action Plan. Public comments received during the public comment period will be included in the finalized report submitted to HUD. A copy of the Program Year 2021-2022 Annual Action Plan Executive Summary is attached.

Discussion:

HUD released the Program Year 2021-2022 annual allocation on February 25, 2021. The CDBG annual allocation for Program Year 2021-2022 is $1,447,060.00, an increase of $3,353.00 from the prior program year. Funds available for allocation include the $1,447,060.00 in formula funding anticipated for Program Year 2021-2022 and an additional $122,030.60 in recaptured or unallocated funds from Program Year 2019-2020. The City will utilize $217,059.00 for Public Services; $1,062,619.00 for Capital Projects, Housing, and Neighborhood Revitalization; and $289,412.00 for Program Administration. The City's Program Year 2021-2022 CDBG Program Descriptions and Funding Recommendations are also attached.

Financial Implications:

The City of Chandler will utilize CDBG federal entitlement funds to support recommended program activities. No match is required. The City of Chandler pays for services supported by CDBG funds and then submits a request for reimbursement to HUD.

Attachments

Resolution No. 5459

FY 2021-2022 Annual Action Plan Executive Summary

FY 2021-2022 CDBG Funding Recommendations and Descriptions

RESOLUTION NO. 5459

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CHANDLER, MARICOPA COUNTY, ARIZONA, APPROVING AND AUTHORIZING THE ACTING CITY MANAGER OR HIS DESIGNEE TO EXECUTE AND SUBMIT THE COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM YEAR 2021–2022 ANNUAL ACTION PLAN TO THE UNITED STATES DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT AND EXECUTE ALL SUBRECIPIENT CONTRACTS.

WHEREAS, as a prerequisite for receiving Community Development Block Grant ("CDBG") funding, the City of Chandler is required every five (5) years, to prepare and adopt a Five–Year Consolidated Plan, and also required to prepare and adopt an Annual Action Plan each year, to be sent to the United States Department of Housing and Urban Development ("HUD") to establish priorities for future funding decisions; and

WHEREAS, the City of Chandler has, in coordination with the City's Housing and Human Services Commission, assessed needs, held public hearings, and presented the draft Program Year 2021–2022 Annual Action Plan for public consideration; and

WHEREAS, the draft Program Year 2021–2022 Annual Action Plan has been available for public comment for the HUD required 30-day citizen participation review and comment period; and

WHEREAS, the City of Chandler, as a member of the Maricopa HOME Consortium, has agreed to comply with the citizen participation plan prepared by the Maricopa County Human Services Department on behalf of all HOME consortium members; and

WHEREAS, this Council has determined by reviewing all pertinent information that it is necessary and in the best interest of the City of Chandler to approve and authorize the submittal to HUD of the Program Year 2021–2022 Annual Action Plan.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Chandler, Arizona as follows:

Section 1. Approves the Program Year 2021–2022 Annual Action Plan a copy of which shall be kept on file in the office of the Director of Neighborhood Resources.

Section 2. Approves and authorizes the Acting City Manager, or his designee, to execute and submit the aforesaid Program Year 2021–2022 Annual Action Plan with all documents and materials as may be required to the United States Department of Housing and Urban Development.

Section 3. Authorizes the Acting City Manager, or his designee, to provide the required policy and administrative assurances including civil rights, equal opportunity, citizen participation, relocation and property acquisition, environmental assurances, labor standards, and others as may be required by federal law.

Section 4. Authorizes the Acting City Manager, or his designee, to take those actions necessary and prudent to implement the program including, but not limited to, the signing of contracts, the expenditure of funds, the hiring of personnel or contractors, the scheduling of activities, the establishment of procedures for monitoring and evaluation of program activities, and other steps necessary to ensure that the program can be carried out in a timely and effective manner.

PASSED AND ADOPTED by the City Council of the City of Chandler, Arizona, this ____ day of April, 2021.

ATTEST:

_____ _____
CITY CLERK MAYOR

CERTIFICATION

I HEREBY CERTIFY that the above and foregoing Resolution No. 5459 was duly passed and adopted by the City Council of Chandler, Arizona, at a regular meeting held on the _____ day of April, 2021 and that a quorum was present thereat.

_____
CITY CLERK

APPROVED AS TO FORM:

_____
CITY ATTORNEY





Annual Action Plan

Executive Summary

FY 2021-2022





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What is the Annual Action Plan?

The Annual Action Plan (Action Plan) is a formal document that details how the City of Chandler (City) plans on utilizing Community Development Block Grant (CDBG) and HOME Investment Partnership (HOME) funds to serve the community in the coming program year. The Action Plan is part of the Consolidated Planning process, which is designed to help states and local jurisdictions to assess their affordable housing and community development needs and market conditions, and to make data-driven, place-based investment decisions. Through the Consolidated Plan, grantee jurisdictions, such as the City of Chandler, engage the community, both in the process of developing and reviewing the proposed plan, and as partners and stakeholders in the implementation of Community Development programs. By consulting and collaborating with other public and private entities, the City of Chandler can align and coordinate community development programs with a range of other plans, programs and resources to achieve greater impact. The Consolidated Plan describes the City's community development priorities and multiyear goals based on an assessment of housing and community development needs, an analysis of housing and economic market conditions and available resources.

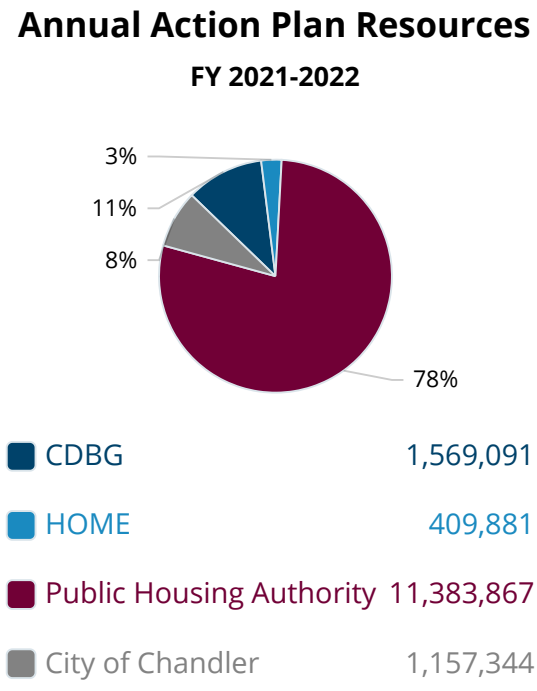
The Consolidated Plan is carried out through Annual Action Plans, which provide a concise summary of the actions, activities, and the specific federal and non-federal resources that will be used each year to address the priority needs and specific goals identified by the Consolidated Plan. The FY 2020-2021 Action Plan provides a brief description of the programs and projects proposed by applicants for the coming year, and the City's funding recommendations for CDBG funds.

The City is also a member of the Maricopa HOME Consortium (HOME Consortium). The HOME Consortium is the “lead agency” for HUD HOME funds. The City applies for and receives HOME funds through the HOME Consortium's Action Plan. Descriptions of HOME-funded activities proposed by the City are included in Maricopa County’s Consolidated Plan and Action Plan.

The City makes funding allocations based on community input and priorities. More information about the community input process can be found on page 13. Allocations for CDBG and HOME funds are based on the anticipated FY 2021-2022 federal allocations from HUD. The City of Chandler Housing and Human Services Commission (HHSC) reviews and evaluates proposals for CDBG and HOME funds, and makes recommendations to City Council. City Council is scheduled to vote on the recommendations on April 22, 2021.

Resources

The Neighborhood Resources Department (NRD) utilizes a variety of federal and local resources to fulfill it's mission of preserving neighborhoods, providing affordable housing, offering community programs, and promoting diversity. Federal funds include CDBG funds awarded by HUD, HOME funds awarded by HUD and passed through the HOME Consortium, and funds awarded to the City of Chandler Public Housing Authority by HUD to support the Section 8 and Public Housing Programs. The City of Chandler also provides General Funds to leverage federal funds and increase the level of services to Chandler residents.



Geographic Priority

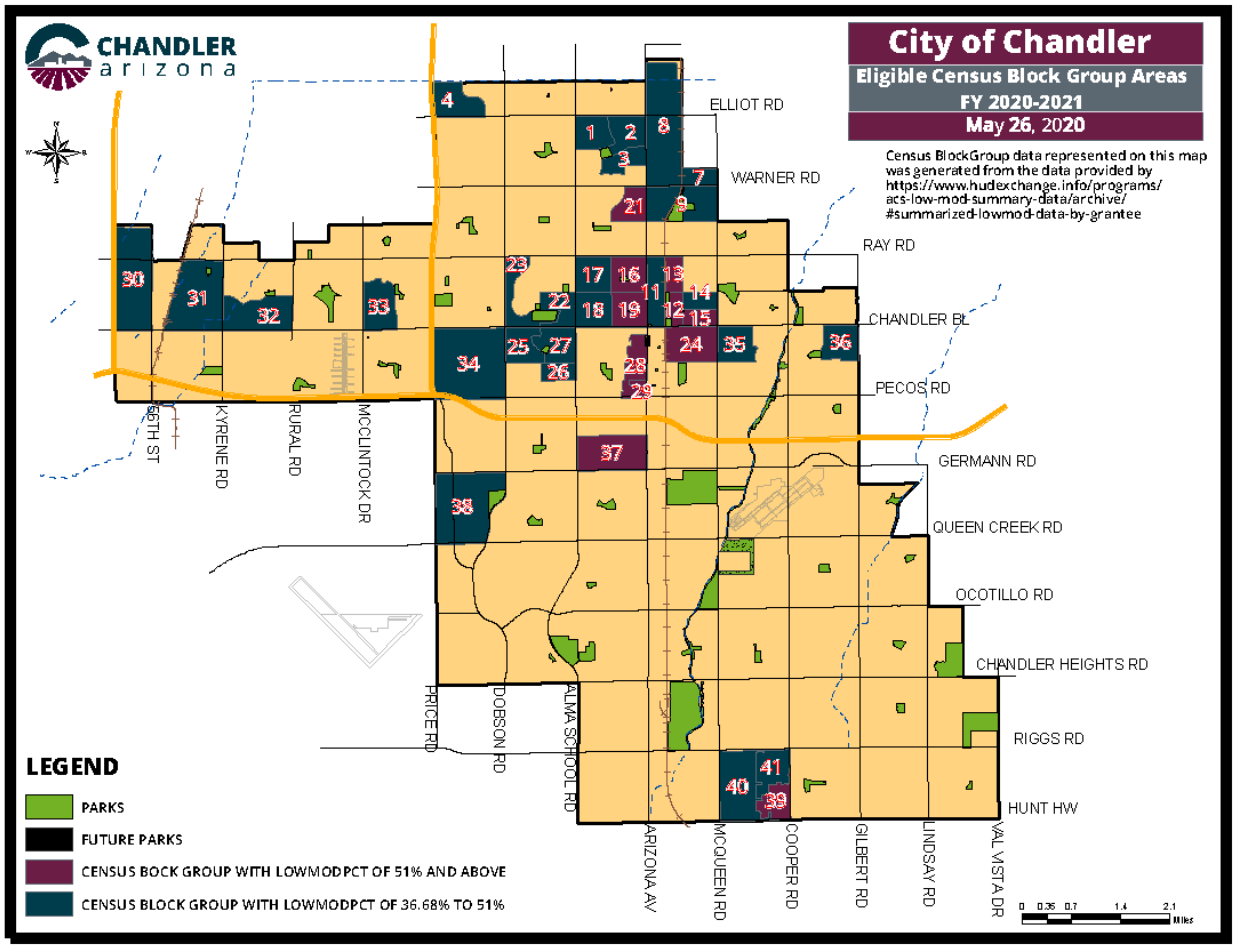
The City of Chandler consists of approximately 65 square miles and shares boundaries with the Town of Gilbert, Cities of Mesa, Phoenix, and Tempe, and the Gila River Indian Community. Chandler has reached its physical geographic limits, with the exception of a few remaining county islands. Downtown Chandler and several neighborhoods in zip codes in 85224 and 85225 are long-established and have higher concentrations of low and moderate income and minority households. There are 11 Census Block Groups where at least 51% of the population has low and moderate income, and another 26 where at least 36.68% of the population has low and moderate income; these are CDBG-eligible areas.

CDBG funding will be prioritized for residents who have low and moderate income, special needs, or are experiencing homelessness. Capital projects and code enforcement provide area benefit and are targeted in CDBG-eligible areas. During Fiscal Year 2021-2022, Chandler will invest approximately 11% of CDBG resources in CDBG-eligible areas.

The Neighborhood Resources Department partners with other City departments and nonprofit organizations to assist vulnerable households and promote residential and neighborhood stability in a variety of ways including:

- Infrastructure improvements for parks, streets, water systems, and street lighting;
- Crisis, stabilization, and support services for households experiencing hunger and homelessness; at-risk youth; Veterans and older adults; and
- Prevention and reduction of deteriorated areas through code enforcement and homeowner-occupied housing rehabilitation.

Neighborhood and community programs are offered in partnership with the Chandler Police Department, which educates neighborhoods and assists with block watch programs. In addition, City Code Enforcement offers training and education on common code violations to avoid and address deteriorating conditions.



CDBG Public Service Applications

- A New Leaf, Inc. – Homeless Shelter Services. Funding is requested to provide emergency shelter and support services to individuals and families experiencing homelessness in Chandler. Funding will support two .75 FTE Support Partners, who will provide direct case management support to families and individuals residing at La Mesita (family shelter) and East Valley Men's Center.

- City of Chandler Community Development – Client Services. Funding is requested to provide community navigation and client services to individuals and families experiencing unsheltered homelessness in Chandler. This funding supports .5 FTE Client Services Specialist and 1 FTE Community Navigator who will identify and establish relationships; coordinate care and communications with appropriate service providers; facilitate access to housing; and support ongoing stability services.

- City of Chandler Housing and Redevelopment – Public Housing Youth Program. Funding is requested to provide after school and intersession programming to youth, ages 6-18, who reside in Chandler's four Public Housing communities. Activities include academic support; mentoring; youth development; arts; books and reading services; and sports and recreation. Programming is offered Monday through Friday on regular school days at each public housing community. During intersession, youth from all four communities come together to participate in regular programming and special events. In the summer months, activities are offered in the morning for younger children, in the afternoon for all ages, and in the evening for teens.



- Save the Family – Case Coordination and Homeless Housing. Funding is requested to assist Chandler families experiencing homelessness in obtaining and maintaining permanent housing through long-term shelter, rapid rehousing, and case coordination. Save the Family is unique in its provision of a scattered-site long-term shelter model, which allows families to stay integrated in their community near their natural support systems while they are in transition to permanency. Scattered-site shelter is provided in the cities of Mesa and Tempe. Scattered-site rapid rehousing services are provided throughout Maricopa County, but primarily in the East Valley cities of Chandler, Mesa, Tempe, Scottsdale, and Gilbert.

- Southwest Fair Housing Council – Southwest Media & Enforcement Campaign. Funding is requested to develop a fair housing media campaign for the City of Chandler. The media campaign would be designed to inform potential victims of housing discrimination, their fair housing rights and information about the services provided by Southwest Fair Housing Council (SWFHC). SWFHC is a fully-funded, statewide enforcement agency that supports individuals whose fair housing rights may have been violated by providing intake and referrals to appropriate agencies, fair housing counseling, and assistance through the entire fair housing complaint process.

CDBG Capital Projects, Housing, and Neighborhood Revitalization Applications

- Central Arizona Shelter Services – Critical Shelter Hot Water Heater Improvements. Funding is requested to replace three hot water heaters at the emergency shelter located in Downtown Phoenix that houses more than 400 single adults each night. Replacement of the hot water heaters would provide hot showers and clean clothes to shelter residents.

- COC Code Enforcement – Low–Mod Neighborhoods. Funding is requested to continue the systematic, proactive inspection program in CDBG eligible areas, with an emphasis on north Chandler. The program supports 1.5 full-time Code Inspectors and .3 full-time Neighborhood Preservation Technician specifically assigned to initiate code enforcement inspections and take necessary enforcement actions to remediate neighborhood degradation. Residents receive an advisory notice providing information about common code violations for self-evaluation and correction prior to inspection.

- COC Housing and Redevelopment – Relocation Assistance. Funding is requested to support a future Rental Assistance Demonstration (RAD) project, that would provide relocation assistance to households with low and moderate income that are impacted by the RAD project.

- FSL Home Improvements – Chandler Home Repair Program. Funding is requested for single-family owner-occupied emergency repairs, minor repairs, ADA modifications and exterior improvements for Chandler residents with low and moderate income. The ADA modifications and exterior improvements will increase health and safety and correct code violations. The Exterior Improvement Loan Program (EILP) offers up to $20,000 for exterior improvements to address blighted conditions, and revitalize the property and surrounding neighborhood in the form of zero percent interest loans, which are forgivable over five years. The Americans with Disabilities Act (ADA) program offers up to $10,000 for persons with disabilities to modify their homes so they can continue to live safely and comfortably. This program is a continuation of the current partnership with the City of Chandler Neighborhood Resources Department. The City will continue to process client applications directly through the Homeowner Rehabilitation grant. FSL's role will include home inspections, scope of work creation, contractor procurement, construction oversight, and billing/reporting.







HOME Applications

- A New Leaf – Tenant-Based Rental Assistance. Funding is requested to provide Tenant-Based Rental Assistance (TBRA) for households experiencing homelessness in Chandler. HOME TBRA funds will be used for direct housing assistance for a period of up to 24 months per household.

- ARM of Save the Family Foundation of Arizona, Inc. – Acquisition/Rehabilitation of Affordable Rental Housing. Funding is requested to add one unit of affordable rental housing in the Chandler market for families with income below 60% Area Median Income. ARM of Save the Family will acquire and rehabilitate a three-bedroom unit and maintain it for eligible Chandler families to rent. ARM of Save the Family also provides individualized case management and supportive services to program participants to promote stabilization.

- Newtown Community Development Corporation – Community Land Trust. Funding is requested to provide affordable homeownership opportunities in Chandler for first-time homebuyers with incomes below 80% of the Area Median Income. Eligible buyers must complete homebuyer education classes and homeownership counseling, and attend an orientation where the ground lease, resale restrictions, shared equity, and other provisions of the Community Land Trust (CLT) program are explained. The CLT ground lease contains resale restrictions required by HOME program guidelines. Properties must be kept as the homebuyer's principal place of residency. The ground lease gives Newtown the right of first refusal upon sale by the homeowner, and includes a shared appreciation provision to ensure the CLT homes remain affordable.



CDBG AND HOME Funding Recommendations

The City of Chandler receives federal CDBG funding, administered by HUD, to develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for persons with low and moderate income. Funds support a wide range of community development activities directed toward revitalizing neighborhoods, economic development and providing improved community facilities and services. The chart below provides a summary of proposed activities and recommendations for funding.

Agency	Program	Funding Requested	Funding Recommended	HUD Outcome
CDBG Public Service				
A New Leaf	Homeless Shelter Services	$50,000	$0	SL1
City of Chandler Community Development	Client Services	$115,000	$115,000	SL1
City of Chandler Housing and Redevelopment	Public Housing Youth Program	$78,000	$74,059	SL1
Save the Family	Case Coordination and Homeless Housing	$28,000	$28,000	SL1
Southwest Fair Housing Council	Southwest Media & Enforcement Campaign	$14,000	$0	SL1
CDBG Capital Projects, Housing, and Neighborhood Revitalization				
Central Arizona Shelter Services	Critical Shelter Hot Water Heater Improvements	$36,000	$0	DH3
City of Chandler Code Enforcement	Low-Mod Neighborhoods	$167,286	$167,286	SL3
City of Chandler Housing and Redevelopment	Relocation Assistance	$364,740	$364,740	DH1
FSL Home Improvements	Chandler Home Repair Program	$530,593.60	$530,593.60	DH3
Administration				
City of Chandler Community Development	Program Administration and Fair Housing	$289,412	$289,412	N/A

Agency	Program	Funding Requested	Funding Recommended	HUD Outcome
HOME Housing Activities				
A New Leaf	Tenant-Based Rental Assistance	$212,262	$0	DH2
ARM of Save the Family Foundation of Arizona, Inc.	Acquisition / Rehabilitation of Affordable Rental Housing	$276,482	$276,482	DH2
Newtown Community Development Corporation	Community Land Trust Homeownership	$200,000	$107,781	DH2
Administration				
City of Chandler Community Development	Program Administration	$25,618	$25,618	N/A

HUD Outcome Code Key	Availability / Accessibility	Affordability	Sustainability
Decent Housing	DH1	DH2	DH3
Suitable Living Environment	SL1	SL2	SL3
Economic Opportunity	EO1	EO2	EO3

Five-Year Consolidated Plan Goals and Annual Activity Summary for HUD Funding

The City of Chandler plans to utilize CDBG and HOME funds in Fiscal Year 2021-2022 to support the following activities that address one of the five goals identified in the Five-Year Consolidated Plan. The table below also identifies how performance measures will be evaluated based on the goal outcome indicator selected, and the number of individuals or households anticipated to be served with the planned HUD resources. Fiscal Year 2021-2022 is the second year of the Five-Year Consolidated Plan.

Five-Year Consolidated Goal and Annual Activity	Goal Outcome Indicator	Five-Year Goal	Annual Plan Goal	Geographic Area Served	HUD Resource
Goal #1: Creating and Preserving Affordable Housing					
ARM of Save the Family Foundation of Arizona, Inc. – Acquisition / Rehabilitation of Affordable Rental Housing	Rental Units Rehabilitated	2 Households	1 Household	Citywide	HOME
City of Chandler Housing and Redevelopment – Relocation Assistance	Relocation Assistance	250 Households	91 Households	Citywide	CDBG
Newtown Community Development Corporation - Community Land Trust Homeownership	Homeowner Housing Added	5 Households	1 Household	Citywide	HOME
Goal #2: Maintain Owner-Occupied Housing					
FSL Home Improvements – Chandler Home Repair Program	Homeowner Housing Rehabilitated	179 Households	35 Households	Citywide	CDBG
Goal #3: Support Public Services and Promote Fair Housing					
City of Chandler Community Development – Client Services	Public service activities other than Low/Moderate Income Housing Benefit	1,132 Individuals Assisted	200 Individuals	Citywide	CDBG
City of Chandler Housing and Redevelopment – Public Housing Youth Program	Public service activities other than Low/Moderate Income Housing Benefit	1,173 Individuals Assisted	245 Individuals	Citywide	CDBG
Save the Family – Case Coordination and Homeless Housing	Public service activities other than Low/Moderate Income Housing Benefit	85 Individuals Assisted	17 Individuals	Citywide	CDBG
Goal #4: Support Public Facilities and Public Improvements					
No Activities Planned for FY2021-2022					
Goal #5: Neighborhood Revitalization					
City of Chandler Code Enforcement – Low-Mod Neighborhoods	Housing Code Enforcement	55,000 Households	11,500 Households	CDBG Eligible Area	CDBG
Goal #6: Administration					
City of Chandler Community Development	Program Administration	n/a	n/a	Citywide	CDBG/ HOME

Addressing Need through Other Resources

Affordable Housing

Housing for all incomes, and services for persons experiencing homelessness were identified as top areas of need in the 2019 Community Needs Assessment. Nearly 40% of Chandler rental households are cost burdened, spending over 30% of their income on housing. Over 16% of Chandler rental households are severely cost burdened, spending over half of their income on housing. As a result, the City of Chandler continues to look for ways to maintain affordable housing and expand the inventory as the housing market continues to tighten. The City utilizes a combination of CDBG and HOME funding to address and expand affordable housing. The City also offers single-family owner-occupied housing rehabilitation to assist Chandler homeowners who are low and moderate income with emergency repairs, minor repairs, ADA modifications and exterior improvements that would not be fixed otherwise.

The City of Chandler's Community Development staff works closely with the Chandler Public Housing Authority (PHA) in serving its low- and moderate-income Chandler residents. The Chandler PHA administers the Tenant-Based Rental Assistance (TBRA) program, serving households experiencing homelessness. The Community Development staff provides oversight for homeless outreach and services. Communications are ongoing with the Chandler PHA regarding individuals and families experiencing homelessness, and those who may be eligible for this service.





Meeting Underserved Needs

Basic Needs

In Fiscal Year 2021-2022, the Housing and Human Services Commission will continue its focus on the following priorities to strengthen the capacity of low- and moderate-income individuals and families to move toward their highest level of functionality and independence. These include:

- Emergency Services: programs that support families and children in crisis as a result of child abuse, domestic violence, and/or behavioral health concerns such as substance abuse and mental health issues.
- Temporary Assistance: programs that provide temporary financial assistance (utilities and rent) and support for individuals in accessing additional community resources.
- Basic Needs: programs that provide access to food and other basic needs, including clothing and hygiene supplies, to ensure basic physical health needs are met.
- Support Services: programs that provide employment assistance and/or adult education including basic education, literacy, English as a Second Language, financial literacy, workforce skills training and job search skills support; tax assistance; and programs that help families avert a crisis through supportive services, including affordable child care and transportation.
- Homelessness: programs that provide support services, shelter, and housing for individuals and families experiencing homelessness.

Youth

In Fiscal Year 2021-2022, the Housing and Human Services Commission will continue its focus on the following priorities for the use of local resources targeted to youth services including:

- Education: programs that focus on academic achievement and support such as technology learning, tutoring, mentoring, and student leadership.
- Health: programs that provide basic health and nutrition services that support physical, behavioral and mental health, and prevent childhood obesity.
- Prevention/Intervention: programs that support healthy social development through the prevention of violence and gang activity, substance abuse, teen pregnancy, and other risk behaviors.





Special Populations

In Fiscal Year 2021-2022, the Housing and Human Services Commission will continue its focus on the following priorities to improve the quality of life for individuals with special needs including:

- Basic Needs: programs that provide for basic needs addressing food insecurity, rental assistance, health and transportation programs.
- Independent Living: programs that allow seniors to safely age in place, persons with disabilities to live independently, including caregiver respite and support, home-delivered and congregate meals and nutrition programs, and supportive programs for grandparents raising grandchildren.
- Socialization, Recreation and Education: programs that provide opportunities to seniors or children and adults with disabilities to combat depression, maintain or improve functional living skills, aid in workforce readiness, improve physical health or enhance quality of life.
- Access to Transportation: programs that provide transportation for Veterans.
- Specialized Training: programs that provide functional living skill training and pre-vocational training to individuals over the age of 18 with intellectual and developmental disabilities.

Public Housing

The City of Chandler Public Housing Authority (PHA) is administered by the Chandler Housing and Redevelopment Division, which oversees and manages Public Housing units and the Housing Choice Voucher: Section 8 program. The primary focus of the PHA is to provide affordable rental housing for extremely low, low- and moderate-income families.

Public Housing is a federal housing program in which the Chandler PHA owns and manages 303 units consisting of single-family homes, four apartment complexes, and one apartment complex for individuals who are elderly. The Housing Choice Voucher (HCV): Section 8 program is a rent subsidy program that assists eligible individuals and their families in obtaining affordable, decent and safe housing in the private market. The PHA manages 486 Housing Choice Vouchers. The Family Self-Sufficiency (FSS) program is available to all Public Housing and HCV residents. FSS participants receive support for employment and other case management services designed to promote economic self-sufficiency. The Public Housing program and the HCV program continues to be designated by HUD as "High Performing."

Actions planned to address the needs to public housing include but are not limited to:

- Provide monthly rental assistance to low-income households, many of whom are elderly or have special needs.
- Continue to successfully manage 303 units of public housing.
- Make improvements to public housing units and developments such as replacement of outdated components.
- Explore increased affordable housing opportunities through Rental Demonstration Assistance (RAD) project.

During the program year, the City of Chandler Public Housing Authority encourages public housing resident involvement in management and homeownership by:

- Meeting with residents through Resident Advisory Board to secure their input into the Public Housing and Housing Choice Voucher annual plans.
- Conducting monthly Tenant Community Builders meetings with Public Housing residents to discuss community issues.
- Distributing quarterly newsletters to Public Housing residents.
- Meeting quarterly with Public Housing residents and Housing Choice Voucher Family Self-Sufficiency (FSS) participants.
- Partnering with local nonprofits to offer free-of-charge training to assist FSS participants in finding and maintaining jobs.
- Offering financial literacy classes and one-on-one financial counseling.
- Providing workshops focused on managing student loan debt, household budgeting, and credit repair.
- Partnering with Maricopa Integrated Health Systems and Carrington College to provide a wide range of primary care health services.
- Partnering with local nonprofits to provide homebuyer preparation classes, such as budgeting and repairing credit.
- Partnering with local nonprofits to provide free after school programs, free summer camp, scholarships, and parenting classes.
- Preparing Public Housing clients and Housing Choice Voucher clients for future home purchase.

Reducing the Risk of Lead-Based Paint Poisoning

Childhood lead poisoning is a serious pediatric health problem. Children ages six years old and younger are particularly susceptible to lead poisoning. Research indicates that even a low level of lead in a child's blood can have harmful effects on physical and developmental health. The most common source of exposure is deteriorating lead-based paint and lead contaminated dust found in the home, but other sources include pottery, jewelry, candy and makeup. The use of lead based paint was banned in 1978.

To reduce the risk of lead poisoning, information is distributed to participants in City housing programs. The City follows strict HUD guidelines for testing and abatement of lead-based paint and other hazardous substances, and requires compliance from its contractors and subcontractors. Any structure built before 1978 that is proposed for rehabilitation under federal programs is tested for lead-based paint. Notices and requirements regarding testing and removal of lead based paint are provided to program participants, contractors and project sponsors.

In addition, the City follows a multi-pronged approach to reduce lead hazards:
1. Rehabilitation Projects. The City follows strict HUD guidelines for testing and abatement of lead-based paint and other hazardous substances, and requires compliance from its contractors and subcontractors. Any structure built before 1978 that is proposed for rehabilitation under federal programs, is tested for lead-based paint. Notices and requirements regarding testing and removal of lead-based paint are provided to program participants, contractors and project sponsors. The City's service provider has licensed contractors who are available to perform appropriate abatement and/or removal procedures if lead-based paint is present.

2. Housing Choice Voucher: Section 8. The PHA inspects prospective dwellings constructed prior to 1978 that will have a child under the age of six residing therein, for compliance with EPA and HUD Lead Based Paint rules and regulations. The inspection includes visual inspections for chipped, peeling, chalking and deteriorated interior and exterior paint. Clearance testing may be performed after remediation by the property owner, to assure a lead-safe environment.

Citizen Participation Plan

The draft Annual Action Plan is available for review at the Neighborhood Resources Department, and on the City's website at https://www.chandleraz.gov/residents/neighborhood-resources/community-development/plans-and-reports.

Throughout the development of the City of Chandler's Annual Action Plan for Fiscal Year 2021-2022, the City provided several opportunities for public input and comment. The City plans to conduct two public hearings; one was held virtually on February 10, 2021, and a second public hearing is scheduled for April 7, 2021 (in-person or virtually). There will be a 30-day public comment period from March 22, 2021 to April 20, 2021. The public hearings and public comment period were announced through an advertisement in the Arizona Republic and is posted in public locations including the City Clerk's office, and the Neighborhood Resources Department office. The public hearing notice includes the meeting location (including virtual access), date, time, key staff contacts, topics to be considered, and the beginning and ending dates of the public comment period. The notice also includes information for citizens requesting reasonable accommodations for a disability. In addition to commenting at the public hearing, citizens are invited to submit written comments to the Neighborhood Resources Department by mail, phone or email at community.development@chandleraz.gov.

Public comments received during the public comment period will be incorporated into the final Annual Action Plan submitted to the U.S. Department of Housing and Urban Development.

Housing and Human Services Commission

Chair
Catrina Boppart

Vice Chair
Tony Alcala

Commisioners
Mekele Cole
Vanessa Dearmon
Cynthia Hardy
Heather Mattison
Leonard Navarrete
Greg Rodriquez
Steve Tepper

Chandler Mayor and City Council



Mayor
Kevin Hartke

Vice Mayor
Mark Stewart

Councilmembers:
Christine Ellis
OD Harris
René Lopez
Matt Orlando
Terry Roe

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City of Chandler Staff

Acting City Manager
Joshua H. Wright

Assistant City Manager
Debra Stapleton

Neighborhood Resources Department

Leah Powell, Director

Riann Balch, Community Development and Resources Manager

Amy Jacobson, Housing and Redevelopment Manager

235 South Arizona Avenue
Chandler, AZ 85225
480-782-4300
www.chandleraz.gov/CommunityDevelopment

CITY OF CHANDLER
PROGRAM YEAR 2021–2022
COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG)
PROGRAM DESCRIPTIONS AND FUNDING RECOMMENDATIONS

CDBG Public Services:

A New Leaf – Homeless Shelter Services

Funding Request: $50,000
Recommendation: $0

Funding is requested to provide emergency shelter and support services to individuals and families experiencing homelessness in Chandler. Funding will support two .75 FTE Support Partners, who will provide direct case management support to families and individuals residing at La Mesita (family shelter) and East Valley Men's Center.

COC Community Development and Resources – Client Services

Funding Request: $115,000
Recommendation: $115,000

Funding is requested to provide community navigation and client services to individuals experiencing unsheltered homelessness in Chandler. This funding supports .5 FTE Client Services Specialist and 1 FTE Community Navigator who will identify and establish relationships; coordinate care and communications with appropriate service providers; facilitate access to housing; and provide support and advocacy necessary to help them stay housed.

COC Housing and Redevelopment – Public Housing Youth Program

Funding Request: $78,000
Recommendation: $74,059

Funding is requested to provide after school and intersession programming to youth, ages 6-18, who reside in Chandler's four Public Housing family sites. Activities include academic support; mentoring; youth development; arts; books and reading services; and sports and recreation. Programming is offered Monday through Friday on regular school days at each public housing site. During intersession, youth from all four sites come together to participate in regular programming and special events. In the summer months, activities are offered in the morning for younger children, in the afternoon for all ages, and in the evening for teens.

Save the Family – Case Coordination and Homeless Housing

Funding Request: $28,000
Recommendation: $28,000

Funding is requested to assist Chandler families experiencing homelessness in obtaining and maintaining permanent housing through long-term shelter, rapid rehousing, and case coordination. Save the Family is unique in its provision of a scattered-site long-term shelter model, which allows families to stay integrated in their community near their natural support systems while they are in transition to permanency. Scattered-site shelter is provided in the cities of Mesa and Tempe. Scattered-site rapid rehousing services are provided throughout Maricopa County, but primarily in the East Valley cities of Chandler, Mesa, Tempe, Scottsdale, and Gilbert.

Southwest Fair Housing Council – Southwest Media & Enforcement Campaign

Funding Request: $14,000
Recommendation: $0

Funding is requested to develop a fair housing media campaign for the City of Chandler. The media campaign would be designed to inform potential victims of housing discrimination, their fair housing rights and information about the services provided by Southwest Fair Housing Council (SWFHC). SWFHC is a fully-funded, statewide enforcement agency that supports individuals whose fair housing rights may have been violated by providing intake and referrals to appropriate agencies, fair housing counseling, and assistance through the entire fair housing complaint process.

<u>CDBG Capital Projects, Housing, and Neighborhood Revitalization:</u>

Central Arizona Shelter Services – Critical Shelter Hot Water Heater Improvements

Funding Request: $36,000
Recommendation: $0

Funding is requested to replace three hot water heaters at the emergency shelter located in Downtown Phoenix that houses more than 400 single adults each night. Replacement of the hot water heaters would provide hot showers and clean clothes to shelter residents.

COC Code Enforcement – Low–Mod Neighborhoods

Funding Request: $167,286
Recommendation: $167,286

Funding is requested to continue the systematic, proactive inspection program in CDBG eligible areas, with an emphasis on north Chandler. The program supports 1.5 full-time Code Inspectors and .3 full-time Neighborhood Preservation Technician specifically assigned to initiate code enforcement inspections and take necessary enforcement actions to remediate neighborhood degradation. Residents receive an advisory notice providing information about common code violations for self-evaluation and correction prior to inspection.

COC Housing and Redevelopment – Relocation Assistance

Funding Request: $364,740
Recommendation: $364,740

Funding is requested to support a future Rental Assistance Demonstration (RAD) project, that would provide relocation assistance to households with low and moderate income that may be impacted by the RAD project.

FSL Home Improvements – Chandler Home Repair Program

Funding Request: $530,593.60
Recommendation: $530,593.60

Funding is requested for emergency repairs, minor repairs, ADA modifications and exterior improvements for Chandler residents with low and moderate income who own and occupy a single-family home. The Exterior Improvement Loan Program (EILP) offers up to $20,000 for exterior improvements to address blighted conditions and revitalize the property and surrounding neighborhood in the form of zero percent interest loans, which are forgivable over five years. The Americans with Disabilities Act (ADA) program offers up to $10,000 for persons with disabilities to modify their homes so they can continue to live safely and comfortably. This program is a continuation of the current partnership with the City of Chandler Neighborhood Resources Department. The City will continue to process client applications directly through the Homeowner Rehabilitation grant. FSL's role will include home inspections, scope of work creation, contractor procurement, construction oversight, and billing/reporting.

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City Council Memorandum **Neighborhood Resources** **Memo No.** NR21-011

Date: April 19, 2021

To: Mayor and Council

Thru: Joshua H. Wright, Acting City Manager
Debra Stapleton, Assistant City Manager
Leah Powell, Neighborhood Resources Director

From: Karin Bishop, Community Development and Resources Supervisor

Subject: Resolution No. 5460 Approving and Authorizing the Acting City Manager or His Designee to Allocate Program Year 2021–2022 HOME Investment Partnerships Funds from the Cranston-Gonzalez National Affordable Housing Act through the Maricopa HOME Consortium and Execute All Subrecipient Contracts

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Proposed Motion:

Move that City Council pass and adopt Resolution No. 5460 approving and authorizing the Acting City Manager or his designee to allocate Program Year 2021-2022 HOME funds from the Cranston-Gonzalez National Affordable Housing Act through the Maricopa HOME Consortium and execute all subrecipient contracts.

Background:

Each year, the City of Chandler receives federal HOME funding, administered by the United States Department of Housing and Urban Development (HUD), through the Maricopa HOME Consortium. Eligible HOME activities include building, buying, and/or rehabilitating affordable housing for rent or homeownership or providing direct rental assistance to individuals with low and moderate income. HOME-funded activities proposed by the City are included in Maricopa County's Consolidated Plan and Annual Action Plan submitted to HUD.

In compliance with HUD regulations and the Citizen Participation Plan, the City held a 30-day public comment period regarding the draft Program Year 2021-2022 Annual Action Plan, which included the Housing and Human Services Commission's funding recommendations based on anticipated formula funding for Program Year 2021–2022 HOME funds. The public comment period began Tuesday, March 22, 2021, and will end on Tuesday, April 20, 2021. In addition, two public hearings were held on February 10, 2021, and on April 7, 2021, to ensure multiple opportunities for input from the community regarding the draft Program Year 2021–2022 Annual Action Plan. Public comments received during the public comment period will be included in the finalized report submitted to HUD.

Discussion:

HUD released the Program Year 2021-2022 annual allocation of HOME funds on February 25, 2021. Based on HUD's allocation, Maricopa County released its allocations for Consortium members. The City of Chandler was awarded $409,881, a decrease of $824 from the prior program year. The City will allocate $384,263 for affordable housing program providers, and utilize $25,618 for program administration. Program Year 2021-2022 HOME funding recommendations and program descriptions are attached.

Financial Implications:

Federal HOME funds require a 25% local match. Required match is provided by each funding recipient. The City of Chandler pays for services supported by HOME funds and then submits a request for reimbursement to Maricopa County.

Attachments

Resolution No. 5460

PY 2021-2022 HOME Funding Recommendations and Descriptions

RESOLUTION NO. 5460

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CHANDLER, MARICOPA COUNTY, ARIZONA, APPROVING AND AUTHORIZING THE ACTING CITY MANAGER OR HIS DESIGNEE TO ALLOCATE PROGRAM YEAR 2021-2022 HOME INVESTMENT PARTNERSHIPS FUNDS FROM THE CRANSTON-GONZALEZ NATIONAL AFFORDABLE HOUSING ACT THROUGH THE MARICOPA HOME CONSORTIUM AND EXECUTE ALL SUBRECIPIENT CONTRACTS.

WHEREAS, the City of Chandler anticipates receiving a Program Year (PY) 2021-2022 annual allocation through the Maricopa HOME Consortium by its entitlement from the U.S. Department of Housing and Urban Development to use for the City's PY 2021-2022 HOME Program; and

WHEREAS, Title II of the Cranston-Gonzalez National Affordable Housing Act (the "Act") makes available funds in PY 2021-2022 to assist the City of Chandler in creating a more viable community; and

WHEREAS, decent, safe, affordable housing is at the core of family stability and strong neighborhoods; and

WHEREAS, since 1982, the HOME program has expanded the supply of decent, safe, affordable housing; strengthened public-private partnerships; improved the lives of individuals with low- and moderate-income; and strengthened neighborhoods; and

WHEREAS, the HOME program provides no or low interest loans or grants for the rehabilitation of existing low-income homeowner properties; and

WHEREAS, the HOME program is cost effective and strengthens public-private partnerships by leveraging additional private resources to HOME projects; and

WHEREAS, the City Council has examined the proposed program and received input from citizens of the community in public hearings, and has deliberated on the needs, goals, and programs specified for community development funding; and

WHEREAS, City staff has prepared an Annual Action Plan for the use of community development HOME resources for PY 2021-2022.

NOW, THEREFORE BE IT RESOLVED, by the City Council of the City of Chandler, Maricopa County, Arizona, as follows:

Section 1. Authorizes and approves the Acting City Manager to make, on behalf of the City, the submittal of an application to the U.S. Department of Housing and Urban Development, through the Maricopa HOME Consortium, for funds for the City's HOME program for PY 2021-2022.

Section 2. Authorizes and directs the Acting City Manager, or his designee to: (a) submit with the application all documents, submissions, plans, and materials required by the Act; and (b) prepare, submit, negotiate, and execute all contracts for services and to use the funds to be made available to the City under Title II of the Act for financing and implementation of all referenced City programs and projects.

Section 3. Authorizes the Acting City Manager, or his designee, to provide required policy and administrative assurances including civil rights, equal opportunity, citizen participation, relocation and property acquisition, environmental assurances, labor standards, and others as may be specified under federal law in 24 CFR Part 92.

Section 4. Authorizes the Acting City Manager, or his designee, to take those actions necessary and prudent to implement the City's HOME program for PY 2021-2022, including, but not limited to, the signing of contracts, the expenditure of funds, the hiring of personnel or contractors, the scheduling of activities, the establishment of procedures for monitoring and evaluation of program activities and other steps necessary to ensure that the HOME program can be carried out in a timely and effective manner, including but not limited to the establishment of administrative procedures not inconsistent with federal, state or local law.

PASSED AND ADOPTED by the City Council of the City of Chandler, Arizona, this ____ day of April, 2021.

ATTEST:

_____ _____
CITY CLERK MAYOR

CERTIFICATION

I HEREBY CERTIFY that the above and foregoing Resolution No. 5460 was duly passed and adopted by the City Council of Chandler, Arizona, at a regular meeting held on the _____ day of April, 2021 and that a quorum was present thereat.

_____
CITY CLERK

APPROVED AS TO FORM:

_____
CITY ATTORNEY

CITY OF CHANDLER
PROGRAM YEAR 2021–2022
HOME INVESTMENT PARTNERSHIPS PROGRAM (HOME)
PROGRAM DESCRIPTIONS AND FUNDING RECOMMENDATIONS

HOME Housing Activities:

A New Leaf – Tenant-Based Rental Assistance

Funding Request: $212,262
Recommendation: $0

Funding is requested to provide Tenant-Based Rental Assistance (TBRA) for households experiencing homelessness in Chandler. HOME TBRA funds will be used for direct housing assistance for a period of up to 24 months per household.

ARM of Save the Family Foundation of Arizona, Inc. – Acquisition/Rehabilitation of Affordable Rental Housing

Funding Request: $276,482
Recommendation: $276,482

Funding is requested to add one unit of affordable rental housing in the Chandler market for families with income below 60% Area Median Income. ARM of Save the Family will acquire and rehabilitate a three-bedroom unit and maintain it for eligible Chandler families to rent. ARM of Save the Family also provides individualized case management and supportive services to program participants to promote stabilization.

Newtown Community Development Corporation – Community Land Trust Homeownership

Funding Request: $200,000
Recommendation: $107,781

Funding is requested to provide affordable homeownership opportunities in Chandler for first-time homebuyers with incomes below 80% of the Area Median Income. Eligible buyers must complete homebuyer education classes and homeownership counseling, and attend an orientation where the ground lease, resale restrictions, shared equity, and other provisions of the Community Land Trust (CLT) program are explained. The CLT ground lease contains resale restrictions required by HOME program guidelines. Properties must be kept as the homebuyer's principal place of residency. The ground lease gives Newtown the right of first refusal upon sale by the homeowner, and includes a shared appreciation provision to ensure the CLT homes remain affordable.

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City Council Memorandum **Neighborhood Resources** **Memo No.** NR21-012

Date: April 19, 2021

To: Mayor and Council

Thru: Joshua H. Wright, Acting City Manager
Debra Stapleton, Assistant City Manager
Leah Powell, Neighborhood Resources Director

From: Karin Bishop, Community Development and Resources Supervisor

Subject: Resolution No. 5461 Amending the 2020-2025 Consolidated Plan and Submitting Substantial Amendment No. 1 to the United States Department of Housing and Urban Development for Its Consideration in Order to Redirect the Planned Use of Anticipated Community Development Block Grant Funds; and Approving and Authorizing the Acting City Manager or His Designee to Submit Substantial Amendment No. 1 to the United States Department of Housing and Urban Development

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Proposed Motion:

Move that City Council pass and adopt Resolution No. 5461 Amending the 2020-2025 Consolidated Plan and Submitting Substantial Amendment No. 1 to the United States Department of Housing and Urban Development (HUD) for Its Consideration in Order to Redirect the Planned Use of Anticipated Community Development Block Grant Funds; and Approving and Authorizing the Acting City Manager or His Designee to Submit Substantial Amendment No. 1 to HUD.

Background:

On June 25, 2020, City Council approved the 2020-2025 Consolidated Plan which establishes priorities, goals and outcomes over a five-year period to address the City's community development and housing needs. The Housing and Human Services Commission (HHSC) and staff propose a substantial amendment to the 2020-2025 Consolidated Plan to effectively implement a change in Community Development Block Grant (CDBG) program activities to address pressing community development and housing needs.

Discussion:

The HHSC and staff recommend a change in the planned allocation of CDBG funds that is not currently included in the 2020-2025 Consolidated Plan. These recommendations include utilizing CDBG funds to support relocation assistance for households with low and moderate income that will be impacted by a future Rental Assistance Demonstration (RAD) project. Additionally, the HHSC and staff recommend redirecting administrative funds to support fair housing activities. To support these new activities or redirect CDBG funds as described above, a substantial amendment to the 2020-2025 Consolidated Plan is required.

In compliance with HUD regulations and the Citizen Participation Plan, the City held a 30-day public comment period regarding the draft Substantial Amendment #1 to the 2020-2025 Consolidated Plan. The public comment period began Tuesday, March 22, 2021, and will end on Tuesday, April 20, 2021. In addition, a public hearing was held on April 7, 2021, to ensure multiple opportunities for input from

the community regarding the draft Substantial Amendment #1 to the 2020-2025 Consolidated Plan. Public comments received during the public comment period will be included in the Substantial Amendment #1 to the 2020-2025 Consolidated Plan submitted to HUD. A copy of the Substantial Amendment #1 to the 2020-2025 Consolidated Plan is attached.

Financial Implications:

The City of Chandler will utilize CDBG federal entitlement funds to support recommended changes to program activities identified in the Substantial Amendment No. 1 to the 2020-2025 Consolidated Plan. No match is required. The City of Chandler pays for services supported by CDBG funds and then submits a request for reimbursement to HUD.

Attachments

Resolution No. 5461

Substantial Amendment No. 1 to the 2020-2025 Consolidated Plan

RESOLUTION NO. 5461

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CHANDLER, ARIZONA, AMENDING THE 2020-2025 CONSOLIDATED PLAN AND SUBMITTING SUBSTANTIAL AMENDMENT #1 TO THE UNITED STATES DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT FOR ITS CONSIDERATION IN ORDER TO REDIRECT THE PLANNED USE OF ANTICIPATED COMMUNITY DEVELOPMENT BLOCK GRANT FUNDS; AND APPROVING AND AUTHORIZING THE ACTING CITY MANAGER OR HIS DESIGNEE TO SUBMIT SUBSTANTIAL AMENDMENT #1 TO THE UNITED STATES DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.

WHEREAS, the City of Chandler is a recipient of Community Development Block Grant (CDBG) funds from the United States Department of Housing and Urban Development (HUD); and

WHEREAS, the City of Chandler's 2020-2025 Consolidated Plan establishes priorities, goals and outcomes over a five-year period that address the City's community development and housing needs and periodically requires the City to propose a substantial amendment to the Consolidated Plan to effectively implement its programs and address the City's most pressing needs; and

WHEREAS, the City of Chandler recommends a planned allocation of CDBG funds not currently included in the 2020-2025 Consolidated Plan to support relocation assistance for households with low and moderate income that may be impacted by a future Rental Assistance Demonstration (RAD) project; and also plans to redirect administrative funds to support fair housing activities; and

WHEREAS, in order to support new activities or redirect CDBG funds as aforesaid, the City must amend its 2020-2025 Consolidated Plan which was approved by Council through Resolution No. 5381, and submit Substantial Amendment #1 to the 2020-2025 Consolidated Plan to HUD for its consideration; and

WHEREAS, the City of Chandler has, in coordination with the City's Housing and Human Services Commission, held a public hearing and presented aforesaid Substantial Amendment #1 to the 2020-2025 Consolidated Plan for the public's consideration; and

WHEREAS, the aforesaid Substantial Amendment #1 to the 2020-2025 Consolidated Plan has been available for a 30-day public comment, and in adherence to the Citizen Participation Plan; and

WHEREAS, this Council has determined by reviewing all pertinent information that it is necessary and in the best interest of the City of Chandler to approve and authorize the Substantial Amendment #1 to the 2020-2025 Consolidated Plan, with all documents and materials as may be required to HUD; and

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Chandler, Arizona as follows:

Section 1. Approves the Substantial Amendment #1 to the 2020-2025 Consolidated Plan, a copy of which shall be kept on file in the office of the Director of Neighborhood Resources.

Section 2. Approves and authorizes the Acting City Manager, or his designee, to execute and submit the aforesaid Substantial Amendment #1 to the 2020-2025 Consolidated Plan, with all documents and materials as may be required to HUD.

Section 3. Authorizes the Acting City Manager, or his designee, to provide required policy and administrative assurances including civil rights, equal opportunity, citizen participation, relocation and property acquisition policy, environmental assurances, labor standards, and others as may be specified under federal law.

Section 4. Authorizes the Acting City Manager, or his designee, to take those actions necessary and prudent to implement the planned actions and revisions as described in the aforesaid Substantial Amendment #1 to the 2020-2025 Consolidated Plan including, but not limited to, the signing of contracts, expenditure of funds, the hiring of personnel and/or contractors, the scheduling of activities, the establishment of procedures for monitoring and evaluation of program activities and other steps necessary to ensure that the CDBG program can be carried out in a timely and effective manner.

PASSED AND ADOPTED by the City Council of the City of Chandler, Arizona, this _____ day of April, 2021.

ATTEST:

_____ _____

CITY CLERK MAYOR

CERTIFICATION

I HEREBY CERTIFY that the above and foregoing Resolution No. 5461 was duly passed and adopted by the City Council of Chandler, Arizona, at a regular meeting held on the _____ day of April, 2021, and that a quorum was present thereat.

_____
CITY CLERK

APPROVED AS TO FORM:

_____
CITY ATTORNEY

3/22/2021:

Amending Plan to update SP-45:

Goal #1 (Creating and Preserving Affordable Housing) to repurpose CDBG funds to support relocation assistance to assist households that will be impacted by the implementation of a future Rental Assistance Demonstration (RAD) project.

Goal #3 (Support Public Services and Promote Fair Housing) Moving support of future fair housing activities from Goal #3 to Goal #6 (Administration).

12/28/2020: Amending Plan to update the SF-424s and IDIS to reflect the HUD reduction in PY2020 CDBG allocations.

Executive Summary

ES-05 Executive Summary – 24 CFR 91.200(c), 91.220(b)

1. Introduction

The City of Chandler has prepared its Five Year Consolidated Plan that provides the framework for utilizing Community Development Block Grant (CDBG) funds from the U.S. Department of Housing and Urban Development (HUD) over the five-year period beginning July 1, 2020 and ending June 30, 2025.

According to HUD, the Consolidated Plan is designed to be a collaborative process whereby a community establishes a unified vision for housing and community development actions. It offers entitlement communities the opportunity to shape these housing and community development programs into effective, coordinated neighborhood and community development strategies. It also allows for strategic planning and citizen participation to occur in a comprehensive context, thereby reducing duplication of effort.

The City of Chandler has prepared this Consolidated Plan to meet the guidelines as set forth by HUD and is broken into five sections: The Process; Needs Assessment; Market Analysis; Strategic Plan; and Annual Action Plan.

The City of Chandler's Neighborhood Resources Department (NRD) manages the oversight of CDBG funding. The nonprofit organizations and City departments that undertake CDBG-funded activities are selected annually through a competitive request for proposals process, and must address one of the Consolidated Plan goals identified.

The City of Chandler Housing and Redevelopment, a division of Neighborhood Resources, serves as the administrator for the Chandler Public Housing Authority (PHA) and is currently considering options for

increasing affordable rental housing for residents with low and moderate income. Chandler's Housing and Redevelopment division has requested that the $1 million planned for rental housing rehabilitation be repurposed to support relocation assistance to assist households that will be impacted by the implementation of a future Rental Assistance Demonstration (RAD) project.

City of Chandler Community Development is planning to support future fair housing activities utilizing Planning and Administration funds, allowing additional CDBG funds to support public service activities.

Changes to the above planned activities are detailed under the section SP-45 Goals Summary of this Consolidated Plan.

2. Summary of the objectives and outcomes identified in the Plan Needs Assessment Overview

The goal of the CDBG program is to develop viable communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for persons with low and moderate income. Funds support a wide range of community development activities directed toward revitalizing neighborhoods, economic development, and providing improved community facilities and services. These goals are further explained as follows:

- Providing decent housing means helping persons experiencing homelessness obtain appropriate housing and assisting those at-risk of homelessness; preserving the affordable housing stock; increasing availability of permanent housing that is affordable to individuals with low and moderate income without discrimination; and increasing the supply of supportive housing.
- Providing a suitable living environment entails improving the safety and livability of neighborhoods; increasing access to quality facilities and services; and increasing housing opportunities for individuals with low income.
- Expanding economic opportunities involves creating jobs that are accessible to individuals with low and moderate income; making down payment and closing cost assistance available for persons with low and moderate income; promoting long-term economic and social viability; and empowering persons with low income to achieve self-sufficiency.

3. Evaluation of past performance

A review of the City of Chandler's past Consolidated Annual Performance and Evaluation Report (CAPER) has been completed. This report states the objectives and outcomes identified in each year's Annual Action Plan and includes an evaluation of past performance through measurable goals and objectives compared to actual performance. The 2018 CAPER reported accomplishments toward it's 2015-2019 Strategic Plan goals. The City served 2,598 individuals who were extremely low income, in crisis and provided them with a variety of basic needs. Case management services were provided to 893 individuals who were experiencing homelessness or were at-risk of homelessness to help stabilize their housing or prevent them from becoming homeless. An additional 142 individuals who were experiencing

homelessness were assisted with Emergency and Transitional Housing. There were 25,031 individuals with low and moderate income that benefited from the City's investment in Public Facility Improvements, such as park improvements, public housing improvements, and food bank improvements. To maintain neighborhood preservation in areas of the City where households have low and moderate income, code enforcement and alley maintenance efforts in CDBG-eligible areas resulted in code enforcement violations totaling 3,384 that were remedied by the homeowner. There were 79 owner-occupied households with low and moderate income that received housing rehabilitation assistance making their housing conditions more suitable for living.

4. Summary of citizen participation process and consultation process

A variety of public outreach and citizen participation was used to develop the Five-Year Consolidated Plan. The City conducted 12 public meetings, 17 stakeholder interviews, and collected 624 survey responses. Public access to the survey was available at the City website and notices were e-mailed directly to stakeholders and neighborhood associations. The survey provided stakeholders and residents an opportunity to prioritize the needs of the Chandler community as identified in the 2019 Community Needs Assessment.

The City of Chandler is in adherence to its Citizen Participation Plan. The City of Chandler's proposed changes to the Five-Year Consolidated Plan falls within the parameters established for creating a substantial amendment to the Consolidated Plan. A 30-day public comment period is scheduled for Monday, March 22, 2021 through Tuesday, April 20, 2021. A public hearing is scheduled for Wednesday, April 7, 2021 at 6:00 p.m. at the Housing and Human Services Commission meeting. A public notice was published in the local newspaper and also at the City Clerk's office and Neighborhood Resources Department along with social media posts and website announcements. After the 30-day public comment period, the Substantial Amendment to the Consolidated Plan will be presented to Mayor and City Council for approval on April 22, 2021. Any comments received will be included with the final Substantial Amendment submitted to the U.S. Department of Housing and Urban Development (HUD) for approval.

5. Summary of public comments

Public meetings, stakeholder interviews and survey responses identified priority populations.

- People experiencing homelessness and/or housing crisis
- Households with low and moderate income
- Seniors who are isolated and/or have low household incomes
- Youth who are vulnerable
- People living with mental health and/or substance use disorders
- People living with physical and/or intellectual disabilities

6. Summary of comments or views not accepted and the reasons for not accepting them

The City accepted all comments and views.

7. Summary

The 2019 Community Needs Assessment and Market Analysis, which was guided by the public meetings, stakeholder interviews and survey responses, identified the following priority needs:

- 1. Housing for All Incomes
- 2. Behavioral Health
- 3. Homelessness
- 4. Better Communications
- 5. Transportation
- 6. Social Isolation
- 7. Food Insecurity

To view the entire summary section, please see the text attachments.

ES-05 Summary (1)

From these priorities, the following Priority Needs were developed for the utilization of CDBG funds in the Five-Year Consolidated Plan:

- Affordable Rental Housing:

The number of persons experiencing homelessness is increasing in the City of Chandler. Additionally, there is a high proportion of renter households in the City of Chandler with housing issues, especially with cost burdens. Providing funds for various housing options and services for persons who are experiencing homelessness or who are cost burdened and at-risk of homelessness continues to be a high priority. Addressing the need for more affordable housing is a high priority, and is based upon the Gruen+Gruen report on affordable housing referenced in the 2019 Community Needs Assessment. This includes preservation of the City of Chandler's public housing which provides affordable housing options for persons with low to moderate income, persons who are experiencing homelessness, and persons at-risk of homelessness or have special needs.

- Affordable Owner-Occupied Housing:

There are a high proportion of homeowner households that are cost-burdened in the City of Chandler and unable to maintain the cost of repairs to the home to maintain living in a safe, decent and suitable living environment. Additionally, homeownership is becoming more difficult to obtain with the increasing housing prices. Addressing the need for more affordable housing, providing funds for various housing options for homeowners who are cost burdened and at-risk of homelessness, and for

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individuals priced out of the current housing market is a high priority. This includes addressing the housing needs of individuals through Housing Rehabilitation.

- Public Services and Fair Housing:

As the number of persons in the City of Chandler who are experiencing homelessness increases, so too is the need to provide funds for housing options and services to persons with low and moderate income who are homeless, at-risk of homelessness, or have special needs. Addressing this need continues to be a high priority. This includes but is not limited to emergency and transitional housing, case management support, public housing youth program, provision of basic needs, and direct client services. Rent and utility assistance will also be provided to support persons with low and moderate income who are facing eviction or hardship as a result of COVID-19.

- Improve or Develop Public Facilities:

Supporting public improvements and infrastructure needs in the City of Chandler to assist persons or households with low and moderate income in CDBG-eligible areas is a high priority. These include but are not limited to Parks Improvements, Nonprofit Facility Improvements, and New or Expansion of Service Facilities.

- Neighborhood Revitalization:

Fostering neighborhood preservation in the City of Chandler benefitting households with low and moderate income in CDBG-eligible areas is a high priority.

ES-05 Summary (2)

These Priority Needs are addressed with the following Goals:

- Creating and Preserving Affordable Housing:

Acquisition and rehabilitation of housing units to expand affordable housing options for households with low and moderate income.

- Maintain Owner-Occupied Housing:

Support housing rehabilitation programs for Chandler homeowners. Improve neighborhood conditions and living conditions for homeowners with low and moderate income through emergency repairs, minor repairs, ADA modifications and exterior improvements to housing units.

- Support Public Services and Promote Fair Housing:

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Provide needed public services within the City of Chandler to persons with predominately low and moderate income using CDBG funds not to exceed the 15% annual expenditure limit, unless a waiver is provided by HUD due to emergency situations such as COVID-19 pandemic. Clients assisted may include persons who are experiencing homelessness, at-risk of homelessness, or have special needs.

- Support Public Facilities and Public Improvements:

Provide support to public facilities that assist clients who may include persons who are experiencing homelessness, at-risk of homelessness, or have special needs. Provide support for public improvements and infrastructure support within the City of Chandler.

- Neighborhood Revitalization:

Improve living conditions and foster neighborhood preservation through targeted code enforcement activities in CDBG-eligible areas, and provide referrals for assistance to households with low and moderate income.

- Administration:

Administer funds in accordance with program requirements.

The City of Chandler is actively reviewing the anticipated HUD resources and re-evaluating the best utilization of these funds to serve Chandler residents with low and moderate income.

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The Process

PR-05 Lead & Responsible Agencies - 91.200(b)

1. Describe agency/entity responsible for preparing the Consolidated Plan and those responsible for administration of each grant program and funding source

The following are the agencies/entities responsible for preparing the Consolidated Plan and those responsible for administration of each grant program and funding source.

Agency Role	Name	Department/Agency
Lead Agency	CHANDLER	
CDBG Administrator		Neighborhood Resources Department
HOME Administrator		

Table 1– Responsible Agencies

Narrative

The City of Chandler Community and Neighborhood Services Department is the "lead agency" for the Consolidated Plan and Annual Action Plan. The City of Chandler is also a member of the Maricopa County HOME Consortium. The HOME Consortium is the "lead agency" for HUD HOME Investment Partnership Funds. Chandler HOME-funded activities are also included in Maricopa County's Consolidated Plan and Annual Action Plan.

Consolidated Plan Public Contact Information

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PR-10 Consultation - 91.100, 91.110, 91.200(b), 91.300(b), 91.215(l) and 91.315(l)

1. Introduction

The City held 12 public meetings in the Spring/Summer 2019 and conducted an online survey to solicit input from stakeholders and citizens to identify housing and community development priorities in the development of the 2019 Community Needs Assessment (CNA). The CNA is used to provide a community-informed approach to prioritizing federal and local resources and the development of the City of Chandler's Five-Year Consolidated Plan. A public hearing was held at a Chandler City Council meeting on August 8, 2019 to solicit feedback on the 2019 Community Needs Assessment, and public comments were accepted through September 4, 2019. Two additional public hearings were held virtually due to the COVID-19 pandemic on April 22, 2020 and May 7, 2020 to solicit public input on community needs and community development goals for the next five years. A 30-day public comment period was held beginning May 26, 2020 through June 24, 2020 to solicit feedback on the Five-Year Consolidated Plan and the Annual Action Plan for Fiscal Year 2020-2021. Two additional public hearings were held on June 10, 2020 and June 11, 2020. The Chandler City Council authorized the submission of the Consolidated Plan and Annual Action Plan on June 25, 2020.

Provide a concise summary of the jurisdiction's activities to enhance coordination between public and assisted housing providers and private and governmental health, mental health and service agencies (91.215(l)).

The City of Chandler is an active member of For Our City Chandler (FOCC), a network of faith and community-based organizations, non-profit and service agencies, health care providers, businesses, and the City of Chandler, working together in unity and compassion to help Chandler residents. Through participation in FOCC, the City keeps its finger on the pulse of residents' needs and partners to enhance the coordination and delivery of a multitude of services and activities throughout the community.

Describe coordination with the Continuum of Care and efforts to address the needs of homeless persons (particularly chronically homeless individuals and families, families with children, veterans, and unaccompanied youth) and persons at risk of homelessness

The City of Chandler is also an active participant of the Maricopa Regional Continuum of Care with membership on the Governing Board. Through this collaboration, the City works with other government agencies, service organizations and community partners to develop policies and programs reflective of best practices in ending homelessness to include policies and practices governing the administration of Coordinated Entry and HMIS. In addition, the City utilizes CDBG, HOME and local funds to support nonprofit organizations serving persons experiencing homelessness, and to provide services directly to persons experiencing unsheltered homelessness in Chandler through its homeless navigation program "Chandler Connect."

Describe consultation with the Continuum(s) of Care that serves the jurisdiction's area in determining how to allocate ESG funds, develop performance standards and evaluate outcomes, and develop funding, policies and procedures for the administration of HMIS

The City of Chandler is not an ESG Grantee.

2. Describe Agencies, groups, organizations and others who participated in the process and describe the jurisdictions consultations with housing, social service agencies and other entities

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Table 2– Agencies, groups, organizations who participated

1	**Agency/Group/Organization**	AZCEND
	Agency/Group/Organization Type	Services - Housing Services-Elderly Persons Services-Persons with Disabilities Services-homeless
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Public Housing Needs Homelessness Strategy Homelessness Needs - Veterans Homelessness Needs - Unaccompanied youth Anti-poverty Strategy
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community Focus Group/Stakeholder Interviews. Increased likelihood of addressing resident needs.
2	**Agency/Group/Organization**	Banner Behavioral Health Hospital
	Agency/Group/Organization Type	Services-Persons with Disabilities Services-Health Health Agency
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Market Analysis
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Stakeholder Interview. Increased likelihood of addressing resident needs.
3	**Agency/Group/Organization**	Boys and Girls Club of the East Valley
	Agency/Group/Organization Type	Services-Children
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Homeless Needs - Families with children Homelessness Needs - Unaccompanied youth Non-Homeless Special Needs Market Analysis

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	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community Focus Group. Increased likelihood of addressing resident needs.
4	**Agency/Group/Organization**	CATHOLIC CHARITIES OF THE EAST VALLEY
	Agency/Group/Organization Type	Services-Children Services-Victims of Domestic Violence Services-homeless Services - Victims
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Homeless Needs - Chronically homeless Homeless Needs - Families with children Homelessness Needs - Veterans Homelessness Needs - Unaccompanied youth Non-Homeless Special Needs Market Analysis
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community Focus Group. Increased likelihood of addressing resident needs.
5	**Agency/Group/Organization**	Chandler Fire Department
	Agency/Group/Organization Type	Other government - Local
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Lead-based Paint Strategy Public Housing Needs Non-Homeless Special Needs Market Analysis
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Stakeholder Interview. Increased likelihood of addressing resident needs.
6	**Agency/Group/Organization**	Chandler Gilbert ARC
	Agency/Group/Organization Type	Services-Elderly Persons Services-Employment

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	What section of the Plan was addressed by Consultation?	Housing Need Assessment Public Housing Needs Homelessness Strategy Homeless Needs - Chronically homeless Homeless Needs - Families with children Homelessness Needs - Veterans Homelessness Needs - Unaccompanied youth
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community focus group. Increased likelihood of addressing resident needs.
7	**Agency/Group/Organization**	Chandler Police Department
	Agency/Group/Organization Type	Other government - Local
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Homeless Needs - Families with children Non-Homeless Special Needs Market Analysis
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Stakeholder Interview. Increased likelihood of addressing resident needs.
8	**Agency/Group/Organization**	COMMUNITY BRIDGES
	Agency/Group/Organization Type	Services-Children Services-Elderly Persons Services-Persons with Disabilities Services-Education Services-Employment Service-Fair Housing Services - Victims Services - Broadband Internet Service Providers
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Public Housing Needs Homelessness Needs - Unaccompanied youth Economic Development Market Analysis Anti-poverty Strategy

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	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community Survey. Increased likelihood of addressing resident needs.
9	**Agency/Group/Organization**	Dignity Health Chandler Regional Medical Center
	Agency/Group/Organization Type	Services-Health
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Market Analysis
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Stakeholder Interview. Increased likelihood of addressing resident needs.
10	**Agency/Group/Organization**	Care Inc For Our City Chandler
	Agency/Group/Organization Type	Services - Housing Services-Children Services-Elderly Persons Services-Persons with Disabilities Services-Persons with HIV/AIDS Services-Victims of Domestic Violence Services-homeless Services-Health Services-Education Services-Employment Service-Fair Housing Services - Victims Services - Broadband Internet Service Providers Services - Narrowing the Digital Divide Civic Leaders

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	What section of the Plan was addressed by Consultation?	Housing Need Assessment Lead-based Paint Strategy Public Housing Needs Homelessness Strategy Homeless Needs - Chronically homeless Homeless Needs - Families with children Homelessness Needs - Veterans Homelessness Needs - Unaccompanied youth Non-Homeless Special Needs Economic Development Market Analysis Anti-poverty Strategy
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community Focus Groups, Stakeholder Interviews. Increased likelihood of addressing resident needs.
11	**Agency/Group/Organization**	Friends of Chandler Public Library
	Agency/Group/Organization Type	Services-Children Services-Elderly Persons Services-Employment Services - Broadband Internet Service Providers Services - Narrowing the Digital Divide
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Homeless Needs - Families with children Homelessness Needs - Veterans Homelessness Needs - Unaccompanied youth Non-Homeless Special Needs
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community survey. Increased likelihood of meeting resident needs.
12	**Agency/Group/Organization**	FOUNDATION FOR SENIOR LIVING, FSL HOME IMPROVEMENTS
	Agency/Group/Organization Type	Housing Services-Elderly Persons Services-Persons with Disabilities Services - Victims

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	What section of the Plan was addressed by Consultation?	Housing Need Assessment Public Housing Needs Non-Homeless Special Needs Market Analysis
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community focus group. Increased likelihood of meeting resident needs.
13	**Agency/Group/Organization**	HOLY TRINITY LUTHERAN CHURCH
	Agency/Group/Organization Type	Services - Housing Services-Children Services-Elderly Persons Services-Persons with Disabilities Services-Persons with HIV/AIDS Services-Victims of Domestic Violence Services-homeless Services-Health Services-Education Services-Employment Services - Victims
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Homeless Needs - Chronically homeless Homeless Needs - Families with children Non-Homeless Special Needs Market Analysis Anti-poverty Strategy
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community survey. Increased likelihood of meeting resident needs.
14	**Agency/Group/Organization**	Housing and Human Services commission
	Agency/Group/Organization Type	Other government - Local

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	What section of the Plan was addressed by Consultation?	Housing Need Assessment Public Housing Needs Homelessness Strategy Homeless Needs - Chronically homeless Homeless Needs - Families with children Homelessness Needs - Veterans Homelessness Needs - Unaccompanied youth Non-Homeless Special Needs Market Analysis
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Stakeholder interviews. Increased likelihood of meeting resident needs.
15	**Agency/Group/Organization**	ICAN
	Agency/Group/Organization Type	Services-Children Services - Broadband Internet Service Providers Services - Narrowing the Digital Divide Child Welfare Agency
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Homeless Needs - Chronically homeless Homeless Needs - Families with children
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community focus group. Increased likelihood of citizen participation.
16	**Agency/Group/Organization**	Junior Achievement of Arizona
	Agency/Group/Organization Type	Services-Children Services - Broadband Internet Service Providers Services - Narrowing the Digital Divide
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Homeless Needs - Families with children Non-Homeless Special Needs

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	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community survey. Increased likelihood of meeting resident needs.
17	**Agency/Group/Organization**	Matthew's Crossing Food Bank
	Agency/Group/Organization Type	Services-Children Services-Elderly Persons Services-homeless Services-Health
	What section of the Plan was addressed by Consultation?	Homelessness Strategy Homeless Needs - Chronically homeless Homeless Needs - Families with children Homelessness Needs - Veterans Homelessness Needs - Unaccompanied youth
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community survey. Increased likelihood of meeting resident needs.
18	**Agency/Group/Organization**	Mesa United Way
	Agency/Group/Organization Type	Services - Housing Services-Children Services-Elderly Persons Services-Persons with Disabilities Services-Persons with HIV/AIDS Services-Victims of Domestic Violence Services-homeless Services-Health Services-Education Services-Employment Service-Fair Housing Services - Victims Services - Broadband Internet Service Providers Services - Narrowing the Digital Divide
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Homelessness Needs - Veterans Homelessness Needs - Unaccompanied youth Non-Homeless Special Needs

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	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community survey. Increased likelihood of meeting community needs.
19	**Agency/Group/Organization**	Midwest Food Bank - Arizona Division
	Agency/Group/Organization Type	Services-Children Services-Elderly Persons Services-Persons with Disabilities Services-Victims of Domestic Violence Services-homeless
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Non-Homeless Special Needs
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community survey. Increased likelihood of meeting resident needs.
20	**Agency/Group/Organization**	Mission of Mercy
	Agency/Group/Organization Type	Housing Services-Children Services-Elderly Persons Services-Persons with Disabilities Services-Victims of Domestic Violence Services-homeless
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Homeless Needs - Families with children Homelessness Needs - Veterans Homelessness Needs - Unaccompanied youth
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community survey. Increased likelihood of meeting resident needs.
21	**Agency/Group/Organization**	NATIONAL ADVOCACY & TRAINING NETWORK
	Agency/Group/Organization Type	Services-Victims of Domestic Violence

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	What section of the Plan was addressed by Consultation?	Non-Homeless Special Needs
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community survey. Increased likelihood of meeting resident needs.
22	**Agency/Group/Organization**	Neighbors Who Care, Inc.
	Agency/Group/Organization Type	Services-Elderly Persons
	What section of the Plan was addressed by Consultation?	Non-Homeless Special Needs
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community survey. Increased likelihood of meeting resident needs.
23	**Agency/Group/Organization**	NEWTOWN COMMUNITY DEVELOPMENT CORPORATION
	Agency/Group/Organization Type	Housing Services - Housing Service-Fair Housing
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Public Housing Needs Homelessness Strategy Homeless Needs - Families with children Homelessness Needs - Veterans Non-Homeless Special Needs Economic Development Market Analysis Anti-poverty Strategy
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Focus group discussion. Increased likelihood of meeting resident needs.

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24	**Agency/Group/Organization**	One Small Step, Inc.
	Agency/Group/Organization Type	Services-Children Services-Elderly Persons Services-homeless
	What section of the Plan was addressed by Consultation?	Housing Need Assessment
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community survey. Increased likelihood of meeting resident needs.
25	**Agency/Group/Organization**	Recreation and Athletics for Individuals with Disabilities (RAD)
	Agency/Group/Organization Type	Services-Persons with Disabilities
	What section of the Plan was addressed by Consultation?	Non-Homeless Special Needs
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community survey. Increased likelihood of meeting resident needs.
26	**Agency/Group/Organization**	Resurrection Street Ministry, Inc.
	Agency/Group/Organization Type	Services-homeless
	What section of the Plan was addressed by Consultation?	Homeless Needs - Chronically homeless
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community survey. Increased likelihood of meeting resident needs.
27	**Agency/Group/Organization**	Ross Farnsworth East Valley Family YMCA
	Agency/Group/Organization Type	Services-Children Services-homeless
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Non-Homeless Special Needs Market Analysis

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	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community survey. Increased likelihood of meeting resident needs.
28	**Agency/Group/Organization**	A.R.M. SAVE THE FAMILY
	Agency/Group/Organization Type	Housing Services - Housing
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Public Housing Needs Non-Homeless Special Needs Market Analysis Anti-poverty Strategy
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community survey. Increased likelihood of meeting resident needs.
29	**Agency/Group/Organization**	Si Se Puede Foundation
	Agency/Group/Organization Type	Housing Services - Housing Services-Children
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Homeless Needs - Families with children Market Analysis
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community survey. Increased likelihood of meeting resident needs.

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30	**Agency/Group/Organization**	THE SALVATION ARMY
	Agency/Group/Organization Type	Housing Services - Housing Services-Children Services-Elderly Persons Services-Persons with Disabilities Services-Victims of Domestic Violence Services-homeless Services-Health Services - Victims
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Homelessness Strategy Homeless Needs - Chronically homeless Homeless Needs - Families with children Homelessness Needs - Veterans Non-Homeless Special Needs
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Community survey. Increased likelihood of meeting resident needs.
31	**Agency/Group/Organization**	City of Chandler - Development Services
	Agency/Group/Organization Type	Services - Broadband Internet Service Providers Services - Narrowing the Digital Divide Agency - Managing Flood Prone Areas Agency - Management of Public Land or Water Resources Agency - Emergency Management Other government - Local
	What section of the Plan was addressed by Consultation?	Housing Need Assessment

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	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Consulted with the City of Chandler - Development Services department on the development of the 2019 Community Needs Assessment and the Five-Year Consolidated Plan. The department is responsible for providing sound land use planning strategies, design development standards and high quality, cost-effective infrastructure to ensure safety of Chandler's residents. Included within these responsibilities is overseeing the activities of private utilities, wireless carriers and developers, and review and approval of civil plans associated with developments and capital improvements. The department represented the City in the development of the Maricopa County Multi-Jurisdictional Hazard Mitigation Plan.
32	**Agency/Group/Organization**	City of Chandler – Housing and Redevelopment Division
	Agency/Group/Organization Type	Housing Services - Housing Services-Children Services-Elderly Persons Services-Persons with Disabilities Services-Victims of Domestic Violence Services-Homeless
	What section of the Plan was addressed by Consultation?	Housing Need Assessment Homelessness Strategy Homeless Needs - Chronically homeless Homeless Needs - Families with children Homelessness Needs - Veterans Non-Homeless Special Needs
	How was the Agency/Group/Organization consulted and what are the anticipated outcomes of the consultation or areas for improved coordination?	Presentation to Housing and Human Services Commission and to Mayor and City Council during public meetings. Increased likelihood of meeting resident needs.

Identify any Agency Types not consulted and provide rationale for not consulting

n/a

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Other local/regional/state/federal planning efforts considered when preparing the Plan

Name of Plan	Lead Organization	How do the goals of your Strategic Plan overlap with the goals of each plan?
Continuum of Care	Maricopa Association of Governments	Addressing Housing for All Incomes
Homelessness Report 2014-2018	Maricopa Association of Governments	Addressing Housing for All Incomes
Chandler Public Housing Authority Administrative	City of Chandler Housing and Redevelopment Division	Addressing Housing for All Incomes
2018 Housing Needs Assessment	Gruen, Gruen + Associates	Addressing Housing for All Incomes
Chandler Regional Medical Center, Community Health	Dignity Health	Addressing Housing for All Incomes

Table 3– Other local / regional / federal planning efforts

Describe cooperation and coordination with other public entities, including the State and any adjacent units of general local government, in the implementation of the Consolidated Plan (91.215(l))

The City of Chandler is a member of the Maricopa County HOME Consortium and Maricopa Continuum of Care, and works with the State and adjacent units of local government to coordinate a needs assessment, develop strategies to address identified needs, and implement activities that address identified needs.

Additionally, the City of Chandler participated in the development of the Maricopa County Multi-Jurisdictional Hazard Mitigation Plan (2015), and refers to this report and its proposed actions in developing the Consolidated Plan and directing federal funding received. The City recognizes that low income households are likely to be impacted by climate change due to the lack of resources. The City of Chandler continues to commit efforts to prevent and mitigate the vulnerability of both low and moderate income households to the adverse effects of climate change as described in the above-referenced plan.

Narrative

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PR-15 Citizen Participation - 91.105, 91.115, 91.200(c) and 91.300(c)

1. Summary of citizen participation process/Efforts made to broaden citizen participation
Summarize citizen participation process and how it impacted goal-setting

Throughout the development of the City of Chandler's Five-Year Consolidated Plan for Fiscal Years 2020-2025 and the Annual Action Plan for Fiscal Year 2020-2021, the City provided several opportunities for public input and comment. Comments were received through public meetings and an online survey to solicit input from stakeholders and citizens to identify housing and community development priorities in the development of the 2019 Community Needs Assessment (CNA) and Market Analysis. The survey was made available in English and Spanish. Public access to the survey was available at the City website and notices were e-mailed directly to stakeholders and neighborhood associations. The CNA and Market Analysis were used to provide a community-informed approach to prioritizing federal and local resources and the development of the City of Chandler's Five-Year Consolidated Plan. Outreach efforts included 12 public meetings, 17 stakeholder interviews, 624 survey responses, and 5 public hearings. The City's guidelines for Citizen Participation were followed. Public notifications are included in the Appendix. The 2019 Community Needs Assessment is available on the City's website.

The City of Chandler is in adherence to its Citizen Participation Plan. The City of Chandler's proposed changes to the Five-Year Consolidated Plan falls within the parameters established for creating a substantial amendment to the Consolidated Plan. A 30-day public comment period is scheduled for Monday, March 22, 2021 through Tuesday, April 20, 2021. A public hearing is scheduled for Wednesday, April 7, 2021 at 6:00 p.m. at the Housing and Human Services Commission meeting. In-person attendance was welcome. However, due to the public health emergency and recommendations to limit gatherings and the spread of COVID-19, this public hearing was also made available to the public virtually via WebEx or phone. A public notice was published in the local newspaper and also at the City Clerk's office and Neighborhood Resources Department along with social media posts and website announcements. After the 30-day public comment period, the Substantial Amendment to the Consolidated Plan will be presented to Mayor and City Council for approval on April 22, 2021. Any comments received will be included with the final Substantial Amendment submitted to the HUD for approval.

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Citizen Participation Outreach

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Sort Order	Mode of Outreach	Target of Outreach	Summary of response/attendance	Summary of comments received	Summary of comments not accepted and reasons	URL (If applicable)

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1	Internet Outreach	Minorities Non-English Speaking - Specify other language: Spanish Persons with disabilities Non-targeted/broad community Residents of Public and Assisted Housing Housing and Human Services Commission	Throughout the development of the City of Chandler's Five-Year Consolidated Plan for Fiscal Years 2020-2025 and the Annual Action Plan for Fiscal Year 2020-2021, the City provided several opportunities for public input and comment. Comments were received through public meetings and an online survey to solicit input from stakeholders and citizens to identify housing and community development	Survey results are available as part of the 2019 Community Needs Assessment and Market Analysis.	Not applicable.	

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			priorities in the development of the 2019 Community Needs Assessment (CNA). The CNA is used to provide a community-informed approach to prioritizing federal and local resources and the development of the City of Chandler's Five-Year Consolidated Plan. Outreach efforts included 12 public meetings, 17 stakeholder interviews, and 624 survey responses. Public access to			

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Sort Order	Mode of Outreach	Target of Outreach	Summary of response/attendance	Summary of comments received	Summary of comments not accepted and reasons	URL (If applicable)
			the survey was available at the City website and notices were e-mailed directly to stakeholders and neighborhood associations. The survey was made available in English and Spanish.			

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2	Public Meeting	Non-targeted/broad community	192 Chandler nonprofits, business leaders and residents attended and 17 stakeholder interviews were also conducted. 12 public meetings were held throughout January 24, January 25, March 27, March 28, March 29. A public meeting to discuss the results of comments received was held on June 12, 2019.	Comments from these meetings focused on crisis services, homelessness, behavioral health, housing, neighborhoods, workforce development, youth services, senior services, people with disabilities, and health and interests of veterans.The Consolidated Plan Goals and Priority Needs were developed from comments received.	Not applicable	

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3	Public Hearing	Non-targeted/broad community Housing and Human Services Commission/Chandler City Council	Five public hearings were held. Three public hearings were held during the development of the Consolidated Plan. Two public hearings were held when Chandler's Five-Year Consolidated Plan was published for public comment.	Public hearing dates prior to publication: August 8, 2019; April 22, 2020; and May 7, 2020. One public hearing was held with the Housing and Human Services Commission on June 10, 2020, and a second public hearing was held during a City Council meeting on June 11, 2020. No public comments were received during these public hearings.	Not applicable.	
4	Public Notices	Minorities	Public Notices were posted on	No public comments	Not applicable.	https://www.chandleraz.gov/residents/neighborhood-resources/community-

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Sort Order	Mode of Outreach	Target of Outreach	Summary of response/attendance	Summary of comments received	Summary of comments not accepted and reasons	URL (If applicable)
		Non-English Speaking - Specify other language: Spanish Persons with disabilities Non-targeted/broad community	the City's website providing the public with information about upcoming public meetings and public hearings. Public notices for public hearings were posted in a local newspaper with general circulation in the community, and also posted in the City Clerk's office.	were received during the public comment period for the draft 2019 Community Needs Assessment. No public comments were received during the public comment period for the draft Five-Year Consolidated Plan and Annual Action Plan.		development/plans-and-reports https://www.chandleraz.gov/residents/neighborhood-

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Sort Order	Mode of Outreach	Target of Outreach	Summary of response/attendance	Summary of comments received	Summary of comments not accepted and reasons	URL (If applicable)
5	Public Hearing	Non-targeted/broad community Housing and Human Services Commission/Chandler City Council	A 30-day public comment period was held from March 22, 2021 through April 20, 2021. One public hearing was held during the Housing and Human Services Commission meeting on April 7, 2021 when the Substantial Amendment was published for public comment.	Public comments received will be included in the Substantial Amendment that is submitted to HUD.	Not applicable.	

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6	Public Notices	Minorities Non-English Speaking - Specify other language: Spanish Persons with disabilities Non-targeted/broad community	Public Notices were posted on the City's website providing the public with information about the 30-day public comment period and upcoming public meetings and public hearings. Public notices for 30-day public comment period and public hearings were posted in a local newspaper with general circulation in the community, and also posted in the City Clerk's office and	Public comments received will be included in the Substantial Amendment that is submitted to HUD.	Not applicable.	https://www.chandleraz.gov/residents/neighborhood-resources/community-development/plans-and-reports https://www.chandleraz.gov/residents/neighborhood-

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Sort Order	Mode of Outreach	Target of Outreach	Summary of response/attendance	Summary of comments received	Summary of comments not accepted and reasons	URL (If applicable)
			Neighborhood Resources Department.			

Table 4– Citizen Participation Outreach

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Needs Assessment

NA-05 Overview

Needs Assessment Overview

The City of Chandler has continued to grow and change since 2000 including the demographics of those living in poverty. While a large percentage of the population identifies as White, increased diversity is seen among Black/African American, Asian and Hispanic individuals.

For a full overview, please see the text attachments.

Needs Assessment Overview 1

However, despite the growing diversity, population growth, and increased AMI, poverty and housing continue to be a hardship facing many residents. In Chandler, there are 21,485 households (24.8%) with incomes <80% AMI. This means that 8.2% of Chandler's population lives below the poverty level. In Chandler, 8.3% of residents live alone in single person households and 24.3% of households are single-parent households. Single persons and parents generally have a single income source, resulting in unique housing needs. Nearly all single parent households are headed by women and many live below the poverty level. In addition, the rate of housing problems is disproportionately high among minorities at all income levels, and severe housing problems are high among all minority households with incomes less than 80% AMI. Housing cost burden impacts 12,925 households. Rates of cost burden are highest among households with income <30% AMI and 30-50% AMI.

Needs Assessment Overview 2

Both owning and renting are expensive; the income needed to afford a median-price home and to pay for a 3 bedroom apartment is very close. For renters who are prepared, owning a home can be as or more affordable than renting. Because incomes are higher in Chandler and HUD assistance uses Maricopa County income guidelines, creative approaches are essential. Due to the high housing prices, 275 owners and 400 renters live in severely overcrowded conditions. Severe overcrowding is most common among owners with incomes <30% AMI and renters with incomes 50-80% AMI. Severe overcrowding is most prevalent among owners and renters with incomes 30-50% AMI. Therefore, 175 owners and 235 renters occupy substandard housing.

Needs Assessment Overview 3

The Chandler Public Housing Authority (PHA) manages 303 public housing units, 486 Section 8 Housing Choice Vouchers, and 25 scattered site rental assistance payments. There are over 1,600 families on the combined waiting lists. The average income of Public Housing residents is $14,892 while the average

income of Section 8 participants is $12,676. The average length of residency for Public Housing residents is 4.8 years, and in Section 8 is 9 years. The average household size is 3.5. The elderly represent 20% of public housing residents and Section 8 participants.

Needs Assessment Overview 4

In addition to housing, homelessness continues to be a priority of Chandler. The 2018 Point-in-Time count revealed 54 individuals experiencing homelessness. In addition, Chandler identified additional individuals in shelter through the Housing Inventory Count. Throughout Maricopa County, the Point-in-Time count identified 2,618 unsheltered and 3,680 sheltered individuals experiencing homelessness in the county. Some people require limited assistance to regain permanent housing and self-sufficiency, while others require extensive and long-term support. The cost of housing leaves little for the necessities; many live paycheck to paycheck and one crisis can lead to repeat homelessness.

Needs Assessment Overview 5

Other priorities that directly affect Chandler include elderly who are isolated and youth who are isolated. Elderly are the largest HUD special population. There are 12,105 households with at least one person age 62-74; 4,884 households have at least one person age 75+. In Chandler, the number of isolated seniors living alone is estimated to be around 1,692. Youth who are isolated are an additional concern as there is a strong indicator of lower graduation rates resulting in isolation and 2,328 young Chandler residents have been shown to be isolated.

Lastly, individuals with mental health or substance use disorders and individuals with intellectual and developmental disabilities are a top population in need for Chandler. There is an estimated 12,000 to 20,000 individuals affected by mental health or substance use disorders in the Chandler neighborhoods. Chandler's residents with intellectual or developmental disabilities represent just over 5% of the population. Resources for this population are necessary to ensure a thriving community.

Although all of these needs are individual, they often overlap and have a greater effect than expected. For example, a senior living with low income is more vulnerable than just a senior or just an individual with low income. We often find that a person is not defined as just one need and seeing the entire picture allows Chandler to meet their individual needs.

Non-housing community development needs are described in Section NA-50.

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NA-50 Non-Housing Community Development Needs - 91.415, 91.215 (f)

Describe the jurisdiction's need for Public Facilities:

Public facilities are a vital piece of investment in the future well-being of Chandler residents and neighborhoods. Improvements to Public Facilities including parks, neighborhood centers, and other gathering places are key to continuing to make Chandler a thriving community. Improvements to any of the City's existing nine community parks and 52 neighborhood parks, public buildings, and private buildings that incorporate significant public use are critical to maximizing resources and properly target facility design to reach everyone in the City of Chandler. With improving these locations, City of Chandler is focused on expanding need, improving access, and building a community that is welcome to all.

How were these needs determined?

The City of Chandler Community Needs Assessment was conducted in 2019 to understand the needs of the community and to address how Public Facilities coincide with those needs. With the 2019 Community Needs Assessment and the 2014-2023 Capital Improvement Program (CIP), the City will continue to plan and address the public infrastructure improvements. While the majority of funding for public infrastructure improvements is from bond sales and impact fees, CDBG funds may be used.

Describe the jurisdiction's need for Public Improvements:

There are various pieces of the Capital Improvement Program that the City works to address. The Water CIP is used to build, upgrade, and refurbish facilities used by the City water system. Water mains in various areas of the City are old and deteriorating, resulting in water main breaks and interrupted water service. The City has prioritized several aging areas served by pipes 30 years of age or older. These areas will be evaluated for possible replacement. Needed upgrades and repairs to the water distribution system are coordinated with street overlay, reconstruction and intersection improvements.

Every three years, the Streets Division inventories all streets within the City and evaluates the condition of the pavement. This data is entered into a computerized preventative maintenance tracking system to identify which streets are in need of maintenance or rehabilitation. Currently, about 11.6%, or 232 lane miles, need repaving. The specific streets to be repaved will be evaluated each year based on known construction projects in the area (i.e., avoid repaving just prior to major residential/commercial construction) and cost effectiveness (grouping streets in a neighborhood into one larger project).

Installation of additional street lights on arterial, collector, and local streets is needed to increase lighting levels to meet City standards. The City receives several calls per year about inadequate lighting

on local streets in residential areas. These requests are evaluated on a case-by-case basis. Existing poles also need to be replaced.

How were these needs determined?

The City of Chandler Community Needs Assessment was conducted in 2019 to understand the needs of the community and address how Public Facilities coincide with those needs. With the 2019 Community Needs Assessment and the 2014-2023 Capital Improvement Program (CIP), the City will continue to plan and address the public infrastructure improvements. While the majority of funding for public infrastructure improvements is from bond sales and impact fees, CDBG funds may be used.

Describe the jurisdiction's need for Public Services:

The City of Chandler Community Needs Assessment identified six target populations and seven top areas of need. The six target populations include people experiencing homelessness or housing crisis, households with low and moderate income, youth who are vulnerable or have low income, seniors who are isolated or have low income, people with mental health or substance use disorders, and people living with physical or intellectual disabilities. The top areas of need include housing for all incomes, behavioral health, homelessness, better communication of available resources, transportation, social isolation, and food insecurity. The Public Services aim to address these target populations and areas of need through robust services in Chandler.

How were these needs determined?

The City of Chandler Community Needs Assessment was conducted in 2019 to understand the needs of the community. The 2019 Community Needs Assessment contained a combination of survey responses, stakeholder interviews, and focus groups that identified the target populations in need and the top areas of need.

Based on the needs analysis above, describe the State's needs in Colonias

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Housing Market Analysis

MA-05 Overview

Housing Market Analysis Overview:

Select Low-Income Populations

- The percent of individuals living in poverty has almost doubled from 4.6% in 2000 to 8.2% in 2018.
- 21,485 Chandler households (24.8%) have incomes <80% AMI; including 43.9% of households with at least one person age 75+ and 30.7% with at least one child less than 6 years of age.
- 5.2% of the population has a disability.
- 8.2% of the population lives below the poverty level (11.9% children; 6.8% seniors).

General Housing Market Conditions

- 67,141 (71.6%) of units are single-family detached.
- The median home value has increased by 101.5% over that time period, which can be viewed both positively and negatively. If home values continue to climb, lower household income individuals and families may be priced out of the local housing and rental market.
- 10,871 units were built before 1980, with 2,214 units being occupied by children less than 6 years of age.
- In recent years, Chandler has taken steps to encourage the development of affordable housing by updating its zoning ordinance and map and other land use controls.

Homeownership Conditions

- Low-income homeowners experience higher rates of cost burden.
- 23,685 units have housing problems; 410 are in substandard condition.
- Higher incomes in Chandler limit the pool of HUD-eligible homebuyers.

Homelessness Conditions

- The City uses CDBG, HOME and local funds to support regional organizations that serve the City's homeless population. The Interfaith Homeless Emergency Lodging Program (I-HELP) was implemented in 2013. For several years, the City has also offered Tenant Based Rental Assistance (TBRA) with intensive case management for chronically homeless individuals and families.

Over the past 18 years, residents of Chandler have become more educated and have higher median household incomes. However, as a result of shifting economies and demographics, the percent of individuals living in poverty has almost doubled from 4.6% to 8.2% in 2018. The median home value has increased by 101.5% over that time period, which can be viewed both positively and negatively. If home values continue to climb, lower household income individuals and families may be priced out of the local housing and rental market.

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MA-45 Non-Housing Community Development Assets - 91.410, 91.210(f)

Introduction

In 2019, Chandler's median income for all household and family types was higher than Maricopa County. Chandler's median household income of $77,278 was 31.9% higher than the Maricopa County median.

The current unemployment rate in Chandler is 5.62%. Among the employed, 30.3% work in management, business, and financial occupations, and 25.1% work in sales and office occupations. 7.7% of the workforce is employed in lower-paying service occupations.

Higher education is directly related to earnings potential and 43% of Chandler residents hold a Bachelor's degree or Graduate degree and another third have some college, including an Associate's degree. Adults with a bachelor's degree earn an average of 150% more than an adult with no high school diploma or equivalent and adults with a Graduate or Professional degree earn 217% more than adults with no high school diploma or equivalent. 8% of Chandler's population age 25+ does not have a HS diploma or equivalent.

Economic Development Market Analysis

Business Activity

Business by Sector	Number of Workers	Number of Jobs	Share of Workers %	Share of Jobs %	Jobs less workers %
Agriculture, Mining, Oil & Gas Extraction	578	50	1	0	-1
Arts, Entertainment, Accommodations	11,733	11,287	12	12	0
Construction	5,266	4,261	6	5	-1
Education and Health Care Services	15,958	13,148	17	14	-3
Finance, Insurance, and Real Estate	11,020	10,444	12	11	-1
Information	2,584	3,035	3	3	0
Manufacturing	13,297	22,449	14	24	10
Other Services	2,974	2,592	3	3	0
Professional, Scientific, Management Services	8,971	6,818	10	7	-3
Public Administration	2	0	0	0	0
Retail Trade	13,145	15,056	14	16	2

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Business by Sector	Number of Workers	Number of Jobs	Share of Workers %	Share of Jobs %	Jobs less workers %
Transportation and Warehousing	3,647	624	4	1	-3
Wholesale Trade	5,114	3,697	5	4	-1
Total	94,289	93,461	--	--	--

Table 5 - Business Activity

Data Source: 2011-2015 ACS (Workers), 2015 Longitudinal Employer-Household Dynamics (Jobs)

Labor Force

Total Population in the Civilian Labor Force	137,408
Civilian Employed Population 16 years and over	129,685
Unemployment Rate	5.62
Unemployment Rate for Ages 16-24	16.64
Unemployment Rate for Ages 25-65	3.91

Table 6 - Labor Force

Data Source: 2011-2015 ACS

Occupations by Sector	Number of People
Management, business and financial	41,740
Farming, fisheries and forestry occupations	6,388
Service	10,615
Sales and office	34,545
Construction, extraction, maintenance and repair	7,030
Production, transportation and material moving	5,720

Table 7 – Occupations by Sector

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Data Source: 2011-2015 ACS

Travel Time

Travel Time	Number	Percentage
< 30 Minutes	81,525	68%
30-59 Minutes	32,715	27%
60 or More Minutes	5,380	4%
Total	***119,620***	***100%***

Table 8 - Travel Time

Data Source: 2011-2015 ACS

Education:

Educational Attainment by Employment Status (Population 16 and Older)

Educational Attainment	In Labor Force		
	Civilian Employed	Unemployed	Not in Labor Force
Less than high school graduate	6,810	425	3,660
High school graduate (includes equivalency)	15,685	1,285	4,970
Some college or Associate's degree	36,930	2,075	7,800
Bachelor's degree or higher	50,010	1,640	7,415

Table 9 - Educational Attainment by Employment Status

Data Source: 2011-2015 ACS

Educational Attainment by Age

	Age				
	18–24 yrs	25–34 yrs	35–44 yrs	45–65 yrs	65+ yrs
Less than 9th grade	310	1,435	1,390	2,220	1,524
9th to 12th grade, no diploma	2,430	1,850	1,645	2,355	1,260

	Age				
	18–24 yrs	25–34 yrs	35–44 yrs	45–65 yrs	65+ yrs
High school graduate, GED, or alternative	6,250	5,525	5,455	10,965	5,905
Some college, no degree	8,920	9,645	7,990	15,940	5,675
Associate's degree	1,415	3,745	3,295	6,210	1,635
Bachelor's degree	1,980	9,920	11,660	15,490	4,020
Graduate or professional degree	120	4,865	8,265	8,910	3,010

Table 10 - Educational Attainment by Age

Data Source: 2011-2015 ACS

Educational Attainment – Median Earnings in the Past 12 Months

Educational Attainment	Median Earnings in the Past 12 Months
Less than high school graduate	37,554
High school graduate (includes equivalency)	61,254
Some college or Associate's degree	75,624
Bachelor's degree	105,275
Graduate or professional degree	128,776

Table 11 – Median Earnings in the Past 12 Months

Data Source: 2011-2015 ACS

Based on the Business Activity table above, what are the major employment sectors within your jurisdiction?

17% of employed Chandler residents work in the educational services, health care, and social services industry. Other high-employment industries are manufacturing (14%), retail trade (14%), finance, insurance and real estate (12%), and professional/scientific/management services (10%).

Describe the workforce and infrastructure needs of the business community:

The City of Chandler is a progressive City known as the “Innovation Hub of the Southwest.” Key industries include autonomous vehicle R&D; aviation and aerospace; business and financial services; healthcare and bioscience; high-tech manufacturing and development; and information technology and software. Chandler has five designated employment corridors: Airpark Area, Downtown Chandler, Price Corridor, Uptown Chandler and West Chandler. Within these five areas, current business activity and land reserved for future employment uses are most concentrated.

Describe any major changes that may have an economic impact, such as planned local or regional public or private sector investments or initiatives that have affected or may affect job and business growth opportunities during the planning period. Describe any needs for workforce development, business support or infrastructure these changes may create.

Chandler continues to have a strong business platform and leverages relationships throughout the public and private sectors. Chandler thrives on fostering a relationship between the business community and local government through services like Business Location Team which assists businesses with on-site inspections and capital improvement projects such as improved wireless networks and water systems. The City of Chandler continues to offer some of the lowest rates in the region for utilities and offers competitive incentives for businesses including tax credits and tax reductions. Chandler is focused on supporting startups through the bussiness incubation program, ASU's Makerspace collaboration through the Chandler Innovation Center, coworking spaces, and angel investing workshops and investments. Chandler ultimately focuses on shopping local through the campaign "Shop Chandler" which encourages living, working, and shopping in Chandler.

How do the skills and education of the current workforce correspond to employment opportunities in the jurisdiction?

The skills and education of the current workforce closely correspond to employment opportunities in Chandler. Chandler is home to some of the most notable names in manufacturing, technology, financial and business services and prides itself on having a progressive vision for success and creating a platform for possibility. 43% of Chandler's workforce has a bachelor’s degree or higher.

Proximity to four major freeways also allows employers to easily draw workers from all over the Greater Phoenix area. According to data provided by HUD, Chandler draws a large number of workers for its education, health care services, and arts, entertainment and accommodations for jobs from outside the City.

Describe any current workforce training initiatives, including those supported by Workforce Investment Boards, community colleges and other organizations. Describe how these efforts will support the jurisdiction's Consolidated Plan.

Does your jurisdiction participate in a Comprehensive Economic Development Strategy (CEDS)?

No

If so, what economic development initiatives are you undertaking that may be coordinated with the Consolidated Plan? If not, describe other local/regional plans or initiatives that impact economic growth.

Chandler does not participate in a Comprehensive Economic Development Strategy (CEDS).

Chandler's Economic Development Division promotes the City as a preferred location for new and expanding businesses; their primary purpose is to enhance employment opportunities and improve Chandler's tax base by focusing on industrial, office, retail, revitalization and tourism development. The City has planned for balance by focusing on the creation of distinct employment corridors, investing in infrastructure and building quality neighborhoods.

The City is currently developing adaptive re-use processes and tools to assist in reuse of vacant commercial structures. The goals of the re-use tool are to preserve community character, optimize existing infrastructure, and restore properties to productive use.

The City is utilizing a comprehensive strategy to revitalize the downtown area through direct investment and partnerships with private firms. In a relatively short period of time, it has created a huge transformation. The restoration of historic building facades and the reintroduction of the original colonnades have created a welcoming atmosphere where people feel comfortable. The recently completed Arizona Avenue improvements expand the walkability of Downtown and bring a much-needed balance between vehicles, pedestrians and bicycles.

In the next five years, the focus of revitalization efforts will be on completing development on the City-owned sites, increasing the number of arts, cultural and entertainment facilities, and marketing the area south of the Historic Square to attract additional investment in the Downtown area in coordination with the Consolidated Plan efforts.

Discussion

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MA-50 Needs and Market Analysis Discussion

Are there areas where households with multiple housing problems are concentrated? (include a definition of "concentration")

Chandler consists of approximately 65 square miles and has reached its physical geographic limits, with the exception of a few remaining county islands. Opportunities for economic growth are focused on revitalization and preservation. Chandler's central city includes many long-established neighborhoods, and many of these neighborhoods are also home to populations who are in the minority and with low-income.

Chandler is an "exception" community in which at least 36.68% of the population in a Census Block Group must be LMI for the area to be considered as a CDBG target area. The City identified 11 Census Block Groups that meet the 51% LMI definition, mainly located north of the San Tan Freeway (Loop 202). An additional 26 Census Block Groups that meet the 36.68% LMI definition were identified, many located near the 51% definition Blocks. The City's Community Development Geographic Priority titled "CDBG Eligible Areas" includes all eligible Census Block Groups.

Are there any areas in the jurisdiction where racial or ethnic minorities or low-income families are concentrated? (include a definition of "concentration")

Thirteen Census Tracts with a high concentration of minorities were identified. Concentration is defined as areas where the proportion of minorities is 10% or more than the proportion of minorities throughout the city.

What are the characteristics of the market in these areas/neighborhoods?

The need for residential revitalization is evident. Affordability is especially needed for low and moderate-income populations, families in crisis and unskilled workers. Adding housing units, loft and studio space to encourage young professionals, artisans and employees at various income levels to live close to their employment is one strategy to promote both revitalization and a mix of income levels in Chandler's older neighborhoods. Relatively small upgrades and aesthetic improvements to housing units could result in an affordable housing alternative for many families. Conveniently located near jobs, shopping and other activities, these neighborhoods also bring savings in transportation costs as well as commuting time.

Revitalization goes beyond housing rehabilitation. Chandler's oldest neighborhoods would also benefit from targeted maintenance or replacement of sidewalks and other infrastructure, demolition of uninhabitable structures, and the introduction of retrofitted amenities, such as parks or paths. Code enforcement and cooperation with schools, law enforcement, social service agencies and others combined with assistance to first time homebuyers, will attract new homeowners and further contribute to revitalization.

Eliminating blight in unsuccessful strip malls or vacant structures and focusing on neighborhood beautification and landscaping can also improve quality of life. Older commercial centers and buildings may have significant re-use potential. Some underutilized business properties are of sufficient size to support mixed-use office, retail, job training and service enterprises as well as residential clusters. Re-use and modernization outgrowth from downtown also create potential for in-town enterprises.

Private investment, bolstered by municipal economic development and revitalization programs, will be the engine that drives the revitalization of neighborhoods. Implementation of well-timed and sustainable marketplace and regulatory incentives represents a significant opportunity to accomplish needed improvements that add to the stability of nearby neighborhoods. Chandler's business and development community as well nonprofit organizations are critical partnering resources in maximizing improvement efforts.

Are there any community assets in these areas/neighborhoods?

Many of the City's oldest neighborhoods are located near downtown. Conveniently located near jobs, shopping and other activities, these neighborhoods bring savings in transportation costs and commuting time.

Are there other strategic opportunities in any of these areas?

The City created a traditional neighborhood academy and has been working with low and moderate income neighborhoods to create a strong sense of identity and pride that will serve as the impetus for residential-area revitalization. Preserving historic and cultural assets and providing opportunities for residents with low and moderate income are residential-area revitalization goals. Specific strategies include housing rehabilitation, addressing obsolete housing, demolishing vacant uninhabitable structures, single-family infill development, and possibly re-platting of some areas to achieve lot sizes and shapes more attractive to new single-family development.

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MA-60 Broadband Needs of Housing occupied by Low- and Moderate-Income Households - 91.210(a)(4), 91.310(a)(2)

Describe the need for broadband wiring and connections for households, including low- and moderate-income households and neighborhoods.

100% of Chandler's geography has access to Broadband Internet, with 90.0% of households having an internet subscription, a higher number than the Maricopa County average (84.1%). The average home download speed in Chandler is 80 Mbps, nearly double the average speed of Maricopa County (41.6 Mbps.)

According to Broadband Now, small households with 1-2 individuals need download speeds of at least 25 Mbps. For larger households of four or more or individuals looking to work from home, speeds of at least 1000 Mbps are ideal.

Describe the need for increased competition by having more than one broadband Internet service provider serve the jurisdiction.

Chandler has a total of 22 internet providers including 7 Fiber providers, 3 Cable Internet providers, 7 DSL providers, 8 Fixed Wireless providers and 2 Satellite providers. Standard rates for internet access in Chandler range from $46 to $105 monthly, depending on service provider and download speed. Lower income areas of downtown Chandler north of the San Tan Freeway and west of North McQueen Road tend to have slightly lower numbers of provider options.

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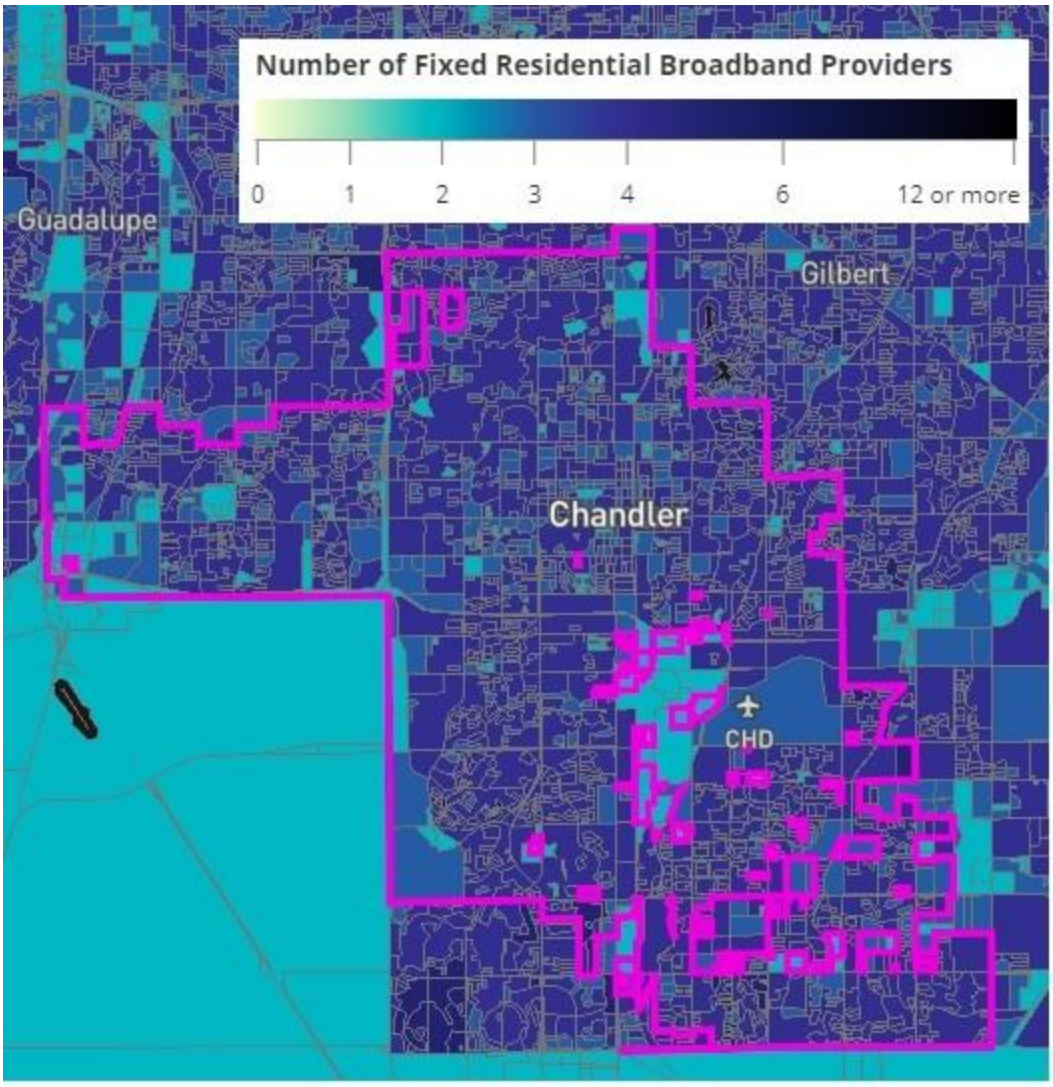

Broadband Coverage Map

MA-65 Hazard Mitigation - 91.210(a)(5), 91.310(a)(3)

Describe the jurisdiction's increased natural hazard risks associated with climate change.

The City of Chandler participated in the development of the Maricopa County Multi-Jurisdictional Hazard Mitigation Plan (2015), and found that the following impacts are possible due to climate change:[1]

- Snowpack and streamflow amounts are projected to decline in parts of the Southwest, decreasing surface water supply reliability for cities, agriculture, and ecosystems. The Southwest produces more than half of the nation's high-value specialty crops, which are irrigation-dependent and particularly vulnerable to extremes of moisture, cold, and heat. Reduced yields from increasing temperatures and increasing competition for scarce water supplies will displace jobs in some rural communities.
- Increased warming, drought, and insect outbreaks, all caused by or linked to climate change, have increased wildfires and impacts to people and ecosystems in the Southwest. Fire models project more wildfire and increased risks to communities across extensive areas.
- Flooding and erosion in coastal areas are already occurring even at existing sea levels and damaging some California coastal areas during storms and extreme high tides. Sea level rise is projected to increase as Earth continues to warm, resulting in major damage as wind-driven waves ride upon higher seas and reach farther inland.
- Projected regional temperature increases, combined with the way cities amplify heat, will pose increased threats and costs to public health in southwestern cities, which are home to more than 90% of the region's population. Disruptions to urban electricity and water supplies will exacerbate these health problems

[1] https://www.maricopa.gov/DocumentCenter/View/5118/Hazard-Mitigation-Plan-PDF?bidId=

Describe the vulnerability to these risks of housing occupied by low- and moderate-income households based on an analysis of data, findings, and methods.

Low income households are likely to be impacted by climate change due to the lack of resources. The City of Chandler continues to commit efforts to prevent and mitigate the vulnerability of both low- and moderate-income households to the adverse effects of climate change as described above.

The City of Chandler outlined the following mitigation actions and projects for Hazard Mitigation in the Maricopa County Multi-Jurisdictional Hazard Mitigation Plan (2015), pages 369-370. These include:

1. Review building permits for compliance with Floodplain Ordinance and NFIP regulations.

2. Maintain the currency of the safety element of the Chandler General Plan, and monitor its effectiveness at preventing and mitigating hazards.

3. Promote availability of the City of Chandler Hazard Mitigation Plans (HMGP) in an understandable format to civic and private groups.

4. Continue to ensure through proper planning, zoning and building codes that all safety measures are in place for new building construction and placement.

5. Continue to ensure that the City of Chandler Drought Management Plan is updated to meet the needs of the City to mitigate drought severity.

6. Continue to maintain a diverse water portfolio. Minimize any reductions to existing supplies by protecting and securing existing water rights, completing Indian water rights settlements, and meeting environmental requirements of water resources. Maximize the use of existing assets to ensure adequate water supply is available through groundwater wells, surface water diversions, use of recharged water, and encouraging the use of reclaimed water for appropriate purposes. Seek and utilize alternative water supplies (CAP excess water, reclaimed water, saline/brackish groundwater, support the Arizona Water Bank) to increase resource reliability and mitigate drought severity. Continue to implement the City's Drought Plan.

7. Each Lead City Department will rank the vulnerability of existing assets, with assistance from the Emergency Management Workgroup, and implement protection plans with the highest vulnerability being implemented first.

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Strategic Plan

SP-05 Overview

Strategic Plan Overview

Public and stakeholder input, records of past funding, the needs assessment and market analysis are used to determine the relative priority of activities and the populations who will be served. Assignment of priority does not reflect a lack of need for any particular population or activity; it merely identifies those conditions that are most likely to be addressed with limited HUD funding. The City of Chandler strives to fund high priority activities during the five years.

The City's Consolidated Plan includes five priorities with activity goals to address each. Needs that may be addressed with HOME funds are incorporated into the Maricopa County Consolidated Plan in HUD's e-con planning suite system. Goals have been established in the following Consolidated Plan areas:

1. Creating and Preserving Affordable Housing
2. Maintain Owner-Occupied Housing
3. Support Public Services and Promote Fair Housing
4. Support Public Facilities and Public Improvements
5. Neighborhood Revitalization

The Consolidated Plan includes the activities, numeric goals and HUD CDBG resources that will be used by the City to address identified needs.

In addition to CDBG resources, Chandler leverages other funding including approximately $1.1 million in general funds, federal resources including those for public housing and the Section 8 Housing Choice Voucher program, HOME, ESG and Continuum of Care funding, and state resources including the Low Income Housing Tax Credits and the National Housing Trust Fund. These leveraged funds work to address the needs of individuals experiencing homelessness, populations who are vulnerable including youth and elderly, individuals with special needs and individuals with low and moderate income.

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SP-10 Geographic Priorities - 91.415, 91.215(a)(1)

Geographic Area

Table 12 - Geographic Priority Areas

1	**Area Name:**	Citywide
	Area Type:	Direct Benefit Activities
	Other Target Area Description:	Direct Benefit Activities
	HUD Approval Date:	
	% of Low/ Mod:	
	Revital Type:	
	Other Revital Description:	
	Identify the neighborhood boundaries for this target area.	
	Include specific housing and commercial characteristics of this target area.	
	How did your consultation and citizen participation process help you to identify this neighborhood as a target area?	
	Identify the needs in this target area.	
	What are the opportunities for improvement in this target area?	
	Are there barriers to improvement in this target area?	
2	**Area Name:**	CDBG Eligible Areas
	Area Type:	Other
	Other Target Area Description:	Other
	HUD Approval Date:	
	% of Low/ Mod:	
	Revital Type:	
	Other Revital Description:	
	Identify the neighborhood boundaries for this target area.	
	Include specific housing and commercial characteristics of this target area.	
	How did your consultation and citizen participation process help you to identify this neighborhood as a target area?	
	Identify the needs in this target area.	

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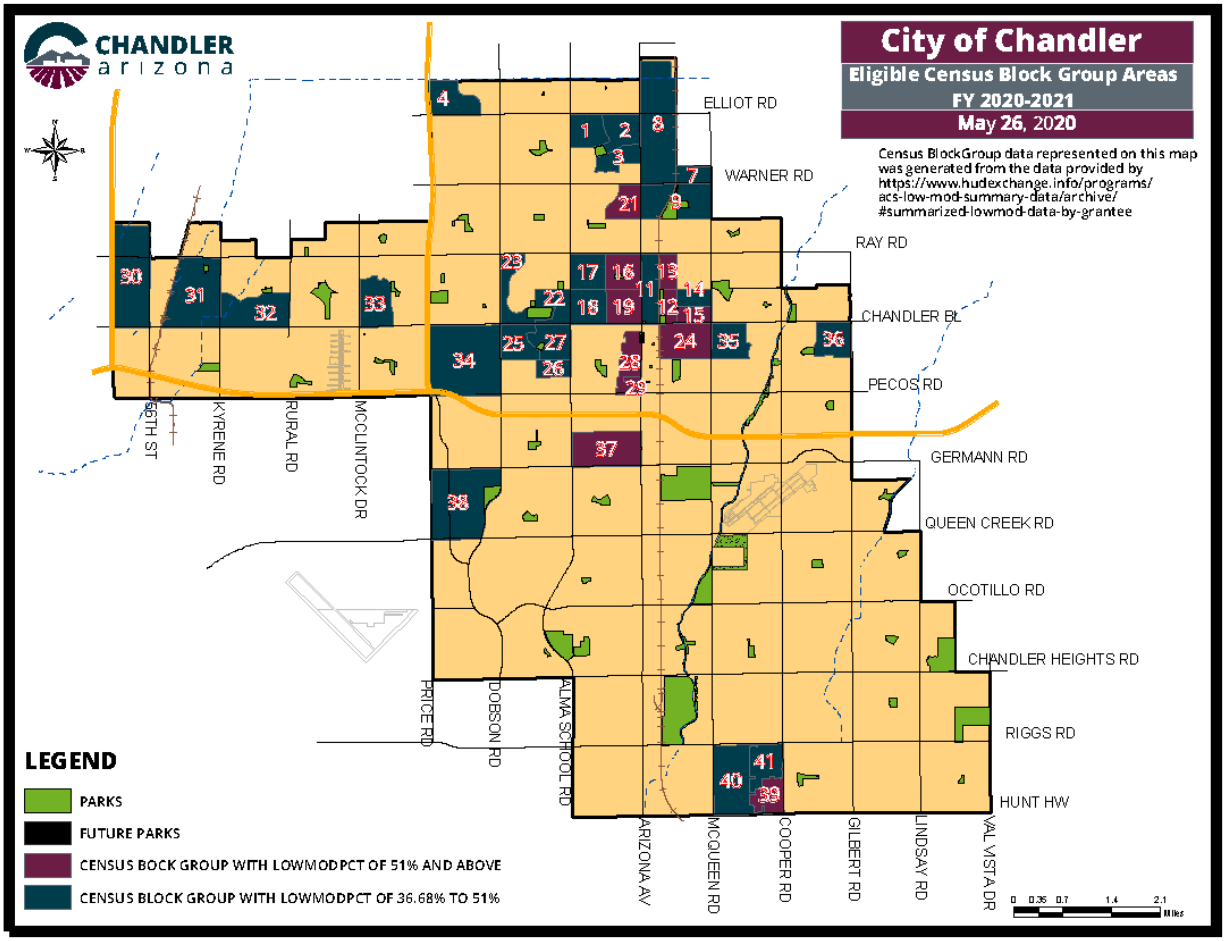
	What are the opportunities for improvement in this target area?	
	Are there barriers to improvement in this target area?	

General Allocation Priorities

Describe the basis for allocating investments geographically within the state

Resources will be committed pursuant to input received from citizens, stakeholders and providers during the development of the 2019 Community Needs Assessment. Public Services are allocated throughout the City based on an individual's income eligibility. Rehabilitation services are also provided based on client eligibility, of which income is one of the criteria. City or public facility improvements or expansion projects, and code enforcement are examples of CDBG-funded activities that are targeted to CDBG-eligible areas. The attached chart highlights the CDBG Eligible Census Block Group Areas.



CDBG Eligible Areas - City of Chandler

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SP-25 Priority Needs - 91.415, 91.215(a)(2)

Priority Needs

Table 13 – Priority Needs Summary

1	**Priority Need Name**	Affordable Rental Housing
	Priority Level	High
	Population	Extremely Low Low Moderate Large Families Families with Children Chronic Homelessness Individuals Victims of Domestic Violence Elderly Persons with Mental Disabilities Persons with Physical Disabilities Persons with Developmental Disabilities
	Geographic Areas Affected	Direct Benefit Activities
	Associated Goals	Creating and Preserving Affordable Housing Administration
	Description	
	Basis for Relative Priority	
2	**Priority Need Name**	Affordable Owner-Occupied Housing
	Priority Level	High
	Population	Low Moderate Large Families Families with Children Elderly Individuals Victims of Domestic Violence
	Geographic Areas Affected	Direct Benefit Activities

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	Associated Goals	Maintain Owner-Occupied Housing Administration
	Description	
	Basis for Relative Priority	Priority based on data analysis in the 2019 Community Needs Assessment and Market Analysis, including survey responses, focus groups, stakeholder interviews and public input.
3	**Priority Need Name**	Public Services and Fair Housing
	Priority Level	High
	Population	Extremely Low Low Moderate Large Families Families with Children Elderly Public Housing Residents Chronic Homelessness Individuals Families with Children Mentally Ill Chronic Substance Abuse veterans Persons with HIV/AIDS Victims of Domestic Violence Unaccompanied Youth Elderly Frail Elderly Persons with Mental Disabilities Persons with Physical Disabilities Persons with Developmental Disabilities Persons with Alcohol or Other Addictions Persons with HIV/AIDS and their Families Victims of Domestic Violence Non-housing Community Development
	Geographic Areas Affected	Direct Benefit Activities

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	Associated Goals	Creating and Preserving Affordable Housing Support Public Services and Promote Fair Housing Support Public Facilities and Public Improvements Administration
	Description	
	Basis for Relative Priority	Priority based on data analysis in the 2019 Community Needs Assessment and Market Analysis, including survey responses, focus groups, stakeholder interviews and public input.
4	**Priority Need Name**	Improve or Develop Public Facilities
	Priority Level	High
	Population	Extremely Low Low Moderate Large Families Families with Children Elderly Public Housing Residents Chronic Homelessness Individuals Families with Children Mentally Ill Chronic Substance Abuse veterans Persons with HIV/AIDS Victims of Domestic Violence Unaccompanied Youth Elderly Persons with Mental Disabilities Persons with Physical Disabilities Persons with Developmental Disabilities Persons with Alcohol or Other Addictions Persons with HIV/AIDS and their Families
	Geographic Areas Affected	Other
	Associated Goals	Support Public Facilities and Public Improvements Administration
	Description	

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	Basis for Relative Priority	
5	**Priority Need Name**	Neighborhood Revitalization
	Priority Level	High
	Population	Extremely Low Low Moderate Large Families Families with Children Elderly Non-housing Community Development
	Geographic Areas Affected	Other
	Associated Goals	Neighborhood Revitalization Administration
	Description	
	Basis for Relative Priority	

Narrative (Optional)

The City of Chandler has elected to utilize the following definitions to assign priority. They are as follows:

- High Priority – City of Chandler plans to use funds made available for activities assigned this priority that address unmet needs during the planning period covered in the FY 2020-2025 Consolidated Plan.
- Low Priority – If funds are available, activities to address unmet needs may be funded by the City of Chandler during the planning period covered in the FY 2020-2025 Consolidated Plan.

The CDBG application process includes annual funding priorities as identified by staff and/or the Housing and Human Services Commission (HHSC). A methodology is adopted annually to determine the highest needs for funding and these high needs are considered in the application process along with additional criteria to insure a competitive process.

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SP-35 Anticipated Resources - 91.420(b), 91.215(a)(4), 91.220(c)(1,2)

Introduction

The City of Chandler receives Community Development Block Grant funding from the United States Department of Housing and Urban Development (HUD) as an 'entitlement community' and is the CDBG lead agency; funds are received based on an annual formula.

The City also receives HUD HOME funding as a member of the Maricopa County HOME Consortium (Consortium). The Consortium is a legal entity created through an intergovernmental agreement between Maricopa County, the Cities of Avondale, Chandler, Glendale, Peoria, Scottsdale, Surprise, Tempe and the Town of Gilbert. Each Consortium member receives a pro rata share of funds and uses them to meet the needs of their community. The County's 5-year Consolidated Plan and Annual Action Plans also include the housing needs and activities of Chandler.

Numerous local resources leverage HUD funding to address the needs of Chandler residents. Local funds are allocated through an annual grant process.

- *Social Services Fund*. Each fiscal year, the City allocates funding to nonprofit agencies that provide supportive public services to Chandler residents with low and moderate income.
- *Acts of Kindness Program*. The Acts of Kindness (AOK) donation program was developed in July 2000 to give residents an opportunity to voluntarily contribute $1 with their utility payment each month. AOK supports public service programs that provide basic needs such as food, shelter, clothing, medical services and transportation to Chandler residents with low and moderate income.
- *Youth Enhancement Program*. The Youth Enhancement Program supports the development and operation of programs for youth activities, scholarships, sports activities, mentoring, intervention and learning programs.
- *Veteran's Transportation*. The Veteran's Transportation Program funds agencies that provide transportation to service centers and other locales for Veterans with low income.

Additional local funds are used to leverage funding by supporting staff and resources within the Neighborhood Resources Department including services to individuals experiencing homelessness.

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Federal funds, including those administered by the State of Arizona such as the Low Income Housing Tax Credit Program and National Housing Trust Fund as well as Public Housing and Section 8 (Housing Choice Voucher) programs are critical resources to leverage CDBG and HOME funds.

The City of Chandler also applies for other state and foundation funding to leverage these local and federal funds.

Anticipated Resources

Program	Source of Funds	Uses of Funds	Expected Amount Available Year 1				Expected Amount Available Remainder of ConPlan $	Narrative Description
			Annual Allocation: $	Program Income: $	Prior Year Resources: $	Total: $		
CDBG	public - federal	Acquisition Admin and Planning Economic Development Housing Public Improvements Public Services	1,443,707	30,000	161,613	1,635,320	5,818,000	Community Development Block Grant (CDBG) funds may be used for a variety of activities that meet the needs of low- and moderate-income residents and communities. Eligible activities are public services, economic development, and capital improvements such as infrastructure, facilities, and housing. Each activity must meet a HUD objective.

Table 14 - Anticipated Resources

Explain how federal funds will leverage those additional resources (private, state and local funds), including a description of how matching requirements will be satisfied

Social Services, Youth Enhancement, Veteran's Transportation and Acts of Kindness Fund leverage federal funds for public services activities. Local bond funds supplement federal funding for capital improvements projects. HOME matching requirements are met on a project by project basis, with all match funds currently retained by Maricopa County.

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If appropriate, describe publically owned land or property located within the state that may be used to address the needs identified in the plan

The City of Chandler owns five public housing sites, 103 scattered site houses and several vacant parcels of land. Over the five years, these assets may be considered for potential development or redevelopment to increase affordable housing opportunities for Chandler residents with low and moderate income.

Discussion

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SP-40 Institutional Delivery Structure - 91.415, 91.215(k)

Explain the institutional structure through which the jurisdiction will carry out its consolidated plan including private industry, non-profit organizations, and public institutions.

Responsible Entity	Responsible Entity Type	Role	Geographic Area Served
City of Chandler	Government	Economic Development Homelessness Non-homeless special needs Ownership Planning Public Housing Rental neighborhood improvements public facilities public services	Jurisdiction

Table 15 - Institutional Delivery Structure

Assess of Strengths and Gaps in the Institutional Delivery System

The strengths of the delivery system are:

- **Chandler is a collaborative, generous, and rapidly changing community**, and the For Our City Chandler initiative has been an integral component in connecting people and organizations to address community needs.
- The Housing and Human Services Commission (HHSC) **is an active commission** that works closely with Community Development and Resources staff, and collectively determine current service levels, assess gaps in service, and develop priorities for funding to ensure resources are targeted to the most needy populations and neighborhoods.
- **The Neighborhood Resources Department** in coordination with the institutional delivery system is efficient and effective in delivering resources to address priority human services needs, including individuals experiencing homelessness and individuals with special needs.
- The City **has enhanced its direct services** to individuals who are experiencing homelessness, its coordination of services with other providers, and launched new strategies to inform the community about the increased need and how to support this vulnerable population.
- The City **continues to focus on developing strong partnerships** with neighborhoods and neighborhood organizations, providing additional opportunities for traditional neighborhoods to develop leadership and to plan for their future in cooperation with the City and integrating community development planning and activities, when appropriate.

The gaps in the delivery system as identified from the 2019 Community Needs Assessment:

- **Housing related issues** and homelessness top the list of needs overall and are especially high priorities for seniors and people experiencing crises.
- In aggregate, **mental health**, suicide, and substance use disorders are mentioned frequently as concerns, especially in relation to vulnerable populations. The stigma associated with these conditions is an emerging issue and is not bounded by socioeconomics.
- While its impact varies depending upon the group, **transportation** issues affect many segments of the community.
- The desire for **additional collaboration**, connection, and communication is widespread.
- **Understanding how to access** community services varies greatly by groups and is largely dependent upon timing, the type of need, and perceptions of safety.
- **Social Isolation** is a common concern mentioned often in relation to both seniors and youth. It is seen as a contributing cause of escalating health, behavioral health, and housing needs.

Availability of services targeted to homeless persons and persons with HIV and mainstream services

Homelessness Prevention Services	Available in the Community	Targeted to Homeless	Targeted to People with HIV
Homelessness Prevention Services			
Counseling/Advocacy	X	X	X
Legal Assistance	X	X	X
Mortgage Assistance			
Rental Assistance	X	X	X
Utilities Assistance	X	X	X
Street Outreach Services			
Law Enforcement	X		
Mobile Clinics	X	X	
Other Street Outreach Services	X	X	X
Supportive Services			
Alcohol & Drug Abuse	X	X	X
Child Care	X	X	X
Education	X	X	X
Employment and Employment Training	X	X	X
Healthcare	X	X	X
HIV/AIDS	X	X	X
Life Skills	X	X	X
Mental Health Counseling	X	X	X

Supportive Services			
Transportation	X	X	X
Other			

Table 16 - Homeless Prevention Services Summary

Describe how the service delivery system including, but not limited to, the services listed above meet the needs of homeless persons (particularly chronically homeless individuals and families, families with children, veterans and their families, and unaccompanied youth)

The City of Chandler uses CDBG and General Funds to provide direct services and to support a number of nonprofits that serve the Chandler community to reduce and end homelessness through prevention and outreach, addressing emergency shelter and transitional shelter, and addressing permanent housing needs. A broad range of services provided to individuals and families experiencing homelessness include but are not limited to: food assistance, case management, community navigation and outreach, medical support, counseling, transportation, crisis intervention and stabilization, substance abuse treatment, and domestic violence services, etc. The City of Chandler supports the I-HELP program operated by AZCEND that provides emergency shelter, dinner and a shower to individuals experiencing homelessness. Families experiencing homelessness are referred to local family shelters. The City also utilizes General Funds to provide motel/hotel stays, as available. Facilities, services and strategies designed to address homelessness at a regional level are often categorized into three component parts (emergency, transitional, or permanent), each oriented to serving specific client needs. Individual clients may need all or some of available services, depending on their unique characteristics.

Describe the strengths and gaps of the service delivery system for special needs population and persons experiencing homelessness, including, but not limited to, the services listed above

Nonprofit organizations, the primary providers of services for individuals experiencing homelessness, and those with special needs, are regularly consulted, and provide information through their participation in the Maricopa Regional Continuum of Care process. Continuing coordination and consultation occurs on an as needed basis concerning agencies serving the supportive housing and social services needs of persons who are infected with HIV.

The number of older adults in the City of Chandler also contributes to the demand for services for persons with special needs. Low-income senior households are particularly vulnerable. Seniors in Chandler report needing: affordable housing; assistance with home care; resource navigation; and transportation.

The Arizona Department of Health Services is the primary provider of services to individuals who are low and moderate income with alcohol and other drug addictions. Reductions in mental health services have created gaps in services and care.

The Arizona Department of Health Services is the primary provider of services to persons with severe mental illness. Reductions in mental health services have created gaps in services and care across the state. Additional supportive housing is needed for this segment of the population. For persons with severe mental illness who are also experiencing homeless, Community Bridges provides intervention services including transportation to behavioral health facilities and detox centers.

Provide a summary of the strategy for overcoming gaps in the institutional structure and service delivery system for carrying out a strategy to address priority needs

The system is challenged by the high cost of permanent housing and insufficient supportive housing for special populations. The City of Chandler receives HOME funds through the Maricopa County HOME Consortium and has provided funding support for such programs as: tenant-based rental assistance, affordable rental housing, and permanent affordable first-time homeownership through Newtown's Community Land Trust. The Housing and Redevelopment division is also exploring other options to expand the affordable housing options for Chandler residents.

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SP-45 Goals - 91.415, 91.215(a)(4)

Goals Summary Information

Sort Order	Goal Name	Start Year	End Year	Category	Geographic Area	Needs Addressed	Funding	Goal Outcome Indicator
1	Creating and Preserving Affordable Housing	2020	2025	Affordable Housing Public Housing	Citywide	Affordable Rental Housing Public Services and Fair Housing	CDBG: $1,000,000	Other: Relocation Assistance 250 Household Housing Unit
2	Maintain Owner-Occupied Housing	2020	2025	Affordable Housing	Citywide	Affordable Owner-Occupied Housing	CDBG: $2,421,711	Homeowner Housing Rehabilitated: 179 Household Housing Unit
3	Support Public Services and Promote Fair Housing	2020	2025	Homeless Non-Housing Community Development	Citywide	Public Services and Fair Housing	CDBG: $1,420,718	Public service activities other than Low/Moderate Income Housing Benefit: 2,490 Persons Assisted Homelessness Prevention: 252 Persons Assisted
4	Support Public Facilities and Public Improvements	2020	2025	Non-Housing Community Development	CDBG Eligible Areas	Public Services and Fair Housing Improve or Develop Public Facilities	CDBG: $400,000	Public Facility or Infrastructure Activities other than Low/Moderate Income Housing Benefit: 3200 Persons Assisted Public Facility or Infrastructure Activities for Low/Moderate Income Housing Benefit: 50 Households Assisted

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Sort Order	Goal Name	Start Year	End Year	Category	Geographic Area	Needs Addressed	Funding	Goal Outcome Indicator
5	Neighborhood Revitalization	2020	2025	Non-Housing Community Development	CDBG Eligible Areas	Neighborhood Revitalization	CDBG: $766,326	Housing Code Enforcement/Foreclosed Property Care: 55000 Household Housing Unit
6	Administration	2020	2025	Administration	Citywide	Affordable Rental Housing Affordable Owner-Occupied Housing Public Services and Fair Housing Improve or Develop Public Facilities Neighborhood Revitalization	CDBG: $1,444,565	Other: 1 Other

Table 17 – Goals Summary

Goal Descriptions

1	**Goal Name**	Creating and Preserving Affordable Housing
	Goal Description	Acquisition and rehabilitation of housing units to expand affordable housing options for households with low and moderate income.

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2	**Goal Name**	Maintain Owner-Occupied Housing
	Goal Description	Support housing rehabilitation programs for Chandler homeowners. Improve neighborhood conditions and living conditions for homeowners with low and moderate income through emergency repairs, minor repairs, ADA modifications and exterior improvements to housing units.
3	**Goal Name**	Support Public Services and Promote Fair Housing
	Goal Description	Provide needed public services within the City of Chandler to persons with predominately low and moderate income using CDBG funds not to exceed the 15% annual expenditure limit, unless a waiver is provided by HUD due to emergency situations such as COVID-19 pandemic. Clients assisted may include persons who are experiencing homelessness, at-risk of homelessness, or have special needs.
4	**Goal Name**	Support Public Facilities and Public Improvements
	Goal Description	Provide support to public facilities that assist clients who may include persons who are experiencing homelessness, at-risk of homelessness, or have special needs. Provide support for public improvements and infrastructure support within the City of Chandler.
5	**Goal Name**	Neighborhood Revitalization
	Goal Description	Improve living conditions and foster neighborhood preservation through targeted code enforcement activities in CDBG-eligible areas, and provide referrals for assistance to households with low and moderate income.
6	**Goal Name**	Administration
	Goal Description	Administer funds in accordance with program requirements. Fair housing activities.

Estimate the number of extremely low-income, low-income, and moderate-income families to whom the jurisdiction will provide affordable housing as defined by HOME 91.315(b)(2)

This information is included in the Maricopa County HOME Consortium Five-Year Consolidated Plan.

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SP-65 Lead-based Paint Hazards - 91.415, 91.215(i)

Actions to address LBP hazards and increase access to housing without LBP hazards

To reduce the risk of lead poisoning, information will be distributed to participants in City housing programs. The City will follow strict HUD guidelines for testing and abatement of lead-based paint and other hazardous substances, and require compliance from its contractors and subcontractors. Any structure built before 1978 that is proposed for rehabilitation under federal programs, will be tested for lead-based paint. Notices and requirements regarding testing and removal of lead-based paint will be provided to program participants, contractors and project sponsors.

How are the actions listed above integrated into housing policies and procedures?

In addition, the City follows a multi-pronged approach to reduce lead hazards:

1. Rehabilitation Projects. The City follows strict HUD guidelines for testing and abatement of lead-based paint and other hazardous substances, and requires compliance from its contractors and subcontractors. Any structure built before 1978 that is proposed for rehabilitation under federal programs, is tested for lead-based paint. Notices and requirements regarding testing and removal of lead-based paint are provided to program participants, contractors and project sponsors. The City's service provider has licensed contractors who are available to perform appropriate abatement and/or removal procedures if lead-based paint is present.

2. Section 8 Housing Choice Vouchers. The PHA inspects prospective dwellings constructed prior to 1978 that will have a child under the age of six residing therein, for compliance with EPA and HUD Lead Based Paint rules and regulations. The inspection includes visual inspections for chipped, peeling, chalking and deteriorated interior and exterior paint. Clearance testing may be performed after remediation by the property owner, to assure a lead-safe environment.

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SP-70 Anti-Poverty Strategy - 91.415, 91.215(j)

Jurisdiction Goals, Programs and Policies for reducing the number of Poverty-Level Families

As Chandler continues to see an increase in median income, the wealth disparity continues to grow making the City of Chandler and its partners work harder to ensure a succinct anti-poverty strategy. The City of Chandler works collaboratively across departments and nonprofits to reduce the incidence of poverty and help individuals to become self-sufficient, reducing the return to poverty over time.

The City of Chandler recognizes that to alleviate future crises, we need to stabilize individuals and create a holistic approach. Working with Housing, Community Development, Economic Development, and nonprofit partners, the City funds services that support affordable and safe housing, case management, employment including job training and employment preparation, education opportunities, transportation, child care, budgeting and financial assistance and steps to homeownership. The goal is to move individuals from individualized case management to self-sufficiency through services and stability.

How are the Jurisdiction poverty reducing goals, programs, and policies coordinated with this affordable housing plan

Anti-poverty strategies work hand in hand with multiple housing activities, including providing services to individuals and families receiving tenant based rental assistance, living in public housing, taking steps toward homeownership and current homeowners who are low or moderate income. Repairs and improvements to housing units keep residents safe and enable them to continue to reside in their homes or rental units. In addition, these anti-poverty strategies work with Chandler's plan to increase affordable housing, keeping residents integrated in the place they call home.

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SP-80 Monitoring - 91.230

Describe the standards and procedures that the jurisdiction will use to monitor activities carried out in furtherance of the plan and will use to ensure long-term compliance with requirements of the programs involved, including minority business outreach and the comprehensive planning requirements

Program monitoring for CDBG regulatory compliance is critical to the success of the program and will occur on a continual basis throughout FY 2020-2024. Monitoring begins with the application process with agencies being required to submit information on fiscal and program capability, non-profit status, disability accessibility, compliance with federal regulations, and conflict of interest statement. In addition, the application requires grantees to include a performance measurement strategy to demonstrate that proposed services will enhance the lives of City residents, including client demographics, projections of the number of individuals and households that will be served, and annual unit-of-service projections. Information is confirmed through a technical review by staff to ensure applicants are able to meet CDBG regulations and are fiscally sound.

Prior to contracting, all subgrantees are required to attend a pre-contract training which includes an explanation of program laws, regulations and requirements, and City monitoring standards and procedures. The City makes sure that all activities meet environmental, affordability, Davis-Bacon and Section 3 requirements when necessary.

Upon completing pre-contract training, written agreements are entered into with both City and non-City agencies. Written agreements include measurable objectives, monthly reporting requirements, reimbursement processes, CDBG requirements applicable, and insurance requirements.

During the year, the City performs ongoing monitoring including fiscal audits, desk audits, agency risk assessments, and formal site visits. Grantees provide monthly reports that quantify the number of clients/households served and units of service to demonstrate progress toward their goals and objectives as well as a narrative describing the work being done. The monthly reports allow the City to continuously monitor and evaluate progress and provide technical assistance to mitigate any unforeseen barriers or challenges. In addition, City staff review reports and source documents for accuracy, cost allowability and reasonableness prior to reimbursement.

In addition to a monthly review of Progress Reports and Invoices, risk assessments are completed based on the desk audits utilizing a Program Performance Monitoring Checklist. After completing the risk assessment and identifying areas for review, staff coordinates site visits with the subgrantees. At the site visits, staff conducts an entrance discussion with key agency staff. Following review, City staff conducts exit conferences to discuss preliminary findings and concerns and later prepares and delivers formal monitoring letters. The City then follows up to ensure that corrective actions are addressed.

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Expected Resources

AP-15 Expected Resources - 91.420(b), 91.220(c)(1,2)

Introduction

The City of Chandler receives Community Development Block Grant funding from the United States Department of Housing and Urban Development (HUD) as an 'entitlement community' and is the CDBG lead agency; funds are received based on an annual formula.

The City also receives HUD HOME funding as a member of the Maricopa County HOME Consortium (Consortium). The Consortium is a legal entity created through an intergovernmental agreement between Maricopa County, the Cities of Avondale, Chandler, Glendale, Peoria, Scottsdale, Surprise, Tempe and the Town of Gilbert. Each Consortium member receives a pro rata share of funds and uses them to meet the needs of their community. The County's 5-year Consolidated Plan and Annual Action Plans also include the housing needs and activities of Chandler.

Numerous local resources leverage HUD funding to address the needs of Chandler residents. Local funds are allocated through an annual grant process.

- *Social Services Fund*. Each fiscal year, the City allocates funding to nonprofit agencies that provide supportive public services to Chandler residents with low and moderate income.
- *Acts of Kindness Program*. The Acts of Kindness (AOK) donation program was developed in July 2000 to give residents an opportunity to voluntarily contribute $1 with their utility payment each month. AOK supports public service programs that provide basic needs such as food, shelter, clothing, medical services and transportation to Chandler residents with low and moderate income.
- *Youth Enhancement Program*. The Youth Enhancement Program supports the development and operation of programs for youth activities, scholarships, sports activities, mentoring, intervention and learning programs.
- *Veteran's Transportation*. The Veteran's Transportation Program funds agencies that provide transportation to service centers and other

locales for Veterans with low income.

Additional local funds are used to leverage funding by supporting staff and resources within the Neighborhood Resources Department including services to individuals experiencing homelessness.

Federal funds, including those administered by the State of Arizona such as the Low Income Housing Tax Credit Program and National Housing Trust Fund as well as Public Housing and Section 8 (Housing Choice Voucher) programs are critical resources to leverage CDBG and HOME funds.

The City of Chandler also applies for other state and foundation funding to leverage these local and federal funds.

Anticipated Resources

Program	Source of Funds	Uses of Funds	Expected Amount Available Year 1				Expected Amount Available Remainder of ConPlan $	Narrative Description
			Annual Allocation: $	Program Income: $	Prior Year Resources: $	Total: $		
CDBG	public - federal	Acquisition Admin and Planning Economic Development Housing Public Improvements Public Services	1,443,707	30,000	161,613	1,635,320	5,818,000	Community Development Block Grant (CDBG) funds may be used for a variety of activities that meet the needs of low- and moderate-income residents and communities. Eligible activities are public services, economic development, and capital improvements such as infrastructure, facilities, and housing. Each activity must meet a HUD objective.

Table 18 - Expected Resources – Priority Table

Explain how federal funds will leverage those additional resources (private, state and local funds), including a description of how matching requirements will be satisfied

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Social Services, Youth Enhancement, Veteran's Transportation and Acts of Kindness Fund leverage federal funds for public services activities. Local bond funds supplement federal funding for capital improvements projects. HOME matching requirements are met on a project by project basis, with all match funds currently retained by Maricopa County.

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If appropriate, describe publically owned land or property located within the jurisdiction that may be used to address the needs identified in the plan

The City of Chandler owns five public housing sites, 103 scattered site houses and several vacant parcels of land. Over the five years, these assets may be considered for potential development or redevelopment to increase affordable housing opportunities for Chandler residents with low and moderate income.

Discussion

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Annual Goals and Objectives

AP-20 Annual Goals and Objectives - 91.420, 91.220(c)(3)&(e)

Goals Summary Information

Sort Order	Goal Name	Start Year	End Year	Category	Geographic Area	Needs Addressed	Funding	Goal Outcome Indicator
3	Support Public Services and Promote Fair Housing	2020	2025	Homeless Non-Housing Community Development	Citywide	Public Services and Fair Housing	CDBG: $558,718	Public service activities other than Low/Moderate Income Housing Benefit: 687 Persons Assisted Homelessness Prevention: 252 Persons Assisted
5	Neighborhood Revitalization	2020	2025	Non-Housing Community Development	CDBG Eligible Areas	Neighborhood Revitalization	CDBG: $166,326	Housing Code Enforcement/Foreclosed Property Care: 12000 Household Housing Unit
7	Maintain Owner-Occupied Housing	2020	2025	Affordable Housing	Citywide	Affordable Owner-Occupied Housing	CDBG: $621,711	Homeowner Housing Rehabilitated: 45 Household Housing Unit

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Sort Order	Goal Name	Start Year	End Year	Category	Geographic Area	Needs Addressed	Funding	Goal Outcome Indicator
8	Administration	2020	2025	Administration	Citywide CDBG Eligible Areas	Affordable Rental Housing Affordable Owner-Occupied Housing Public Services and Fair Housing Improve or Develop Public Facilities Neighborhood Revitalization	CDBG: $288,565	Other: 1 Other

Table 19 – Goals Summary

Goal Descriptions

3	**Goal Name**	Support Public Services and Promote Fair Housing
	Goal Description	Provide needed public services within the City of Chandler to persons with predominately low and moderate income using CDBG funds not to exceed the 15% annual expenditure limit, unless a waiver is provided by HUD due to emergency situations such as COVID-19 pandemic. Clients assisted may include persons experiencing homelessness, at-risk of homelessness, or have special needs.
5	**Goal Name**	Neighborhood Revitalization
	Goal Description	Improve living conditions and foster neighborhood preservation through targeted code enforcement activities in CDBG-eligible areas, and provide referrals for assistance to households with low and moderate income.

7	**Goal Name**	Maintain Owner-Occupied Housing
	Goal Description	Support housing rehabilitation programs for Chandler homeowners. Improve neighborhood conditions and living conditions for homeowners with low and moderate income through emergency repairs, minor repairs, ADA modifications and exterior improvements to housing units.
8	**Goal Name**	Administration
	Goal Description	Administer funds in accordance with program requirements.

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AP-35 Projects - 91.420, 91.220(d)

Introduction

The following projects will be funded using CDBG funds in the 2020 Annual Action Plan. The City of Chandler's planned HOME activities are included in Maricopa County's Annual Action Plan. Section 8, Public Housing Capital Funds and General Funds are not included in these projects and will be dedicated to non-CDBG funded activities.

#	Project Name
1	Rent and Utility Assistance
2	Client Services
3	Fair Housing Training
4	Public Housing Youth Program
5	Case Coordination and Homeless Housing
6	Code Enforcement - Low-Mod Neighborhoods
9	Homeowner Rehabilitation
10	CDBG Administration

Table 20 – Project Information

Describe the reasons for allocation priorities and any obstacles to addressing underserved needs

The City annually issues an RFP to distribute funding to nonprofit and City departments that may utilize CDBG funds to address priority needs. The City requires grantees to include a performance measurement strategy in funding proposals to demonstrate that proposed services will enhance the lives of City residents and meet identified needs. The strategy quantifies long- and short-term goals, activities, outputs and outcomes. It includes client demographics, projections of the number of individuals and households that will be served, and annual unit-of-service projections. The primary obstacle to addressing underserved needs is insufficient funding and limitations of funding sources. In addition, many nonprofit agencies serve multiple jurisdictions in the region and few are dedicated solely to providing services in Chandler.

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AP-38 Project Summary

Project Summary Information

1	**Project Name**	Rent and Utility Assistance
	Target Area	Citywide
	Goals Supported	Support Public Services and Promote Fair Housing
	Needs Addressed	Public Services and Fair Housing
	Funding	CDBG: $294,491
	Description	Rent and utility assistance for Chandler residents with low and moderate income.
	Target Date	6/30/2021
	Estimate the number and type of families that will benefit from the proposed activities	84 Low/Moderate Households (252 Persons)
	Location Description	Citywide
	Planned Activities	Provide rent and utility assistance to households with low and moderate income facing eviction or hardship as a result of COVID-19.
2	**Project Name**	Client Services
	Target Area	Citywide
	Goals Supported	Support Public Services and Promote Fair Housing
	Needs Addressed	Public Services and Fair Housing
	Funding	CDBG: $153,727

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	Description	Client services for Chandler residents experiencing homelessness, housing insecurity, or crisis intervention.
	Target Date	6/30/2021
	Estimate the number and type of families that will benefit from the proposed activities	290 Low/Moderate Clientele
	Location Description	Citywide
	Planned Activities	Provide direct, intensive client services to individuals experiencing homelessness in Chandler. Funding will support one Client Services Specialist and one Community Navigator who will locate and establish relationships with persons who are chronically homeless and medically vulnerable; coordinate care and communications with appropriate service providers; facilitate access to housing; and provide support and advocacy necessary to help them stay housed.
3	**Project Name**	Fair Housing Training
	Target Area	Citywide
	Goals Supported	Support Public Services and Promote Fair Housing
	Needs Addressed	Public Services and Fair Housing
	Funding	CDBG: $7,500
	Description	Conduct fair housing activities to affirmatively further fair housing and promote free housing choice in the City of Chandler. Fair housing activities are essential in order to provide the community and housing providers with knowledge of their fair housing rights and responsibilities.
	Target Date	6/30/2021
	Estimate the number and type of families that will benefit from the proposed activities	100 Low/Moderate Clientele
	Location Description	Citywide

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	Planned Activities	Conduct fair housing activities to affirmatively further fair housing and promote free housing choice in the City of Chandler. Activities include training, counseling, and referral services to provide information on fair housing rights and on the availability of housing in a wide variety of locations. Fair housing trainings are conducted in person at community gatherings, partner agency locations, and community centers. In addition, the worldwide web, social media, and print and promotional materials are used.
4	**Project Name**	Public Housing Youth Program
	Target Area	Citywide
	Goals Supported	Support Public Services and Promote Fair Housing
	Needs Addressed	Public Services and Fair Housing
	Funding	CDBG: $78,000
	Description	Activities are offered after school and during school breaks and include community sports and other specialized events. The after-school program is held at four Public Housing family sites and offers homework assistance, arts and crafts, and indoor/outdoor recreation on regular school days.
	Target Date	6/30/2021
	Estimate the number and type of families that will benefit from the proposed activities	280 Low/Moderate clientele
	Location Description	Citywide
	Planned Activities	Provide after school and intersession programming to youth, ages 6-18, who reside in Chandler's four Public Housing family sites. Activities include academic support; mentoring; youth development; arts; books and reading services; and sports and recreation. Programming is offered Monday through Friday on regular school days at each public housing site. During intercession, youth from all four sites come together to participate in regular programming and special events. In the summer months, activities are offered in the morning for younger children, in the afternoon for all ages, and in the evening for teens.
	Project Name	Case Coordination and Homeless Housing

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5	**Target Area**	Citywide
	Goals Supported	Support Public Services and Promote Fair Housing
	Needs Addressed	Public Services and Fair Housing
	Funding	CDBG: $25,000
	Description	Case management and supportive services for homeless families.
	Target Date	6/30/2021
	Estimate the number and type of families that will benefit from the proposed activities	5 Low/Moderate Households (17 individuals)
	Location Description	Citywide
	Planned Activities	Assist Chandler families experiencing homelessness in obtaining and maintaining permanent housing through long-term shelter, rapid rehousing, and case coordination. Save the Family is unique in its provision of a scattered-site long-term shelter model, which allows families to stay integrated in their community near their natural support systems while they are in transition to permanency. Scattered-site shelter is provided in the cities of Mesa and Tempe. Scattered-site rapid rehousing services are provided throughout Maricopa County, but primarily in the East Valley cities of Chandler, Mesa, Tempe, Scottsdale, and Gilbert.
6	**Project Name**	Code Enforcement - Low-Mod Neighborhoods
	Target Area	CDBG Eligible Areas
	Goals Supported	Neighborhood Revitalization
	Needs Addressed	Neighborhood Revitalization
	Funding	CDBG: $166,326
	Description	Improve and revitalize neighborhoods and housing conditions through continued inspections and code enforcement in CDBG eligible areas.

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	Target Date	6/30/2021
	Estimate the number and type of families that will benefit from the proposed activities	12,000 households; 1,000 violations
	Location Description	CDBG eligible areas
	Planned Activities	Continue the systemic, proactive inspection program in CDBG eligible areas, with an emphasis on north Chandler. The program supports 1.5 full-time Code Inspectors and a .3 full-time Neighborhood Preservation Technician specifically assigned to initiate code enforcement inspections and take necessary enforcement actions to remediate neighborhood degradation. Residents receive an advisory notice providing information about common code violations for self-evaluation and correction prior to inspection.
7	**Project Name**	Homeowner Rehabilitation
	Target Area	Citywide
	Goals Supported	Maintain Owner-Occupied Housing
	Needs Addressed	Affordable Owner-Occupied Housing
	Funding	CDBG: $621,711
	Description	Owner-Occupied, Single Family Housing Rehabilitation Program
	Target Date	6/30/2021
	Estimate the number and type of families that will benefit from the proposed activities	45 low/moderate households; (45 individuals)
	Location Description	Citywide
	Planned Activities	Assist and provide services to single-family, Chandler homeowners with low and moderate income, who have significant housing rehabilitation needs.

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8	**Project Name**	CDBG Administration
	Target Area	Citywide CDBG Eligible Areas
	Goals Supported	Administration
	Needs Addressed	Affordable Rental Housing Affordable Owner-Occupied Housing Public Services and Fair Housing Improve or Develop Public Facilities Neighborhood Revitalization
	Funding	CDBG: $288,565
	Description	Administration of CDBG Activities
	Target Date	6/30/2021
	Estimate the number and type of families that will benefit from the proposed activities	
	Location Description	Citywide
	Planned Activities	Administration of CDBG Activities

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AP-50 Geographic Distribution - 91.420, 91.220(f)

Description of the geographic areas of the entitlement (including areas of low-income and minority concentration) where assistance will be directed

The City of Chandler consists of approximately 65 square miles and shares boundaries with the Town of Gilbert, Cities of Mesa, Phoenix, and Tempe, and the Gila River Indian Community. Chandler has reached its physical geographical limits, with the exception of a few remaining County islands. Downtown Chandler and several neighborhoods in zip codes 85224 and 85225 are long-established and have higher concentrations of low and moderate income and minority households. There are 11 Census Block Groups where at least 51% of the population is low and moderate income, and another 26 where at least 36.68% of the population is low and moderate income; these are Community Development Block Grant-eligible areas.

Pursuant to the specific projects identified in AP-35, the commitment of CDBG funding will be based primarily on low and moderate income requirements of clients assisted, special needs and those experiencing homelessness. Capital projects and code enforcement provide area benefit and are targeted in CDBG-eligible areas.

Geographic Distribution

Target Area	Percentage of Funds
Citywide	90

Table 21 - Geographic Distribution

Rationale for the priorities for allocating investments geographically

Resources will be committed pursuant to input received from citizens, stakeholders and providers during the development of the 2019 Community Needs Assessment. Public services are allocated throughout the City based on an individual's income eligibility. Rehabilitation services are also provided based on client eligibility, of which income is one of the criteria. City or public facility improvements or expansion projects, and code enforcement are examples of CDBG-funded activities that are targeted to CDBG-eligible areas.

Discussion

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AP-85 Other Actions - 91.420, 91.220(k)

Introduction

The City will continue prior city policies/programs and enhance the programs as needed. Although no major obstacles have been faced, the growing wealth disparity will continue to push Chandler to find new partnerships and better ways to work together.

Actions planned to address obstacles to meeting underserved needs

The primary obstacles to meeting underserved needs are insufficient funding and rigid regulations. The City allocates both general funds and federal funds, both limited in funding, to nonprofits and City departments to serve the most vulnerable residents in the community. The City works to serve short-term needs while implementing long-term strategies to help the individual or family achieve self-sufficiency. The City works across the continuum from families and individuals in emergency situations working to achieve shelter and food to families and individuals struggling to make a repair on their home. Throughout the continuum, the goal is to achieve stability and reduce the incidence of poverty in the future. The City will continue to seek other funding sources with flexible regulations to meet the needs of the community as the funding is available.

Actions planned to foster and maintain affordable housing

The City is constantly looking for ways to maintain affordable housing and expand the inventory as the housing market continues to tighten. The City of Chandler utilizes a combination of CDBG and HOME funding to address and expand affordable housing. The City offers the Emergency Home Repair program and Home Modification program to assist Chandler homeowners who are low and moderate income with emergency repairs, ADA repairs, and exterior improvements that would not be fixed otherwise. These programs keep homeowners in a safe, affordable home that often they have lived in for years. Finally, the City of Chandler looks to create and preserve affordable housing through the use of CDBG funds in the coming five years.

Actions planned to reduce lead-based paint hazards

To reduce the risk of lead poisoning, information is distributed to participants in City housing programs. The City follows strict HUD guidelines for testing and abatement of lead-based paint and other hazardous substances, and requires compliance from its contractors and subcontractors. Any structure built before 1978 that is proposed for rehabilitation under federal programs, is tested for lead-based paint. Notices and requirements regarding testing and removal of lead-based paint are provided to program participants, contractors and project sponsors.

The City will continue to utilize HOME funding to address affordable renting and affordable homeownership within Chandler depending on each individual's needs. Through nonprofit partnerships, the City works hand in hand to offer activities that provide fair housing information, housing counseling

and education to residents seeking affordable first time housing. Through the City's funding of Newtown Community Land Trust, there are over 60 residents who are now first time homebuyers in Chandler. In addition to Newtown, the City funds a Tenant Based Rental Assistance Program for individuals experiencing homelessness in Chandler who work to reach long-term stability while in the program working with case management. Finally, the City operates a robust affordable rental housing program. The City's Housing and Redevelopment Division manages 486 Section 8 Housing Choice Vouchers, as well as 303 public housing units.

Actions planned to reduce the number of poverty-level families

The City of Chandler will continue to work collaboratively with nonprofits, the Continuum of Care, and other cities in the valley to address poverty collectively. The City will continue to fund agencies that will alleviate the effects of crisis for individuals who are low and moderate income especially those experiencing homelessness, by providing basic services such as food, clothing, necessary medical care, job training and employment supports, as well as case management services, and also providing short and long-term housing solutions such as shelter, tenant based rental assistance, and rapid rehousing.

Actions planned to develop institutional structure

The City will continue to participate in the regional Continuum of Care including workgroups and sitting on the Continuum of Care Board, working collaboratively with the East Valley City Managers and assisting with For Our City - Chandler. In addition, the City will continue to develop public/private partnerships to address housing, finance and community development efforts.

Actions planned to enhance coordination between public and private housing and social service agencies

Chandler will continue to work with For Our City to coordinate resources to Chandler's most vulnerable residents. For Our City is a network of faith-based organizations, nonprofits, service organizations, businesses, and the City of Chandler working together in unity and compassion to help the residents of Chandler. Using the For Our City network, Chandler can connect nonprofits, volunteers, and vulnerable individuals together to serve the most effectively.

Discussion

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Program Specific Requirements

AP-90 Program Specific Requirements - 91.420, 91.220(l)(1,2,4)

Introduction

The following provides details on program specific requirements for the Community Development Block Grant.

Community Development Block Grant Program (CDBG)
Reference 24 CFR 91.220(l)(1)

Projects planned with all CDBG funds expected to be available during the year are identified in the Projects Table. The following identifies program income that is available for use that is included in projects to be carried out.

1. The total amount of program income that will have been received before the start of the next program year and that has not yet been reprogrammed	30,000
2. The amount of proceeds from section 108 loan guarantees that will be used during the year to address the priority needs and specific objectives identified in the grantee's strategic plan.	0
3. The amount of surplus funds from urban renewal settlements	0
4. The amount of any grant funds returned to the line of credit for which the planned use has not been included in a prior statement or plan	161,613
5. The amount of income from float-funded activities	0
Total Program Income:	**191,613**

Other CDBG Requirements

1. The amount of urgent need activities	0
2. The estimated percentage of CDBG funds that will be used for activities that benefit persons of low and moderate income.Overall Benefit - A consecutive period of one, two or three years may be used to determine that a minimum overall benefit of 70% of CDBG funds is used to benefit persons of low and moderate income. Specify the years covered that include this Annual Action Plan.	85.00%

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Discussion

A period of three (3) years will be used to determine that a minimum overall benefit of 70% of CDBG funds is used to benefit persons with low and moderate income.

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Appendix - Alternate/Local Data Sources

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ITEM 22

CHANDLER arizona
Community of Innovation

City Council Memorandum **Police Memo No.** 2021-019

Date: April 19, 2021
To: Mayor and Council
Thru: Joshua H. Wright, Acting City Manager
Sean Duggan, Police Chief
From: Cathie Gura, Police Planning & Research Analyst
Subject: Resolution No. 5454 Authorizing an Intergovernmental Agreement between the City of Chandler and Maricopa County for Animal Care and Control Services

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Proposed Motion:

Move City Council adopt Resolution No. 5454 authorizing an Intergovernmental Agreement (IGA) with Maricopa County, through Maricopa County Animal Care and Control, for animal control services, in an amount not to exceed $221,431, for the period of July 1, 2021, through June 30, 2022; authorizing the Mayor to sign the Agreement; authorizing the City Manager or Designee to sign, administer, execute, and submit all documents and other necessary instruments in connection with such Agreement

Background/Discussion:

Maricopa County Animal Care and Control (MCACC) wishes to enter a new one-year IGA with the City for animal control services. The City wishes to have MCACC continue to act as the City's enforcement agent and to provide animal control services as outlined in Chapter 14 of the City Code. The current IGA between the City and MCACC expires on June 30, 2021. The proposed IGA authorizes a one-year agreement, with the option of two additional one-year extensions.

Financial Implications:

For Fiscal year 2021-22, the animal control service cost is $221,431. The cost of services for any future extensions will be determined prior to entering the agreement. Funds are available in the General Fund, Non-Departmental Cost Center, Animal Care and Control Services Account (101.1290.5266).

Attachments

Intergovernmental Agreement FY2021-22 - Maricopa County Animal Control
Resolution No. 5454

INTERGOVERNMENTALAGREEMENT
ANIMAL CONTROL SERVICES

BETWEEN

Maricopa County
Administered by its Animal Care & Control Department

and

The City of Chandler

THIS INTERGOVERNMENTAL AGREEMENT ("IGA" or "Agreement") for Animal Control Services is entered by and between Maricopa County, a political subdivision of the State of Arizona, administered by its Animal Care & Control Department ("MCACC") (collectively referred to as "COUNTY"), and the **City of Chandler** ("CITY"), a municipal corporation of the State of Arizona. The COUNTY and CITY are collectively referred to as "Parties" and individually as "Party." In consideration of the following, the Parties agree as follows:

1.0 PURPOSE: The purpose of this Agreement is to memorialize the Parties' rights and responsibilities regarding the COUNTY'S provision of Animal Control Services to the CITY. The CITY needs Animal Control Services and desires to enter into this Agreement with the COUNTY to appoint the COUNTY as the statutory Enforcement Agent for the CITY to administer Animal Control Services, as defined in this Agreement.

2.0 AUTHORITY

2.1 Arizona Revised Statutes ("A.R.S.") § 11-952 and 11-1013 authorize the COUNTY and CITY, as public agencies, to enter IGAs for joint cooperative action, which includes animal control services;

2.2 A.R.S. § 11-251(47) authorizes the COUNTY to make and enforce ordinances for the protection and disposition of Domestic Animals subject to inhumane, unhealthful, or dangerous conditions or circumstances;

2.3 A.R.S. § 11-1005(A)(3) and COUNTY Ordinance No. P-13, Rabies/Animal Control ("COUNTY Ordinance No. P-13") authorize the Board of Supervisors to contract with the CITY to enforce the provisions of any CITY ordinance enacted for the control of dogs if the provisions are not specific to breed;

2.4 A.R.S. § 11-201(A) authorizes the Board of Supervisors ("BOS") to act on behalf of the COUNTY;

2.5 Pursuant to A.R.S. § 11-1005 (A)(1), the BOS has designated MCACC as the "COUNTY enforcement agent" to perform animal control services. A.R.S. § 11-1007 authorizes the COUNTY enforcement agent to carry out its duties; and,

2.6 The CITY has authority to enter into this IGA pursuant to Article I, Section 1.03 of the Charter for the City of Chandler, and Article XIII of the Arizona State Constitution.

3.0 TERM: This Agreement is effective on July 1, 2021 ("Effective Date") and terminates on June 30, 2022 (collectively, "Term").

4.0 RENEWAL: The Parties may renew this Agreement up to two successive one-year terms, but each extension may not exceed the duration of the Term ("Renewal").

5.0 AMENDMENTS: Nothing in this Agreement may be modified or waived except by prior written amendment, duly executed by authorized signers for Parties. The Parties may renew or amend this Agreement upon the mutual written agreement signed by authorized signers for the Parties.

6.0 DEFINITIONS

6.1 The Definitions at A.R.S. § 11-1001 and CITY of Chandler Code, § Chapter 14-15 are hereby incorporated into this Agreement and shall be capitalized when used in this Agreement. In the event the COUNTY and CITY definitions conflict, the COUNTY definitions shall control. Additionally, the following terms are used in this Agreement.

6.2 **Aggressive Dog:** Any dog that has bitten a person or domestic animal without provocation or that has a known history of attacking persons or domestic animals without provocation.

6.3 **Animal:** Refers to dogs but may also include cats that have bitten a human.

6.4 **Animal At-Large:** A dog that is not contained by an enclosure or physically restrained by a leash.

6.5 **Animal Control Ordinance:** Laws set forth by A.R.S. Title 11, ordinances adopted by Maricopa County for unincorporated Maricopa County, and ordinances adopted by CITYs and Cities contracted with MCACC to provide Animal Control Services.

6.6 **Animal Control Services:** Services provided by MCACC that have been contracted and approved by the CITY or City and Maricopa County. Animal Control Services includes the following services performed within the response periods prescribed in Appendix B:

6.6.1 control or impound of Animals (dogs) At-Large;

6.6.2 enforcement of licensing and rabies vaccination laws and ordinances; and

6.6.3 rabies surveillance and impound of Animals who have bitten a human.

6.7 **Bite Animal At-Large:** An Animal that has bitten a human.

6.8 **Confined Stray:** Any dog which has been found roaming at large and the primary finder has taken into their private home or business for the purpose of confinement at the County Pound.

6.9 **County Observed Holidays:** Holidays identified in Appendix D.

6.10 **Domestic Animal:** As defined at A.R.S. § 11-251 (47), an animal kept as a pet and not primarily for economic purposes.

6.11 **Enforcement Agent:** As defined at A.R.S. § 11-1001 (4), the person in each County who is responsible for the enforcement of the animal control statutes and any rules adopted pursuant to those statutes.

6.12 **Limited Operation Hours:** Refers to the hours of 5 p.m. to 10 p.m. seven (7) days a week except County Observed Holidays. Restricted access available to police and fire needing assistance with Priority 1 activities. Not intended for general public access. Communication police line is direct service dispatcher to dispatcher.

6.13 **Normal Hours of Operation:** Refers to the hours of 8 a.m. to 5 p.m. seven days a week except County Observed Holidays.

6.14 **Owner:** As defined in A.R.S. § 11-1001(10), any person keeping an animal other than livestock for more than six consecutive days.

6.15 **Priority 1 Dispatch:** Request for service from the police or fire departments or calls from the public involving a Bite Animal At-Large, or a known owner Bite Animal that has been secured by the owner or police and that poses a danger to the owner or other person in the home.

6.16 **Priority 2 Dispatch:** Request for service involving an Animal At-Large on school property while school is in session, Aggressive Dog(s), or if the dog is reported to have any type of injury or sickness Stray Dogs in imminent harm. May include lower level calls for service that require immediate attention based on the situation.

6.17 **Priority 3 Dispatch:** Request for service to impound stray dogs confined by the primary finder, at a private home or business. Bite cases, which have not just occurred, to investigate and/or advise quarantine.

6.18 **Priority 4 Dispatch:** Request for service to enforce license or leash laws. The location of the dog and dog owner is known, and a violation witnessed and reported for investigation of leash law.

6.19 **Primary Finder:** Citizen who has personally located and confined a stray dog and has taken the dog into their private home or business for purposes of confinement at the COUNTY Pound.

6.20 **Response Time:** The time within which the COUNTY will respond to a call for service which varies based on the time of the call and the priority assigned to the call.

6.21 **Stray Dog**: Means any dog three months of age or older running at-large that is not wearing a valid license tag.

6.22 **Sick or Injured:** A stray dog which has been reported to have some type of injury or suffering from some type of illness. This can include but is not limited to hit by a car, limping, suffering from heat related issues.

6.23 **Third Party:** A person or group, not under contract with the County or other municipality, that receives from the primary finder, traps, picks up, and/or confines for any period of time, Animals from another. For example, veterinarians and citizen groups who receive Animals from others are Third Parties under this Agreement. Businesses contracted by government jurisdictions to provide Animal Control Services are not Third Parties under this Agreement.

7.0 COUNTY RESPONSIBILITIES

The COUNTY agrees to:

7.1 Provide Animal Control Services to the CITY, as defined and further prescribed in Appendix B.

7.2 Submit invoices quarterly for Animal Control Services provided.

7.3 If the CITY changes its Ordinance, the COUNTY may at its option, decline to enforce the changes to the ordinance or enter a written amendment adding enforcement of such changes, which may include modification of service and additional payment terms.

8.0 CITY RESPONSIBILITIES

The CITY agrees to:

8.1 Pay the COUNTY for Animal Control Services performed under this Agreement in accordance with Appendix A of this Agreement. The CITY will submit payment to COUNTY within thirty (30) days of receiving an invoice.

8.2 Notify the COUNTY of CITY ordinance changes no later than 90 days prior to the effective date of the change.

9.0 RECORDS

9.1 At minimum, the Parties shall keep the following records under this Agreement ("Records"):

- 9.1.1 Intake counts.
- 9.1.2 Electronic impound records.
- 9.1.3 Documentation of CITY attempts to return Animal to owner.
- 9.1.4 All documentation related to dog licenses.
- 9.1.5 All documentation related to rabies.
- 9.1.6 All documentation related to Immigration; E-Verify, Section 20
- 9.1.7 Any other books, accounts, reports, files, or other documents related to this Agreement required under law.

9.2 The CITY will have access to COUNTY dog licensing data through a web portal, calls to the animal control facility, and by email.

9.3 The Parties shall retain records in accordance with their applicable retention rules and policies. The COUNTY shall retain records in accordance with the COUNTY Records Management policy, A2101. The CITY shall retain records in accordance with the CITY Records Management Administrative Regulation, CC-01.

9.4 The Parties waive the public records procedure for obtaining Records, including when using the web portal, phone calls, or emails for licensing data.

9.5 The Parties shall have full access to, and the right to examine, copy, and make use of, all Records relevant to this Agreement no later than ten (10) business days from the date of request.

9.6 The Parties acknowledge some Records may be protected from disclosure under Arizona law. The Parties shall consult with counsel prior to disclosing.

10.0 REPORTING: The COUNTY shall provide the CITY with quarterly routine statistical and/or management reports which provide the following information: the number of calls, the date and time the call was received, incident address or area, descriptor (stray/dangerous), and disposition of the call concerning the services provided pursuant to this Agreement.

11.0 FINANCING: The CITY will pay for the impounding and quarantining activities under this Agreement pursuant to the fees and costs schedules in Appendices A and B to this Agreement.

12.0 NON-APPROPRIATION: Notwithstanding any other provision in this Agreement, every payment obligation of the CITY under this Agreement is conditioned upon the availability of funds appropriated and allocated for the payment of such obligation. If funds are not appropriated, allocated and available or if the appropriation is changed by the appropriating body resulting in funds no longer being available for the continuance of this Agreement, this Agreement may be terminated by the COUNTY at the end of the period for which funds are available. No liability shall accrue to the CITY or COUNTY in the event this provision is exercised, and neither Party shall be obligated or liable for any future payments or for any damages due to termination under this paragraph.

13.0 AUDITS

13.1 Each Party may audit and inspect the other Party's work to verify compliance with this Agreement.

13.2 All Records shall be subject at all reasonable times to inspection and audit by either Party for five years after completion of the Agreement.

13.3 The owner of the Records shall produce the requested Records in accordance with this Agreement.

13.4 Each Party, prior to conducting an audit, must give sixty (60) calendar days' notice to the other Party. Notice shall be given as provided in section 14.0.

14.0 NOTICE: Whenever written notice is required or permitted under this Agreement, such notice shall be deemed to have been sufficiently given if personally delivered or deposited in the United States mail in a properly stamped envelope – certified or registered mail, return receipt requested – or electronically mailed, addressed to:

COUNTY
Maricopa COUNTY Animal Care & Control
Shelter and Field Operations
c/o Dr. Robyn Jaynes, Director
2500 S 27th Avenue
Phoenix, AZ 85009
Robyn.Jaynes@maricopa.gov
(602) 506-2766

CITY
CITY of Chandler Police Department
Candace Hammond, Planning &
Research Manager
PO Box 4008, MS 303M
Chandler, AZ 85255-4008
Candace.hammond@chandleraz.gov
(480) 782-4087

cc:
Maricopa COUNTY Animal Care & Control
c/o Lisa Esquivel, Deputy Director
2500 S. 27th Avenue
Phoenix, AZ 85009
Lisa.Esquivel@Maricopa.Gov
(602) 506-5100

15.0 TERMINATION

15.1 Any Party may terminate this Agreement at any time without cause by giving ninety (90) days' written notice in compliance with the Notice requirements of this Agreement in section 14. The County may terminate the Agreement immediately upon discovery that the life, health, or safety of an animal or person is in jeopardy because of the actions or inaction of the City. The failure of the City to provide requested information on a bite incident, attack incident, and/or stray hold constitute[s] the jeopardy of life, health, and safety of an animal and person and is grounds for immediate termination.

15.2 Pursuant to the provisions of A.R.S. § 38-511, either Party may cancel this Agreement without penalty or obligation, if any person significantly involved in the initiating, negotiating, securing, drafting, or creating this Agreement on behalf of the terminating Party is at any time while the Agreement or any extension thereof is in effect an employee of the other party to the Agreement in any capacity with respect to the subject matter of this Agreement.

15.3 In the event of non-payment by CITY, this Agreement shall terminate as of the date of last payment received and COUNTY obligations hereunder shall immediately cease.

15.4 Upon termination of this Agreement, all property involved will revert to the owner. Termination will not relieve any Party from liabilities or costs already incurred under this Agreement, nor affect any ownership pursuant to this Agreement. Any Eligible Animals still in the custody of the COUNTY at the termination of this Agreement will become the property of the CITY at the end of the hold period established by statute and will be governed by this Agreement.

16.0 INDEPENDENT CONTRACTOR: The CITY is an independent contractor, including the CITY's employees, agents, and subcontractors. Nothing in this Agreement will be construed to create any partnership, joint venture, or employment relationship between the Parties or create any employer-employee relationship between a Party and the employees of the other Party. Neither Party will be liable for any debts, accounts, obligations, or other liabilities whatsoever of the other.

17.0 SUBCONTRACTING: The CITY shall not subcontract or assign any responsibility or portion of this Agreement to a subcontractor without the prior, express, written consent of the COUNTY. The COUNTY reserves the right to reject a subcontractor if the COUNTY determines the subcontractor fails to comply with any term of this Agreement or if the COUNTY determines the subcontractor does not pass a background check or fails any other criteria related to the health or safety of Animals and employees.

18.0 ASSIGNMENT: This Agreement shall not be assigned, in whole or in part, without the prior written consent of the Parties, and any assignment in contravention of this provision shall be null and void.

19.0 NONDISRCIMINATION: The Parties agree to comply with all applicable state and federal laws, rules, regulations and executive orders governing equal employment opportunity, immigration, nondiscrimination, including the Americans with Disabilities Act, and affirmative action.

20.0 IMMIGRATION; E-VERIFY: To the extent applicable under A.R.S. § 41-4401, the Parties warrant compliance, on behalf of themselves and all subcontractors, with all federal immigration laws and regulations relating to their employees, and, compliance with the E-Verify requirements under A.R.S. § 23-214(A). Any Party's breach of the above-mentioned warranty shall be deemed a material breach of this Agreement and the non-breaching Party may terminate this Agreement. The Parties retain the legal right to inspect

the papers of any other Party to ensure that the Party is complying with the above-mentioned warranty under this Agreement.

21.0 INDEMNIFICATION: To the fullest extent permitted under Arizona law, each Party and its agents (as "Indemnitor") agrees to indemnify, defend, and hold harmless the other Party and its agents (as "Indemnitee") from and against any and all claims, actions, liabilities, damages, losses, costs, or expenses (including but not limited to court costs, attorneys' fees, claim processing) (collectively, "Claims") arising out of bodily or personal injury (including death) of any person or tangible or intangible property damage, in whole or in part, by the negligent or willful acts or omissions of Indemnitor. This indemnity includes any claim or amount arising out of or recovered under the Workers' Compensation law. It is the specific intention of the Parties that the Indemnitee shall, in all instances, except for Claims arising solely from the negligent or willful acts or omissions of the Indemnitee, be indemnified by the Indemnitor against all Claims. Nothing in this Agreement shall be construed as consent to any suit or waiver of any defense in a suit brought against the COUNTY or the CITY in any State or Federal Court arising from the negligent or willful acts or omissions of the Parties.

22.0 DISPUTE RESOLUTION: In the event a dispute under this Agreement arises between the Parties, the Parties will follow this process:

22.1 The Parties will meet and confer in person about the issue. The Parties will make their best efforts to reach a resolution at this meeting.

22.2 If the Parties are unable to resolve the conflict after the in-person meeting, within ten (10) business days after the meeting, the Party raising the issue shall prepare a written conflict report and deliver to the other/receiving Party for a response. The conflict report shall include, at minimum, a section summarizing relevant background, an issue statement, and a proposed solution. The receiving Party shall prepare and deliver a written response within ten (10) business days from the date of receipt of the conflict report.

22.3 If the Parties cannot resolve the issue after assessing the conflict report and response, the Parties shall once again meet and confer in person to discuss the conflict report and response and try to resolve the issue. The Parties shall make their best efforts to reach a resolution at this meeting.

22.4 If the Parties are still unable to reach a resolution, the Parties may seek resolution through mediation/arbitration. The Parties may provide the conflict report and response to the arbitrator to aid in resolution. The Parties shall select a mutually acceptable third-party as arbitrator. Each party shall bear its own arbitration fees, attorneys' fees, and costs.

23.0 PARTIAL PERFORMANCE: The failure of either Party to insist in any one or more instances upon the full and complete performance of any of the terms of this Agreement

shall not be construed as a waiver or relinquishment of the right to insist upon full and complete performance of the same, or any other term, either in the past or in the future.

24.0 FORCE MAJEURE: Neither Party shall be responsible for delays or failures in performance resulting exclusively from unanticipated, unpreventable, uncontrollable, exceptional, and overwhelming events or acts. This includes acts or events of nature, such as fires, pandemics, floods, hurricanes, monsoons, tornadoes, or communication line or power failures; and, acts or events of people, such as riots, wars, and governmental regulations imposed after the fact.

25.0 INSURANCE: The Parties agree to secure and maintain sufficient insurance coverage for all risks that may arise out of the terms, obligations, operations, and actions as set forth in this Agreement, including but not limited to public entity insurance. The acquisition of insurance or the maintenance and operation of a self-insurance program may fulfill the insurance requirement.

26.0 APPLICABLE LAW: Each Party shall comply with all applicable laws, ordinances, Executive Orders, rules, regulations, standards, and codes of the Federal and State whether or not specifically referenced herein.

27.0 VENUE; CHOICE OF LAW

27.1 The proper venue for any proceeding arising from this Agreement shall be Maricopa COUNTY, Arizona. This Agreement shall be construed in accordance with and be governed by the laws of the State of Arizona.

27.2 This Agreement and all obligations imposed on the Parties arising under this Agreement shall be subject to any limitations of budget law or other applicable local law or regulations. No term in this Agreement shall be construed to relieve the Parties of any obligations or responsibilities imposed on Parties by law. This Agreement shall be construed in accordance with the laws of the State of Arizona.

28.0 HEADINGS: Sections and other headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement.

29.0 ENTIRE AGREEMENT: This Agreement contains all the terms and conditions agreed to by the Parties. No other understanding, oral or otherwise, regarding the subject matter of this Agreement shall be deemed to exist or to bind any of the Parties hereto.

IN WITNESS WHEREOF, the undersigned represent and warrant that he/she is duly authorized to execute and deliver this Agreement on behalf of each Party and that this Agreement is binding on said Party in accordance with its terms. The Parties enter into this Agreement as of the Effective Date, as defined in Section 3.0 of this Agreement (Term):

MARICOPA COUNTY	**CITY OF CHANDLER**
By:	By:
Jack Sellers, Chairman Maricopa County Board of Supervisors	Kevin Hartke, Mayor City of Chandler
Date	Date
Attest:	*Attest:*
Juanita Garza, Clerk of the Board	Dana DeLong, City of Chandler Clerk
Date	Date

Approved as to Form:
Undersigned counsel has reviewed the foregoing Agreement pursuant to A.R.S. § 11-952 (D) and has determined it is in proper form and within the powers and authority granted under the laws of this state to the COUNTY and CITY.

Talia Offord, Senior Deputy County Attorney Attorney for Maricopa County	Kelly Schwab, City Attorney Attorney for CITY of Chandler
Date	Date

APPENDIX A

COMPENSATION SCHEDULE FOR ANIMAL CONTROL SERVICES

1.	COUNTY Service Level:	Animal Control Services
2.	Service Cost for Initial Term:	$221,431

For the initial term of this Agreement, the CITY agrees to pay the COUNTY $221,431. Thereafter, the CITY shall pay the COUNTY those fees approved by the Maricopa County Board of Supervisors in accordance with a formula developed by the Department, which require full recovery of the COUNTY's direct and indirect costs. See Appendix A.

APPENDIX B

SERVICES

1. The COUNTY, as the appointed Enforcement Agent, shall be responsible for and enforce the Animal Control Ordinance for the CITY. *See* Appendix E.

2. Minimum Staffing: Staffing will be sufficient to respond to ninety percent (90%) of service requests within the period prescribed below

3. Response Times: The COUNTY will respond during Normal Hours of Operation. COUNTY staff will arrive at the scene of a reported service request within the time prescribed below based on the service classification:

Priority 1	1 hour
Priority 2	2 hours
Priority 3	48 hours
Priority 4	72 hours

**See Appendix C for call for service types by priority.

4. Response Time during Limited Operations Hours: The COUNTY will only act on Priority 1 and 2 calls for service during Limited Operation Hours and only when the requesting police agency agrees to remain on scene for the duration of the time needed to handle the call for service. The COUNTY will not respond to priority 3 or 4 calls for service after 3pm until the commencement of the next Normal Hours of Operation. The response time for Limited Operations Hours will be two (2) hours maximum. The response time could be longer should a higher priority call for service be received. The choice to respond to higher priority calls is at the discretion of the COUNTY.

5. The COUNTY shall not respond to scenes involving owned animals being seized or impounded as a part of a police function related to neglect, abuse, abandonment, arrests, crime scene investigations, fire scenes, or any situation where the law enforcement officer has seized an owned animal. The COUNTY will not respond to citizen response requests for abuse, neglect, or cruelty of animals.

6. On request of law enforcement, the COUNTY shall respond to scenes or situations involving owned bite animals seized or impounded by a law enforcement officer or confined by the bite animal owner. The COUNTY shall impound the animal at the request of law enforcement or the bite animal owner.

7. Law enforcement agencies needing assistance in accordance with this IGA can call the COUNTY Field Dispatch non-public phone line (602-506-1309) to request general assistance during Normal Hours of Operation and after 5pm for Priority 1 or 2 calls. The decision to respond is based on the information provided to staff at the time of the request. The COUNTY reserves the

right to respond to non-emergency requests at the beginning of the next Normal Hours of Operation.

8. While the COUNTY is closed for business on all COUNTY Observed Holidays, the COUNTY reserves the right to provide limited response times from 7am to 10 pm on COUNTY observed holidays. The police only line will be staffed for Priority 1 calls for service from 7am to 10pm on COUNTY Holidays.

9. The COUNTY shall provide lost and found service from 8am to 5pm seven (7) days per week to allow for citizens to report found and lost dogs at (602) 372-4598. This service will not be provided during the holiday coverage prescribed in Paragraph 7.

10. The COUNTY shall provide call center services during Normal Hours of Operation and 24-hour online services for citizens to report animal control issues, conduct licensing transactions, and ask general animal control questions. Call center services will not be provided during the holidays prescribed in Paragraph 7.

11. The COUNTY at its discretion may pick up dogs from Third Parties.

APPENDIX C

PRIORITY CLASSIFICATIONS

Maricopa County Animal Care & Control

Service Contract Priority List

Service hours 8a.m. – 5 p.m Normal Hours of Operation

5p.m. – 10p.m. Limited Hours of Operation and County Holidays

Priority 1 1 hour or less	Priority 2 2 hours	Priority 3 48 hours	Priority 4 72 hours	Priority O – Other by appointment		
Officer needs assistance: police/fire/animal control officer. Officer on scene	Menacing animal at large imminent safety hazard.	On duty municipal employees, not LEO	Area check no aggression.	Vicious animal petition	Maricopa County Constables or Public Fiduciary	
Animal bite running at large / imminent safety hazard within last hour.	Animal in trap	Trap check/Trap Pick up	Leash Law	Court appearance or delivery	Kennel permit inspections.	
Animal at large on school grounds. (school in session) does not include colleges ° ° ° ° °	Sick or injured stray	Confined stray dog at business or home.	Third Party Pick-ups	.	Canvassing	
Attack which has taken place in the last hour, dog still at large and possess immediate threat.	Officer needs assistance: police/fire/animal control officer. Officer not on scene	Attack older than 3 hours. Animal bite investigations follow up second sequence		Barking dog	Public Information Booth	
	Attack within the last 3 hours dog still at large.	Dog confined on school grounds.		Kennel Permit		
	Animal bite investigation	Will show		Admin duties		

APPENDIX D
COUNTY OBSERVED HOLIDAYS

New Year's Day
Martin Luther King
Presidents Day
Memorial Day
Labor Day
Veterans Day
Independence Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

APPENDIX E

CITY of Chandler

Powers and Duties of Enforcement Agent 14-18

Failure to License 14-19D

Failure to Wear 14-22B

Dogs not permitted at large 14-22C and14-22D

Enter upon Private Property 14-22E

Removing Impounded Animals 14-25

Vicious Animals 14-26 and 14-26.1

Handling of biting animals 14-26.4

Unlawful Keeping 14-29

Unlawful Interference 14-30

RESOLUTION NO. 5454

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CHANDLER, ARIZONA AUTHORIZING AND APPROVING AN INTERGOVERNMENTAL AGREEMENT (IGA), BETWEEN THE CITY OF CHANDLER AND MARICOPA COUNTY FOR ANIMAL CARE AND CONTROL SERVICE.

WHEREAS, Maricopa County Animal Care and Control (MCACC) wishes to enter into an IGA with the City of Chandler for the provision of animal control services, and

WHEREAS, the City of Chandler, through its Police Department, wishes to have MCACC provide animal control services for the citizens of Chandler.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Chandler, Arizona, as follows:

Section I. THAT approval is granted for the City of Chandler to have MCACC provide animal control services for the citizens of Chandler.

Section II. THAT the City Manager/Designee is appointed agent for the City of Chandler, to administer, execute and submit all documents and any other necessary instruments in connection with said Agreement. The City Manager/Designee is authorized to approve and execute, on behalf of the City of Chandler, the first and second one-year extensions if the cost does not exceed ten percent of the initial term cost.

PASSED AND ADOPTED by the City Council of the City of Chandler, Arizona, this _____ day of _____, 2021.

ATTEST:

_____ _____

CITY CLERK MAYOR

CERTIFICATION

I HEREBY CERTIFY that the above and foregoing Resolution No. 5454 was duly passed and adopted by the City Council of Chandler, Arizona, at a regular meeting held on the _____ day of _____ 2021.

_____

CITY CLERK

APPROVED AS TO FORM:

CITY ATTORNEY

CHANDLER arizona
Community of Innovation

City Council Memorandum **Police Memo No.** CP21-121

Date: April 19, 2021
To: Mayor and Council
Thru: Joshua H. Wright, Acting City Manager
Sean Duggan, Police Chief
Andrew Goh, Capital Projects Manager
From: Daniel Haskins, Engineer
Subject: Project Agreement No. PD1901.401 with Caliente Construction, Inc., Pursuant to Job Order Contract No. JOC1910.401, for the Police Station Main Lobby and Records Renovations, in an amount not to exceed $1,321,730.47

Proposed Motion:

Move City Council award Project Agreement No. PD1901.401 to Caliente Construction, Inc., Pursuant to Job Order Contract No. JOC1910.401, for the Police Station Main Lobby and Records Renovations, in an amount not to exceed $1,321,730.47.

Background/Discussion:

The 2014 Police Department Facilities Master Plan identified the Police Station Main Lobby and Records Renovation as a project needed to maximize the efficiency and usage of existing structures. The records section of the main police station is open 24 hours a day to receive public inquiries with a staff of 24 full-time employees. They maintain record storage for the entire department. The workspace for employees is small and has been encroached upon by records storage needs. There is inadequate storage space for daily records and long-term storage. This project will expand the records section into a portion of the Prosecutor's Office area to provide additional work and storage space.

The project scope of work consists of renovating the Police Records and City Prosecutor's areas. The work will be coordinated with Police staff to maintain the front entrance as much as possible, as well as maintain current levels of security.

The contract completion time is 180 calendar days following Notice to Proceed.

A related Professional Services Agreement with Kitchell CEM, for Police Station Main Lobby and Records Renovations, is also scheduled for this City Council meeting.

Evaluation:

The selection process was conducted in accordance with City policy and procedure and State law. The costs proposed for this project have been evaluated by staff and determined to be reasonable.

Fiscal Impact

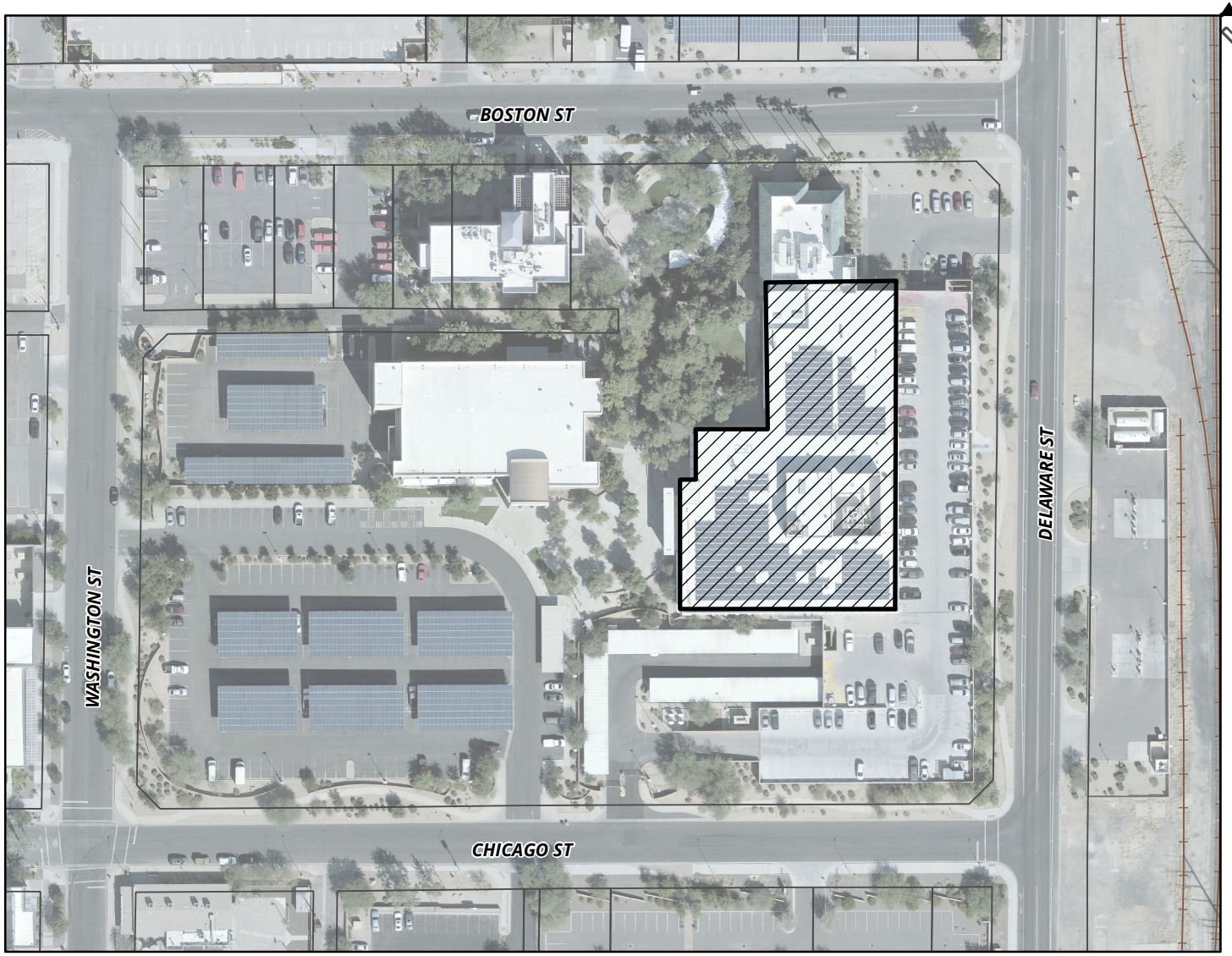
Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
401.2100.6210.6PD650	General Government Capital Projects	Police Main Station Lobby	$1,321,730.47	Y

Attachments

Location Map
Agreement - Caliente Construction

POLICE STATION MAIN LOBBY AND RECORDS ROOM RENOVATION (CONSTRUCTION) PROJECT NO. PD1901.401





MEMO NO. CP21-121

PROJECT SITE

NTS

ChanGIS

F:\ENGINEER\GENSERV_ArcMap_Shared\Map Requests\Capital Projects\CP21-121 POLICE STATION MAIN LOBBY AND RECORDS ROOM RENOVATION\CP21-121.mxd 3/15/2021 MARICELAH

CHANDLER arizona
Community of Innovation

CITY OF CHANDLER
JOB ORDER PROJECT AGREEMENT

Project Name: **POLICE STATION MAIN LOBBY AND RECORDS RENOVATIONS**

Project No. **PD1901.401**

This JOB ORDER PROJECT AGREEMENT ("Job Order") is made this _____ day of _____ 2021 ("Effective Date"), by and between the City of Chandler, an Arizona municipal corporation, ("City") and **Caliente Construction, Inc.**, an Arizona corporation, ("JOC Contractor") and is entered into pursuant to Job Order Master Agreement No. JOC1910.401 ("JOC Master Agreement"). City and JOC Contractor may be referred to individually as "Party" or collectively as "Parties").

City and JOC Contractor, in consideration of the mutual covenants herein set forth, agree as follows:

RECITALS

A. On or about December 17, 2019, the Parties entered into the JOC Master Agreement, which terms and conditions are made a part of and incorporated into this Job Order Project Agreement by this reference.

B. City proposes to engage JOC Contractor to renovate the Police Station Main Lobby and Records area as more fully described in **Exhibit "A"**, which is attached to and made a part of this Job Order by this reference.

C. JOC Contractor is ready, willing, and able to provide the services described in **Exhibit "A"** for the compensation and fees set forth and as described in **Exhibit "B"**, which is attached to and made a part of this Agreement by this reference.

ARTICLE 1. DESCRIPTION OF WORK

The Parties enter into this Job Order Project Agreement for the **POLICE STATION MAIN LOBBY AND RECORDS RENOVATIONS**, Project Number **PD1901.401**. The scope of work consists of renovating the Police Station Main Lobby and Records area, all as more particularly set forth in **Exhibit "A"** attached hereto and incorporated herein by reference.

The JOC Contractor will not accept any change of scope, or change in contract provisions, unless issued in writing, as a contract amendment or change order and signed by the authorized signatories for each party.

Performance and Payment Bonds, as set forth in **Exhibit "C"** and **Exhibit "D"** respectively attached hereto and incorporated herein by reference, will be due prior to execution of each Job Order Project Agreement in the full amount of each Job Order.

At project completion, JOC Contractor must complete Contractor's Affidavit Regarding Settlement of Claims and Certificate of Completion, as set forth in **Exhibit "E"** and **Exhibit "F"** respectively attached hereto and incorporated herein by reference.

ARTICLE 2. PROJECT PRICE

City will pay JOC Contractor for completion of the Work in accordance with the JOC Master Agreement a fee not to exceed the Guaranteed Maximum Price of **$1,321,730.47** Dollars determined and payable as set forth in JOC Master Agreement and **Exhibit "B"** attached hereto and made a part hereof by reference.

ARTICLE 3. CONTRACT TIME & SCHEDULE

JOC Contractor agrees to complete all Construction within **180** calendar days from the Notice to Proceed (NTP) Date.

ARTICLE 4. PARTICIPANTS

CITY:	Construction Project Manager: Paul Ahlas	
	Phone:	480-782-3328
	Email:	Paul.ahlas@chandleraz.gov
JOC CONTRACTOR:	Caliente Construction, Inc.	
	485 W. Vaughn St. Tempe, AZ 85283	
	JOC Contractor Representative: Lorraine Bergman	
	Phone:	480-894-5500
	Email:	lbergman@calienteconstruction.com

SIGNATURE PAGE TO FOLLOW

IN WITNESS WHEREOF, the Parties have executed this Job Order as of the Effective Date.

"CITY"
CITY OF CHANDLER:

MAYOR Date

Recommended By:

Andrew Goh, P.E.
CIP City Engineer

APPROVED AS TO FORM:

City Attorney
By:

ATTEST:

City Clerk SEAL

ADDRESS FOR NOTICE
City of Chandler
P.O. Box 4008, Mail Stop 407
Chandler, AZ 85244-4008

"JOC CONTRACTOR"
Caliente Construction, Inc.:

Signature 4/5/2021
Date

Lorraine Bergman
Print Name

President/CEO
Title

ATTEST: If Corporation

Dana Bergman
Secretary

ADDRESS FOR NOTICE

Caliente Construction, Inc.
485 W. Vaughn St.
Tempe, AZ 85283

EXHIBIT A
SCOPE OF WORK

Caliente Construction Inc.

General Construction - Construction Management - Design/Build - Facilities Management

March 31, 2021

Dan Haskins, PE
Project Manager
Public Works and Utilities Dept.
City of Chandler
215 East Buffalo Street
Chandler, AZ 85225

RE: City of Chandler JOC (1910.401) – PD1901.401 – Police Station Main Lobby and Records Renovations Proposal (REV1)

Dear Dan,

Thank you for providing review comments from the City and from Arrington Watkins. Based on those comments received 03/26/21 and our conference call on 03/30/21, we are providing the attached revised proposal for the City of Chandler JOC (1910.401) – PD1901.401 – Police Station Main Lobby and Records Renovations Project.

We have based the attached proposal on Permit Approved Design Documents provided by Arrington Watkins Architects that have a date on the cover sheet of 10/23/20. The set includes sheets within with a Delta 1 revision date of 12/16/20. Our proposal is also inclusive of supplemental information received from COC and Site Visits held.

The revised price is **$1,321,730.47**. See attached estimate with bid tabulations and subcontractor back-up for further details.

Please contact me at your convenience should you have any questions.

Best Regards,

J. Miller

Justin Miller
Caliente Construction Inc.

EXHIBIT A
SCOPE-OF WORK

PROJECT:
City of Chandler JOC (1910.401) – PD1901.401 – Police Station Main Lobby and Records Renovations

General Requirements:

1) Provide office support, supervision, overhead/profit, taxes based on TPT (Chandler 5.070%), insurances, and bond.
2) Provide temporary protection and dust protection for interior work.
3) Dumpster/dump trailer and dump fees.
4) Provide Off-Duty Police Officer for Prosecutor Area (See Allowance).
5) Provide Temp Fencing for Lay-Down Area.
6) Provide Final Cleaning of Work Area.

Construction:

1) Renovation and Remodel of the Existing Lobby per the design documents.
2) Renovation of Existing Space for New Public RRs per the design documents.
3) Renovation and Remodel of existing Records Area per the design documents.
4) Modification and Renovation of existing Prosecutor's Area for new Conference Room per design documents.
5) Cleanup Site.

** See attached **REV1 dated 03-31-21** spreadsheets for scope specific details **

Project Duration:

1) Project duration is (21) Weeks / (147) Calendar Days with on-site construction starting after all materials are procured.

Clarifications/Exclusions:

1) See attached estimate spreadsheets.

Alternates and Allowances:

1) See attached estimate spreadsheets.

EXHIBIT B
FEE SCHEDULE

Caliente Construction Inc.

General Construction - Construction Management - Design/Build - Facilities Management

EXHIBIT "B"

COC JOC 1910.401 PD1901.401 Police Station Main Lobby and Records Renovations

JOB ORDER COST PROPOSAL
SUMMARY SHEET

03/31/21 REV1

Negotiated Prices				
	Price of Subcontractor(s)		$	578,673.86
	Price of Subconsultant(s)		$	-
	General Conditions		$	136,510.00
	Preconstruction Labor (if applicable)		$	-
	Construction Labor (if applicable)		$	-
	SUBTOTAL (NEGOTIATED PRICES):		**$**	**715,183.86**
Overhead and Profit (Coefficient per Job Order Master Agreement)		**8.00%**	**$**	**57,214.71**
	TOTAL (NEGOTIATED PRICES + OVERHEAD & PROFIT):		**$**	**772,398.57**
Insurance, Bonds, & Taxes				
	Sales Tax Percentage (Current Tax Rate) ***TPT***	**5.070%**	$	63,778.18
	General Liability Insurance Percentage (Actual Cost per Job Order)	**1.00%**	$	7,151.84
	Builder's Risk Insurance Percentage (Actual Cost per Job Order)	**0.50%**	$	3,575.92
	Payment Bond (Actual Cost per Job Order)	**1.50%**	$	19,825.96
	Performance Bond (Actual Cost per Job Order) ***INC***	**0.00%**	$	-
	SUBTOTAL (INSURANCE, BONDS, & TAXES):		**$**	**94,331.90**
	COMBINED TOTAL (TOTAL + INSURANCE, BONDS, & TAXES):		**$**	**866,730.47**
City's Allowance			**$**	**455,000.00**
	TOTAL JOB ORDER:		**$**	**1,321,730.47**

Per the Job Order Master Agreement - This Fee Table includes all fees, costs, insurance and bond premiums, allowances, construction contingency, and taxes of any type necessary to fully, propertly and timely perform and construct the Work. Also per the Job Order Master Agreement - For any portion of the Work which, either through this Contract, Change Order or otherwise, is performed and paid for on a cost, or time and materials basis, the costs may be reimbursed to JOC Contractor and chargeable against the Contract Price will be determined as set forth in MAG 109.5.

Caliente Construction Inc.

General Construction - Construction Management - Design/Build - Facilities Management

Project:	**COC JOC 1910.401 PD1901.401 Police Station Main Lobby and Records Renovations**		3,900	Building Sq. Ft.
Owner:	City of Chandler		0.00	Site Sq. Ft.
Architect:	Arrington Watkins Architects (Drawing Set 10/23/20 w/ Delta 1 12/16/20)		0.00	Site Acres
Bid Date:	JOC Contract No Bid	RFI(s):	00000	100% Drawing Set
Taxing Jurisdiction:	Chandler	Addendum(s):	00000	
MRRA or TPT:	TPT	Drawing Set:	100%	Permit Approved by City Eng 02/08/21

	DESCRIPTION	TOTALS
DIVISION 1	GENERAL CONDITIONS	$ 136,510.00
DIVISION 1	GENERAL REQUIREMENTS	$ 15,626.60
DIVISION 2	EXISTING CONDITIONS	$ 12,700.00
DIVISION 3	CONCRETE	$ -
DIVISION 4	MASONRY	$ -
DIVISION 5	METALS	$ -
DIVISION 6	WOOD, PLASTICS, AND COMPOSITES	$ 44,571.01
DIVISION 7	THERMAL & MOISTURE PROTECTION	$ 2,425.00
DIVISION 8	OPENINGS	$ 97,056.12
DIVISION 9	FINISHES	$ 151,612.40
DIVISION 10	SPECIALTIES	$ 13,195.00
DIVISION 11	EQUIPMENT	$ 7,865.00
DIVISION 12	FURNISHINGS	$ 19,480.60
DIVISION 13	SPECIAL CONSTRUCTION	$ -
DIVISION 14	CONVEYING EQUIPMENT	$ -
DIVISION 21	FIRE SUPPRESSION	$ 11,500.00
DIVISION 22	PLUMBING	$ 31,860.00
DIVISION 23	HEATING, VENTILATING, AND AIR CONDITIONING	$ 65,414.50
DIVISION 26	ELECTRICAL	$ 54,973.00
DIVISION 27	DATA/COMMUNICATIONS	$ 15,650.27
DIVISION 28	FIRE ALARM, ACCESS CONTROL, SECURITY, INTRUSION DETECTION	$ 34,744.36
DIVISION 31	EARTHWORK	$ -
DIVISION 32	EXTERIOR IMPROVEMENTS	$ -
DIVISION 33	UTILITIES	$ -
	Subtotal of Cost Of Work	**$ 715,183.86**
OVERHEAD/PROFIT	8.00%	$ 57,214.71
GENERAL LIABILITY INSURANCE	1.00%	$ 7,151.84
BUILDERS RISK INSURANCE	0.50%	$ 3,575.92
BONDING FEES	1.50%	$ 19,825.96
OWNER GENERAL ALLOWANCE		$ 160,000.00
OWNER CONSTRUCTION ALLOWANCES		$ 295,000.00
TAX (Chandler 5.070%)	5.070%	$ 63,778.18
TOTAL COST		**$ 1,321,730.47**

Caliente Construction Inc.

General Construction - Construction Management - Design/Build - Facilities Management

COC JOC 1910.401 PD1901.401 Police Station Main Lobby and Records Renovations

03/31/21 REV1

Assumptions / Clarifications

1. Proposal based on onsite Project Duration of (21) Weeks after procurement of materials to achieve Substantial Completion.
2. Proposal based on Working Night Hours M-F, 10:00PM - 5:00AM.
3. Proposal based on power for construction to be provided onsite by COC at no cost to Caliente. Project will not require a separate water meter.
4. Proposal based on access to space through parking lot at Chicago and Washington. Dumpsters, Lay-down area to be located in the southeast corner of parking lot as discussed with the COC.
5. An Allowance of 4 weeks for an Off-duty Chandler Police Officer to be onsite for duration of demolition and build-out in Prosecutor's area.
6. Fire Sprinkler, HVAC, Plumbing, Electrical, Special Systems, Fire Alarm based on exsiting systems being in good working condition.
7. List of Allowances based on review comments from the City of Chandler received 03/26/21. This proposal also includes a $160,000 Owner's Allowance as per Bid Form included with Bid Documents (Bid Form is not used due to JOC requirements to use their Exhibit B). See complete Allowance list below.
8. Deck height is assumed to be 14'-0".
9. DEMOLITION: Demolition of areas noted on plans only.
10. CONCRETE: Concrete trenching and pour-back for plumbing and electrical floor box only
11. ROUGH CARPENTRY: Rough carpentry for backing/blocking at upper millwork cabinets, grab bars, diaper changing station, TV brackets - anything that needs to be mounted on walls.
12. MILLWORK: All millwork, countertops as noted on plans included. Scope includes re-skinning the Lobby side only of 7 doors. However, Doors 1141A, 1148C and double doors 1147E are all Hollow Metal and p-lam may not adhere.
13. Chair Rail at East "no work" Hallway and Conference Room 1008 is included as part of the millwork scope - wood chair rail stained to match existing (as close as possible). Chair rail is only figured at the west side of the east hallway. The crash rail noted in Specification Section 102600 is a pre-manufactured item and there is nothing available to match existing profile.
14. INSULATION: New interior walls to receive R-11, including walls with KNs 4, 8 on A-2.3. Plumbing wall between Restrooms 1003 & 1088 will get R-19.
15. DOORS, FRAMES, HARDWARE: Hollow Metal Doors/Frames, Hardware per door schedule on A.5-4. NOTE: Doors 1141A, 1147E (double doors), 1148C are Hollow Metal and shown to be re-skinned in P-lam. P-lam may not adhere properly to hollow metal material and other options might need to be investigated which may be additional costs. Per COC & AWA proposal review comments dated 03/26/21, Hardware Group 06 for Door 1116B and Alternate 1 to replace the doors/frames at Openings 1141A and 1148C with new UL Ballistic rated materials have both been added to the Doors, Frames, Hardware bid tab per COC & AWA proposal review comments dated 03/26/21.
16. GLASS: Ballistic glass/frame system with trays, etc at Window 1116C with Transparent Baffles, Shop Drawings/Engineering. 1/4" tempered glass at 1116A sidelite at Records opening to East Hallway, 1/4" glass for 3 non-ballistic window frames, and re-installation of existing City Prosecutor's transaction window at Lobby wall are included.
17. DRYWALL: All new walls per wall types noted and KNs 4 and 8 on A-2.3 are included. Wall at west side of Lobby where "fingerprint station" is located - this wall to get ballistic board and new drywall. Rest Rooms 1002, 1003, 1088 to get new moisture/mold resistant drywall with a Level 5 finish. All wall infills included, including finishing of back-side of walls to match existing; All new walls, infills to match existing Orange Peel finish.
18. TERRAZZO: New Terrazzo in Restrooms 1003 & 1088 only and at section of Lobby noted on A-2.4. Base in RR's to be Ceramic Tile and base at Lobby to be Rubber per Finish Schedule on A-5.7. No work in existing Restroom 1002. Re-finishing of remaining terrazzo floor in Lobby area only included per COC request during 03/30/21 conference call.
19. FLOORING: As noted on plans and specifications. NOTE: Per conference call with COC on 03/30/21, Owner would like a cove base installed in Restrooms 1088 & 1003. Caliente to reach out to low flooring sub regarding OPTION 1 Cove Base to match CT-1 or OPTION 2 a Dilex Schluter. Once a material is approved, associated costs will be taken from the Owner's Finishes Allowance.
20. ACT: As noted on plans and specifications. NOTE: A bidder offered a $3,685.00 deduct to provide a USG product in lieu of the specified Armstrong tile. Per conference call with COC & AWA on 03/30/21, AWA noted that the tile for the renovated rooms is a special high NRC rated tile and any substitute needs to match specs. Caliente will investigate this more during submittal review and offer a credit if an alternate materials is approved.
21. PAINTING: Painting scope based on painting all new walls and corner to corner where drywall is patched or replaced.
22. SPECIALTIES/TOILET ACCESSORIES: All new Toilet Accessories at new Restrooms 1003 and 1088 only. Toilet Accessories per A-2.6 and Spec Section 102800 (see exclusions below for SN2, GB8, DB3). Specified TV brackets included.
23. WALL PROTECTION PANELS: Replace Wall Protection Panels at East "No Work" Hallway at wall infill side only from Opening C01X to opposite end of hallway (on back side of Break Rm 1100). Includes drywall repairs/replacement/prep as needed after removal of existing in order to install new. Cost is shown on Framing & Drywall bid tab.
24. SIGNAGE: Allowance for new Dimensional Letters at Records and Room Identification Signs and re-install/install.
25. MEGASTAR FILING SYSTEM: Base Bid Scope is to Remove and Dispose of exsiting system.
26. WINDOW TREATMENTS: All windows noted on A-5.5 and including 1116A sidelite not shown on schedules.
27. MODULAR FURNITURE/HD SHELVING: Remove/Relocate work stations in Records Open Office, L-shaped/sit-to-stand desk units in Records Offices, chairs in Records, Heavy Duty Shelving unit in Records Storage to onsite storage. Relocate all items except for (2) L-shaped desk units from onsite storage to renovated Records Open Office/Offices/Storage.
28. FIRE SPRINKLER SYSTEM: Fire suppression modifications to accommodate renovated area using existing main and branch piping, relocating and providing new heads as necessary, permits, engineering/stamped shop drawings, inspections.
29. PLUMBING: New Plumbing as noted on current plans, including new fixtures per schedule; waste/vent, sewer, domestic piping. Ice maker box only. NOTE: The lead-time on the specified Elkay drinking fountains is currently 9-10 weeks. The alternate EDF (see Plumbing Bid Tab) from Murdock has a 2-4 week lead-time and not cost increase/savings.
30. HVAC: New HVAC as noted on current plans, including new ductwork, air distribution
31. ELECTRICAL: New Electrical as noted on current plans, including light fixtures schedule, wiring, floor box, back boxes & raceways provided for special systems, salvage and reinstallation of (10) ceiling fans as noted on Sheet E-3.1 (and also on Sheet A-8.2). Price also includes an additional recessed downlight for existing Restroom 1002, which is shown to be demo'd but not replaced on lighting plan.
32. DATA/TELEPHONE: as shown on E-4.1.
33. ACCESS CONTROL, SECURITY, INTRUSION DETECTION: as shown on E-4.1.
34. FIRE ALARM: Modifications to make renovated area code compliant, permits, engineering, inspections. Existing conduit, panel, etc. will be re-used.

Exclusions	
1	Design Services, Permits and/or Permitting Fees
2	The 5% Construction Allowance was removed per COC Review Comments received 03/26/21.
3	Asbestos Testing and/or Abatement and/or Removal of Hazardous Materials (Current Report/Survey to provided by COC prior to start of Demolition)
4	Costs for Badging or Special Background Checks
5	Special Inspections
6	Fire watch
7	Area construction schedule per Sheet A-2.0
8	SN2 Sanitary Napkin/Tampon Dispenser: In Spec Section 102800 but not on Plans
9	DB-3 Cane Grab Bar at drinking fountain - EDF is in an alcove with permanent walls on both sides
10	GB8 Grab Bar L-shaped: In Spec Section 102800 but not on plans
11	Modification/Updating of and/or Replacement of Door 1116B per Door Schedule A-5.4
12	Provide sidelite at Opening 1088A Restroom 1088
13	Relocation of Display Cases and any items within
14	Removal/Relocation of artwork, computers, monitors, printers/copiers, TVs, all employee personal effects
15	Replacement of wall graphics
16	New Appliances or Re-installing existing appliances
17	New Ice Maker
18	New Fire Sprinkler main and branch piping
19	New Fire Alarm Panel, Conduit
20	A/V system/equipment
21	Relocation or modification of existing cable trays
22	Access Control beyond what is noted on the drawings
23	New modular furniture, heavy duty shelving
24	New City Prosecutor's transaction window
25	Terrazzo flooring/repairs in floor areas not designated to be replaced/installed new on plans, including Terrazzo base
26	No work in existing Restroom 1002 (except for removal/installation of gyp board ceiling and painting of ceiling and new light fixture)
27	No work in existing Interview Room 1001.
28	E-4.1 shows an existing card reader at door to Interview Room 1001. Currently there is no card reader and proposal excludes a new one at this location.
29	New or relocation of existing drug/medical box in Lobby exterior wall.

Allowances (Included in Base Proposal)			
1	Construction Allowance - 5% of Construction Total	$	-
2	Owner Gemeral Allowance (per bid documents)	$	160,000.00
3	Off Duty Chandler Police Officer for Prosecutor's Area - 160hrs @ $57.51/hr	$	15,626.60
4	Building Signage	$	7,000.00
5	Owner Construction Allowance: Wood/Plastics/Composites	$	30,000.00
6	Owner Construction Allowance: Doors, Frames, and Openings	$	15,000.00
7	Owner Construction Allowance: Finishes	$	25,000.00
8	Owner Construction Allowance: Fixed Furnishings, Casework, and systems	$	20,000.00
9	Owner Construction Allowance: Plumbing	$	65,000.00
10	Owner Construction Allowance: HVAC	$	40,000.00
11	Owner Construction Allowance: Electrical, Fire Alarm, Access Control, Security, etc.	$	90,000.00
12	Owner Construction Allowance: Floor Mats, Tempory Walls, Additional Temporary/Dust Protection, Existing Column Protection	$	10,000.00

Alternates (Included in Base Proposal)	
1	Replace Ballistic Doors at Openings 1141A, 1148C - *See Doors, Frames, Hardware Bid*
Tab 2	Remove/Dispose of MegaStar Filing System - *See MegaStar Bid Tab*

COC JOC 1910.401 PD1901.401 Police Station Main Lobby and Records Renovations

			03/31/21 REV1
Alternate No. 1:	**Replace Ballistic Doors at Openings 1141A, 1148C**		
	Replace HM Doors/Frames at Openings 1141A, 1148C **12-14 Lead Time	$	18,200.00
	Hardware Groups 08 and 09 - Included in Base	$	-
	Demo existing door/walls (keep framing)	$	1,000.00
	Install Drywall, Ballistic Guard at 1141A	$	2,000.00
	Paint at One Side of Doors - Included in Base	$	-
	Paint at Wall - Included in Base	$	-
	Subtotal	$	21,200.00
0.00%	Insurance ***Included in Line Item on Caliente's Summary Page***	$	-
0.00%	Builders Risk Insurance ***Included in Line Item on Caliente's Summary Page***	$	-
0.00%	Bonding Fees ***Included in Line Item on Caliente's Summary Page***	$	-
0.00%	Overhead ***Included in Line Item on Caliente's Summary Page***	$	-
0.00%	Tax (Chandler 5.070%) ***Included in Line Item on Caliente's Summary Page***	$	-
Alternate No. 1 Total		**$**	**21,200.00**
Alternate No. 2:	**Remove/Dispose of MegaStar Filing System**		
	Remove/Dispose of MegaStar Filing System	$	(9,193.82)
		$	-
		$	-
		$	-
		$	-
	Subtotal	$	(9,193.82)
0.00%	Insurance ***Included in Line Item on Caliente's Summary Page***	$	-
0.00%	Builders Risk Insurance ***Included in Line Item on Caliente's Summary Page***	$	-
0.00%	Bonding Fees ***Included in Line Item on Caliente's Summary Page*** Overhead	$	-
0.00%	***Included in Line Item on Caliente's Summary Page***	$	-
0.00%	Tax (Chandler 5.070%) ***Included in Line Item on Caliente's Summary Page***	$	-
Alternate No. 2 Total		**$**	**(9,193.82)**

EXHIBIT C

PERFORMANCE BOND

ARIZONA STATUTORY PERFORMANCE BOND
PURSUANT TO TITLES 28, 34, AND 41, ARIZONA REVISED STATUTES
(Penalty of this bond must be 100% of the Contract amount)

KNOW ALL MEN BY THESE PRESENTS THAT:_____
(hereinafter "Principal"), and _____ (hereinafter "Surety"), a corporation organized and existing under the laws of the State of _____ with its principal office in the City of _____, holding a certificate of authority to transact surety business in Arizona issued by the Director of Insurance pursuant to Title 20, Chapter 2, Article 1, as Surety, are held and firmly bound unto _____(hereinafter "Obligee") in the amount of _____ (Dollars) ($_____), for the payment whereof, Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Obligee, dated

the _____ day of _____, 20__ for construction of **POLICE STATION MAIN LOBBY AND RECORDS RENOVATIONS, PD1901.401** which contract is hereby referred to and made a part hereof as fully and to the same extent as if copies at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal faithfully performs and fulfills all the undertakings, covenants, terms, conditions and agreements of the contract during the original term of the contract and any extension of the contract, with or without notice of the Surety, and during the life of any guaranty required under the contract, and also performs and fulfills all the undertakings, covenants, terms, conditions, and agreements of all duly authorized modifications of the contract that may hereafter be made, notice of which modifications to the Surety being hereby waived, the above obligation is void. Otherwise it remains in full force and effect.

PROVIDED, HOWEVER that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, and all liabilities on this bond will be determined in accordance with the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the same extent as if it were copied at length in this Contract.

The prevailing party in a suit on this bond may recover as part of the judgment reasonable attorney fees that may be fixed by a judge of the court.

Witness our hands this _____ day of _____, 20__.

_____
PRINCIPAL SEAL

_____
AGENT OF RECORD

By _____

_____
SURETY SEAL

_____
AGENT ADDRESS

EXHIBIT D

PAYMENT BOND

ARIZONA STATUTORY PAYMENT BOND
PURSUANT TO TITLES 28, 34, AND 41, OF THE ARIZONA REVISED STATUTES
(Penalty of this Bond must be 100% of the Contract amount)

KNOW ALL MEN BY THESE PRESENTS THAT:_____

(hereinafter "Principal"), as Principal, and _____(hereinafter "Surety"), a corporation organized and existing under the laws of the State of _____ with its principal office in the City of _____, holding a certificate of authority to transact surety business in Arizona issued by the Director of the Department of Insurance pursuant to Title 20, Chapter 2, Article 1, as Surety, are held and firmly bound unto _____ (hereinafter "Obligee") in the amount of _____ (Dollars) ($_____), for the payment whereof, the Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Obligee, dated the _____ day of _____, 20___ for construction of **POLICE STATION MAIN LOBBY AND RECORDS RENOVATIONS, PD1901.401** which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal promptly pays all moneys due to all persons supplying labor or materials to the Principal or the Principal's subcontractors in the prosecution of the work provided for in said contract, this obligation is void. Otherwise it remains in full force and effect.

PROVIDED, HOWEVER that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2 Arizona Revised Statutes, and all liabilities on this bond will be determined in accordance with the provisions, conditions and limitations of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the same extent as if it were copied at length in this Contract.

The prevailing party in a suit on this bond may recover as part of the judgment reasonable attorney fees that may be fixed by a judge of the court.

Witness our hands this _____ day of _____, 20__.

_____
PRINCIPAL SEAL

_____
AGENT OF RECORD

By _____

_____
SURETY SEAL

_____
AGENT ADDRESS

EXHIBIT E

CONTRACTOR'S AFFIDAVIT REGARDING SETTLEMENT OF CLAIMS

_____, Arizona

Date _____

Project Name: **POLICE STATION MAIN LOBBY AND RECORDS RENOVATIONS**
Project No.: **PD1901.401**

To the City of Chandler, Arizona

Gentlemen:

This is to certify that all lawful claims for materials, rental of equipment and labor used in connection with the construction of the above project, whether by subcontractor or claimant in person, have been duly discharged.

The undersigned, for the consideration of $_____, as set out in the final pay estimate, as full and complete payment under the terms of the contract, hereby waives and relinquishes any and all further claims or right of lien under, in connection with, or as a result of the above described project. The undersigned further agrees to indemnify and save harmless the City of Chandler against any and all liens, claims or liens, suits, actions, damages, charges and expenses whatsoever, which said City may suffer arising out of the failure of the undersigned to pay for all labor performances and materials furnished for the performance of said installation.

Signed and dated at _____, this _____ day of _____ 20____.

_____
CONTRACTOR

By _____

STATE OF ARIZONA)
) SS
COUNTY OF MARICOPA)

The foregoing instrument was subscribed and sworn to before me this _____ day of _____ 20 _____.

_____
Notary Public

_____
My Commission Expires

EXHIBIT F

CERTIFICATE OF COMPLETION

Project: **POLICE STATION MAIN LOBBY AND RECORDS RENOVATIONS**
Project No.: **PD1901.401**

(TO BE COMPLETED BY CONTRACTOR)

I HEREBY CERTIFY THAT ALL GOODS AND/OR SERVICES REQUIRED BY CITY OF CHANDLER PROJECT NO. **PD1901.401** HAVE BEEN DELIVERED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND BID SPECIFICATIONS AND ALL ACTIVITIES REQUIRED BY THE CONTRACTOR UNDER THE CONTRACT HAVE BEEN COMPLETED AS OF _____.
(Date)

FIRM NAME: _____

PRINCIPAL: _____
(Name)

_____
(Signature)

_____ DATE: _____
(Title)

CERTIFIED BY ENGINEER/CONSULTANT (*IF APPLICABLE*):

_____ DATE: _____
(Signature)

_____
(Firm Name)

PROJECT ACCEPTED BY USER DEPARTMENT

_____ DATE: _____
(Signature)

_____
(Dept. /Div.)

_____ Date of Final Walk-Through

_____ Date As-Built Received

_____ City As-Built Number

CHANDLER arizona
Community of Innovation

City Council Memorandum **Police Memo No.** CP21-122

Date: April 19, 2021
To: Mayor and Council
Thru: Joshua H. Wright, Acting City Manager
Sean Duggan, Police Chief
Andrew Goh, Capital Projects Manager
From: Daniel Haskins, Engineer
Subject: Professional Services Agreement No. PD1901.451 with Kitchell/CEM Inc., for the Police Station Main Lobby and Records Renovations, in an amount not to exceed $198,540

Proposed Motion:

Move City Council award Professional Services Agreement No. PD1901.451, to Kitchell/CEM Inc., for the Police Station Main Lobby and Records Renovations, in an amount not to exceed $198,540.

Background/Discussion:

The 2014 Police Department Facilities Master Plan identified the Police Station Main Lobby and Records Renovation as a project needed to maximize the efficiency and usage of existing structures. The records section of the main police station is open 24 hours a day to receive public inquiries with a staff of 24 full-time employees. They maintain record storage for the entire department. The workspace for employees is small and has been encroached upon by records storage needs. There is inadequate storage space for daily records and long-term storage. This project will expand the records section into a portion of the Prosecutor's Office area to provide additional work and storage space.

The project scope of work consists of contractor oversight, construction administration and inspection, Police Department coordination, schedule review, review progress payments, attendance at construction meetings, review shop drawings and submittals, review of final as-built drawings, and project close out.

The contract completion time is 210 calendar days following Notice to Proceed.

A related Construction Contract with Caliente Construction, Inc., for Police Station Main Lobby and Records Renovations, is also scheduled for this City Council meeting.

Evaluation:

The City's selection process was conducted in accordance with City policy and procedure and State law. This project is being performed under the On-Call Consultant Pre-Qualified List for Construction Management Services. Staff recommends approval of this agreement with Kitchell/CEM, Inc., based on qualifications, relevant firm experience, team experience, project understanding, and project approach.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
401.2100.6210.6PD650	General Government Capital Projects	Police Main Station Lobby	$198,540	Y

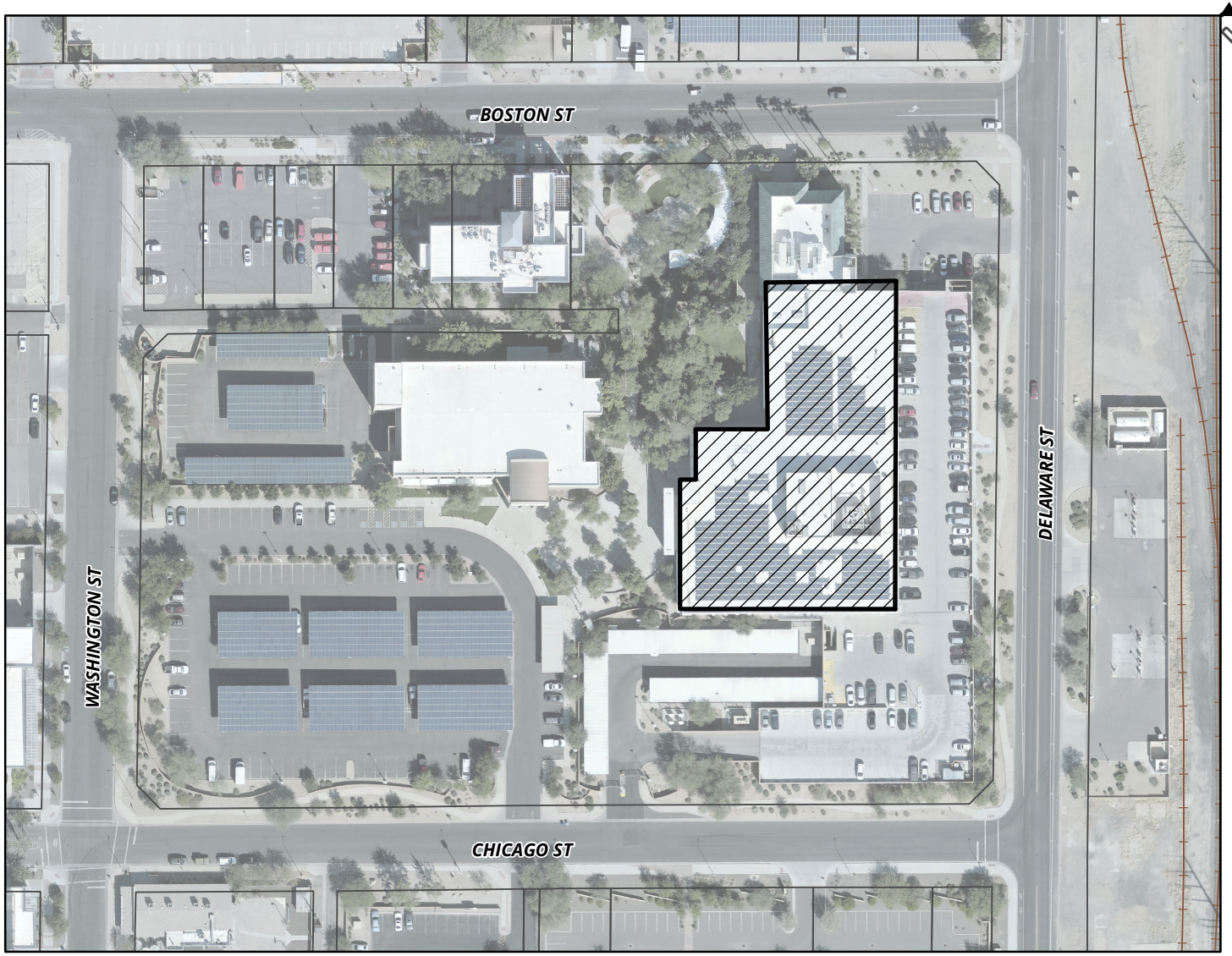
Attachments

Location Map
Agreement - Kitchell/CEM

CHANDLER arizona

POLICE STATION MAIN LOBBY AND RECORDS ROOM RENOVATION (CM SERVICES) PROJECT NO. PD1901.451





MEMO NO. CP21-122

PROJECT SITE

NTS

ChanGIS

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CHANDLER arizona
Community of Innovation

PROFESSIONAL SERVICES AGREEMENT
Construction Management Services
POLICE STATION MAIN LOBBY AND RECORDS RENOVATIONS
Project No. PD1901.451
Council Date: April 22, 2021 Item No.

THIS AGREEMENT ("Agreement") is made and entered into on the _____ day of_____, 2021 ("Effective Date"), by and between City of Chandler, an Arizona municipal corporation, ("City"), and **Kitchell/CEM, Inc.**, a California corporation, ("Consultant") (City and Consultant may individually be referred to as "Party" and collectively referred to as "Parties").

RECITALS

A. City proposes to engage Consultant to provide Construction Management Services for **POLICE STATION MAIN LOBBY AND RECORDS RENOVATIONS** project as more fully described in **Exhibit "A"**, which is attached to and made a part of this Agreement by this reference.

B. Consultant is ready, willing, and able to provide the services described in **Exhibit "A"** for the compensation and fees set forth and as described in **Exhibit "B"**, which is attached to and made a part of this Agreement by this reference.

C. City desires to contract with Consultant to provide these services under the terms and conditions set forth in this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the premises and the mutual promises contained in this Agreement, City and Consultant agree as follows:

SECTION I--CONSULTANT'S SERVICES

Consultant must perform the services described in **Exhibit "A"** to City's satisfaction within the terms and conditions of this Agreement and within the care and skill that a person who provides similar services in Chandler, Arizona exercises under similar conditions. All work or services furnished by Consultant under this Agreement must be performed in a skilled and workmanlike manner. All fixtures, furnishings, and equipment furnished by Consultant as part of the work or services under this Agreement must be new, or the latest model, and of the most suitable grade and quality for the intended purpose of the work or service.

SECTION II--PERIOD OF SERVICE

Consultant must perform the services described in **Exhibit "A"** for the term of this Agreement. Unless amended in writing by the Parties, the Agreement term expires **210** calendar days after the Notice to Proceed (NTP) Date.

SECTION III--PAYMENT OF COMPENSATION AND FEES

Unless amended in writing by the Parties, Consultant's compensation and fees as more fully described in **Exhibit "B"** for performance of the services approved and accepted by City under this Agreement must not exceed **$198,540** for the full term of the Agreement. Consultant may not increase any compensation or fees under this Agreement without the City's prior written consent. Consultant must submit monthly requests for payment of services approved and accepted during the previous billing period and must include, as applicable, detailed invoices and receipts, a narrative description of the tasks accomplished during the billing period, a list of any deliverables submitted, and any subconsultant's or supplier's actual requests for payment plus similar narrative and listing of their work. Consultant must submit an Application and Certification for Payment Sheet with the monthly request for payment to: CapitalProjects.Payables@chandleraz.gov. Payment for those services negotiated as a lump sum will be made in accordance with the percentage of the work completed during the preceding billing period. Services negotiated as a not-to-exceed fee will be paid in accordance with the work effort expended on the service during the preceding month. All requests for payment must be submitted to City for review and approval. City will make payment for approved and accepted services within 30 calendar days of City's receipt of the request for payment. Consultant bears all responsibility and liability for any and all tax obligations that result from Consultant's performance under this Agreement.

SECTION IV--CITY'S OBLIGATIONS

As part of Consultant's services under this Agreement, City will provide furnished items, services, or obligations as detailed in **Exhibit "D"**.

SECTION V--GENERAL CONDITIONS

5.1 Notices. Unless otherwise provided herein, demands under this Agreement must be in writing and will be deemed to have been duly given and received either (a) on the date of service if personally served on the party to whom notice is to be given, or (b) on the third day after the date of the postmark of deposit by first class United States mail, registered or certified, postage prepaid and properly addressed as follows:

To City:	City of Chandler Public Works & Utilities Department Attn: CIP City Engineer P.O. Box 4008, Mail Stop 407 Chandler, AZ 85244-4008

With a Copy to:	Project Manager City of Chandler Public Works & Utilities Department P.O. Box 4008, Mail Stop 407 Chandler, AZ 85244-4008
To Consultant:	Mr. Damian Glaze Kitchell/CEM, Inc. 1707 E. Highland, Ste. 157 Phoenix, AZ 85016

5.2 Records/Audit. Records of Consultant's direct personnel payroll, reimbursable expenses pertaining to this Agreement and records of accounts between City and Consultant must be kept on the basis of generally accepted accounting principles and must be made available to City and its auditors for up to three years following City's final acceptance of the services under this Agreement (this requirement is increased to five years if construction of this project is federally funded). City, its authorized representative, or any federal agency, reserves the right to audit Consultant's records to verify the accuracy and appropriateness of all cost and pricing data, including data used to negotiate this Agreement and any amendments. City reserves the right to decrease the total amount of Agreement price or payments made under this Agreement or request reimbursement from Consultant following final contract payment on this Agreement if, upon audit of Consultant's records, the audit discloses Consultant has provided false, misleading, or inaccurate cost and pricing data. Consultant will include a similar provision in all of its contracts with subconsultants who provide services under the Agreement to ensure that City, its authorized representative, or the appropriate federal agency, has access to the subconsultants' records to verify the accuracy of all cost and pricing data. City reserves the right to decrease Contract price or payments made on this Agreement or request reimbursement from Consultant following final payment on this Agreement if the above provision is not included in subconsultant agreements, and one or more subconsultants refuse to allow City to audit their records to verify the accuracy and appropriateness of all cost and pricing data. If, following an audit of this Agreement, the audit discloses Consultant has provided false, misleading, or inaccurate cost and pricing data, and the cost discrepancies exceed 1% of the total Agreement billings, Consultant will be liable for reimbursement of the reasonable, actual cost of the audit.

5.3 Alteration in Character of Work. Whenever an alteration in the character of work results in a substantial change in this Agreement, thereby materially increasing or decreasing the scope of services, cost of performance, or Project schedule, the work will be performed as directed by City. However, before any modified work is started, a written amendment must be approved and executed by City and Consultant. Such amendment must not be effective until approved by City. Additions to, modifications, or deletions from this Agreement as provided herein may be made, and the compensation to be paid to Consultant may accordingly be adjusted by mutual agreement of the Parties. It is distinctly understood and agreed that no claim for extra services or materials furnished by Consultant will be allowed by City except as provided herein, nor must Consultant do any work or furnish any materials not covered by this Agreement unless such work is first authorized in writing. Any

such work or materials furnished by Consultant without prior written authorization will be at Consultant's own risk, cost, and expense, and Consultant hereby agrees that without written authorization Consultant will make no claim for compensation for such work or materials furnished.

5.4 Termination. City and Consultant hereby agree to the full performance of the covenants contained herein, except that City reserves the right, at its discretion and without cause, to terminate or abandon any service provided for in this Agreement, or abandon any portion of the Project for which services have been performed by Consultant. In the event City abandons or suspends the services, or any part of the services as provided in this Agreement, City will notify Consultant in writing and immediately after receiving such notice, Consultant must discontinue advancing the work specified under this Agreement. Upon such termination, abandonment, or suspension, Consultant must deliver to City all drawings, plans, specifications, special provisions, estimates and other work entirely or partially completed, together with all unused materials supplied by City. Consultant must appraise the work Consultant has completed and submit Consultant's appraisal to City for evaluation. City may inspect Consultant's work to appraise the work completed. Consultant will receive compensation in full for services performed to the date of such termination. The fee will be paid in accordance with Section III of this Agreement, and as mutually agreed upon by Consultant and City. If there is no mutual agreement on payment, the final determination will be made in accordance with the "Disputes" provision in this Agreement. However, in no event may the fee exceed the fee set forth in Section III of this Agreement nor as amended in accordance with Section "Alteration in Character of Work." City will make the final payment within 60 days after Consultant has delivered the last of the partially completed items and the Parties agree on the final fee. If City is found to have improperly terminated the Agreement for cause or default, the termination will be converted to a termination for convenience in accordance with the provisions of this Agreement.

5.5 Indemnification. To the extent permitted by law, the Consultant ("Indemnitor") must indemnify, save and hold harmless City and its officers, officials, agents and employees ("Indemnitee") from any and all claims, actions, liabilities, damages, losses or expenses (including court costs, attorneys' fees and costs of claim processing, investigation and litigation) ("Claims") caused or alleged to be caused, in whole or in part, by the wrongful, negligent or willful acts, or errors or omissions of Consultant or any of its owners, officers, directors, agents, employees, or subconsultants in connection with this Agreement. This indemnity includes any claim or amount arising out of or recovered under workers' compensation law or on account of the failure of Consultant to conform to any federal, state or local law, statute, ordinance, rule, regulation or court decree. Consultant must indemnify Indemnitee from and against any and all Claims, except those arising solely from Indemnitee's own negligent or willful acts or omissions. Consultant is responsible for primary loss investigation, defense and judgment costs where this indemnification applies. In consideration of the award of this Agreement, Consultant agrees to waive all rights of subrogation against Indemnitee for losses arising from or related to this Agreement. The obligations of Consultant under this provision survive the termination or expiration of this Agreement.

5.6 Insurance Requirements. Consultant must procure insurance under the terms and

conditions and for the amounts of coverage set forth in **Exhibit "C"** against claims that may arise from or relate to performance of the work under this Agreement by Consultant and its agents, representatives, employees, and subconsultants. Consultant and any subconsultant must maintain this insurance until all of their obligations have been discharged, including any warranty periods under this Agreement. These insurance requirements are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement. City in no way warrants that the minimum limits stated in **Exhibit "C"** are sufficient to protect Consultant from liabilities that might arise out of the performance of the work under this Agreement by Consultant, Consultant's agents, representatives, employees, or subconsultants. Consultant is free to purchase such additional insurance as may be determined necessary.

5.7 Cooperation and Further Documentation. Consultant agrees to provide City such other duly executed documents as may be reasonably requested by City to implement the intent of this Agreement.

5.8 Successors and Assigns. City and Consultant each bind itself, its partners, successors, assigns, and legal representatives to the other party to this Agreement and to the partners, successors, assigns, and legal representatives of such other party in respect to all covenants of this Agreement. Neither City nor Consultant may assign, sublet, or transfer its interest in this Agreement without the written consent of the other party. In no event may any contractual relation be created between any third party and City.

5.9 Disputes. In any dispute arising out of an interpretation of this Agreement or the duties required not disposed of by agreement between Consultant and City, the final determination at the administrative level will be made by City Engineer.

5.10 Completeness and Accuracy of Consultant's Work. Consultant must be responsible for the completeness and accuracy of Consultant's services, data, and other work prepared or compiled under Consultant's obligation under this Agreement and must correct, at Consultant's expense, all willful or negligent errors, omissions, or acts that may be discovered. Correction of errors disclosed and determined to exist during any construction of the project on architectural or engineering drawings and specifications must be accomplished by Consultant. The cost of the design necessary to correct those errors attributable to Consultant and any damage incurred by City as a result of additional construction costs caused by such engineering or architectural errors will be chargeable to Consultant and will not be considered a cost of the Work. The fact that City has accepted or approved Consultant's work will in no way relieve Consultant of any of Consultant's responsibilities.

5.11 Reporting. Written monthly reports, along with updated work schedules, will be made by Consultant in the format prescribed by City. These reports will be delivered to City per schedule. When requested by City, Consultant will attend Council meetings and provide finished documents including correspondence for Council action, supporting charts, graphs, drawings and colored slides of same.

5.12 Withholding Payment. City reserves the right to withhold funds from Consultant's payments up to the amount equal to the claims City may have against Consultant until such

time that a settlement on those claims has been reached.

5.13 City's Right of Cancellation. The Parties acknowledge that this Agreement is subject to cancellation by City under the provisions of Section 38-511, Arizona Revised Statutes (A.R.S.).

5.14 Independent Consultant. For this Agreement Consultant constitutes an independent contractor. Any provisions in this Agreement that may appear to give City the right to direct Consultant as to the details of accomplishing the work or to exercise a measure of control over the work means that Consultant must follow the wishes of City as to the results of the work only. These results must comply with all applicable laws and ordinances.

5.15 Project Staffing. Prior to the start of any work under this Agreement, Consultant must submit to City detailed resumes of key personnel that will be involved in performing services prescribed in the Agreement. City hereby acknowledges its acceptance of such personnel to perform services under this Agreement. At any time hereafter that Consultant desires to change key personnel while performing under the Agreement, Consultant must submit the qualifications of the new personnel to City for prior approval. Key personnel include, but are not limited to, principals-in-charge, project manager, and project Consultant. Consultant will maintain an adequate and competent staff of qualified persons, as may be determined by City, throughout the performance of this Agreement to ensure acceptable and timely completion of the Scope of Services. If City objects, with reasonable cause, to any of Consultant's staff, Consultant must take prompt corrective action acceptable to City and, if required, remove such personnel from the Project and replace with new personnel agreed to by City.

5.16 Consultants or Subconsultants. Prior to beginning the work, Consultant must furnish City for approval the names of consultants or subconsultants to be used under this Agreement. Any subsequent changes are subject to City's written prior approval.

5.17 Force Majeure. If either party is delayed or prevented from the performance of any act required under this Agreement by reason of acts of God or other cause beyond the control and without fault of the Party (financial inability excepted), performance of that act may be excused, but only for the period of the delay, if the Party provides written notice to the other Party within ten days of such act. The time for performance of the act may be extended for a period equivalent to the period of delay from the date written notice is received by the other Party.

5.18 Compliance with Federal Laws. Consultant understands and acknowledges the applicability of the Americans with Disabilities Act, the Immigration Reform and Control Act of 1986 and the Drug Free Workplace Act of 1989 to it. Consultant agrees to comply with these laws in performing this Agreement and to permit City to verify such compliance.

5.19 No Israel Boycott. By entering into this Agreement, Consultant certifies that Consultant is not currently engaged in, and agrees for the duration of the Agreement, not to engage in a boycott of Israel as defined by state statute.

5.20 Legal Worker Requirements. A.R.S. § 41-4401 prohibits City from awarding a contract to

any consultant who fails, or whose subconsultants fail, to comply with A.R.S. § 23-214(A). Therefore, Consultant agrees Consultant and each subconsultant it uses warrants their compliance with all federal immigration laws and regulations that relate to their employees and their compliance with § 23-214, subsection A. A breach of this warranty will be deemed a material breach of the Agreement and may be subject to penalties up to and including termination of the Agreement. City retains the legal right to inspect the papers of any Consultant's or subconsultant's employee who provides services under this Agreement to ensure that Consultant and subconsultants comply with the warranty under this provision.

5.21 Lawful Presence Requirement. A.R.S. §§ 1-501 and 1-502 prohibit City from awarding a contract to any natural person who cannot establish that such person is lawfully present in the United States. To establish lawful presence, a person must produce qualifying identification and sign a City-provided affidavit affirming that the identification provided is genuine. This requirement will be imposed at the time of contract award. This requirement does not apply to business organizations such as corporations, partnerships, or limited liability companies.

5.22 Covenant Against Contingent Fees. Consultant warrants that no person has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, and that no member of the Chandler City Council, or any City employee has any interest, financially, or otherwise, in Consultant's firm. For breach or violation of this warrant, City may annul this Agreement without liability or, at its discretion, to deduct from the Agreement price or consideration, the full amount of such commission, percentage, brokerage, or contingent fee.

5.23 Non-Waiver Provision. The failure of either Party to enforce any of the provisions of this Agreement or to require performance of the other Party of any of the provisions hereof must not be construed to be a waiver of such provisions, nor must it affect the validity of this Agreement or any part thereof, or the right of either Party to thereafter enforce each and every provision.

5.24 Disclosure of Information Adverse to City's Interests. To evaluate and avoid potential conflicts of interest, Consultant must provide written notice to City, as set forth in this Section, of any work or services performed by Consultant for third parties that may involve or be associated with any real property or personal property owned or leased by City. Such notice must be given 7 business days prior to commencement of the services by Consultant for a third party, or 7 business days prior to an adverse action as defined below. Written notice and disclosure must be sent in accordance with Section 6.7 above. An adverse action under this Agreement includes, but is not limited to: (a) using data as defined in the Agreement acquired in connection with this Agreement to assist a third party in pursuing administrative or judicial action against City; or (b) testifying or providing evidence on behalf of any person in connection with an administrative or judicial action against City; or (c) using data to produce income for Consultant or its employees independently of performing the services under this Agreement, without the prior written consent of City. Consultant represents that except for those persons, entities, and projects identified to City, the services performed by Consultant under this Agreement are not expected to create an

interest with any person, entity, or third party project that is or may be adverse to City's interests. Consultant's failure to provide a written notice and disclosure of the information as set forth in this Section constitute a material breach of this Agreement.

5.25 Data Confidentiality and Data Security. As used in the Agreement, "data" means all information, whether written or verbal, including plans, photographs, studies, investigations, audits, analyses, samples, reports, calculations, internal memos, meeting minutes, data field notes, work product, proposals, correspondence and any other similar documents or information prepared by, obtained by, or transmitted to Consultant or its subconsultants in the performance of this Agreement. The Parties agree that all data, regardless of form, including originals, images, and reproductions, prepared by, obtained by, or transmitted to Consultant or its subconsultants in connection with Consultant's or its subconsultant's performance of this Agreement is confidential and proprietary information belonging to City. Except as specifically provided in this Agreement, Consultant or its subconsultants must not divulge data to any third party without City's prior written consent. Consultant or its subconsultants must not use the data for any purposes except to perform the services required under this Agreement. These prohibitions do not apply to the following data provided to Consultant or its subconsultants have first given the required notice to City: (a) data which was known to Consultant or its subconsultants prior to its performance under this Consultant or its subconsultants by a third party, who to the best of Consultant's or its subconsultants' knowledge and belief, had the legal right to make such disclosure and Consultant or its subconsultants are not otherwise required to hold such data in confidence; or (c) data which is required to be disclosed by virtue of law, regulation, or court order, to which Consultant or its subconsultants are subject. In the event Consultant or its subconsultants are required or requested to disclose data to a third party, or any other information to which Consultant or its subconsultants became privy as a result of any other contract with City, Consultant must first notify City as set forth in this Section of the request or demand for the data. Consultant or its subconsultants must give City sufficient facts so that City can be given an opportunity to first give its consent or take such action that City may deem appropriate to protect such data or other information from disclosure. All data must continue to be subject to the confidentiality agreements of this Agreement. Consultant or its subconsultants assume all liability to maintain the confidentiality of the data in its possession and agrees to compensate City if any of the provisions of this Section are violated by Consultant, its employees, agents or subconsultants. Solely for the purposes of seeking injunctive relief, it is agreed that a breach of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. Consultant agrees that the requirements of this Section must be incorporated into all subagreements entered into by Consultant. A violation of this Section may result in immediate termination of this Agreement without notice.

5.26 Personal Identifying Information-Data Security. Personal identifying information, financial account information, or restricted City information, whether electronic format or hard copy, must be secured and protected at all times by Consultant or its subconsultants. At a minimum, Consultant or its subconsultants must encrypt or password-protect electronic files. This includes data saved to laptop computers, computerized devices, or removable storage devices. When personal identifying information, financial account information, or restricted City information, regardless of its format, is no longer necessary,

the information must be redacted or destroyed through appropriate and secure methods that ensure the information cannot be viewed, accessed, or reconstructed. In the event that data collected or obtained by Consultant or its subconsultants in connection with this Agreement is believed to have been compromised, Consultant or its subconsultants must immediately notify City contact. Consultant agrees to reimburse City for any costs incurred by City to investigate potential breaches of this data and, where applicable, the cost of notifying individuals who may be impacted by the breach. Consultant agrees that the requirements of this Section must be incorporated into all subcontracts entered into by Consultant. It is further agreed that a violation of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. A violation of this Section may result in immediate termination of this Agreement without notice. The obligations of Consultant or its subconsultants under this Section must survive the termination of this Agreement.

5.27 Jurisdiction and Venue. This Agreement is made under, and must be construed in accordance with and governed by the laws of the State of Arizona without regard to the conflicts or choice of law provisions thereof. Any action to enforce any provision of this Agreement or to obtain any remedy with respect hereto must be brought in the courts located in Maricopa County, Arizona, and for this purpose, each Party hereby expressly and irrevocably consents to the jurisdiction and venue of such court.

5.28 Survival. All warranties, representations, and indemnifications by Consultant must survive the completion or termination of this Agreement.

5.29 Modification. Except as expressly provided herein to the contrary, no supplement, modification, or amendment of any term of this Agreement will be deemed binding or effective unless in writing and signed by the Parties.

5.30 Severability. If any provision of this Agreement or the application to any person or circumstance may be invalid, illegal or unenforceable to any extent, the remainder of this Agreement and the application will not be affected and will be enforceable to the fullest extent permitted by law.

5.31 Integration. This Agreement contains the full agreement of the Parties. Any prior or contemporaneous written or oral agreement between the Parties regarding the subject matter is merged and superseded.

5.32 Time is of the Essence. Time of each of the terms, covenants, and conditions of this Agreement is hereby expressly made of the essence.

5.33 Date of Performance. If the date of performance of any obligation or the last day of any time period provided for should fall on a Saturday, Sunday, or holiday for City, the obligation will be due and owing, and the time period will expire, on the first day after which is not a Saturday, Sunday or legal City holiday. Except as may otherwise be set forth in this Agreement, any performance provided for herein will be timely made if completed no later than 5:00 p.m. (Chandler time) on the day of performance.

5.34 Third Party Beneficiary. Nothing under this Agreement will be construed to give any

rights or benefits in the Agreement to anyone other than City and Consultant, and all duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of City and Consultant and not for the benefit of any other party.

5.35 Conflict in Language. All work performed must conform to all applicable City of Chandler codes, ordinances, and requirements as outlined in this Agreement. If there is a conflict in interpretation between provisions in this Agreement and those in **Exhibit "A"**, the provisions in this Agreement prevail.

5.36 Document/Information Release. Documents and materials released to Consultant, which are identified by City as sensitive and confidential, are City's property. The document/material must be issued by and returned to City upon completion of the services under this Agreement. Consultant secondary distribution, disclosure, copying, or duplication in any manner is prohibited without City's prior written approval. The document/material must be kept secure at all times. This directive applies to all City documents, whether in photographic, printed, or electronic data format.

5.37 Exhibits. The following exhibits are made a part of this Agreement and are incorporated by reference:

Exhibit A - Scope of Services / Schedule
Exhibit B - Compensation and Fees
Exhibit C - Insurance Requirements
Exhibit D - Special Conditions
Exhibit E – Federal Requirements (if applicable)

5.38 Special Conditions. As part of the services Consultant provides under this Agreement, Consultant agrees to comply with and fully perform the special terms and conditions set forth in **Exhibit "D"**, which is attached to and made a part of this Agreement.

5.39 Non-Discrimination and Anti-Harassment Laws. Consultant must comply with all applicable City, state, and federal non-discrimination and anti-harassment laws, rules, and regulations.

5.40 Licenses and Permits. Beginning with the Effective Date and for the full term of this Agreement, Consultant must maintain all applicable City, state, and federal licenses and permits required to fully perform Consultant's services under this Agreement.

5.41 Warranties. Consultant must furnish a one-year warranty on all work and services performed under this Agreement. Consultant must furnish, or cause to be furnished, a two-year warranty on all fixtures, furnishings, and equipment furnished by Consultant, subconsultants or suppliers under this Agreement. Any defects in design, workmanship, or materials that do not comply with this Agreement must be corrected by Consultant (including, but not limited to, all parts and labor) at Consultant's sole cost and expense. All written warranties and redlines for as-built conditions must be delivered to City on or before City's final acceptance of Consultant's services under this Agreement.

5.42 Cooperative Purchasing Agreement (S.A.V.E. – Strategic Alliance for Volume Expenditures). In addition to City of Chandler and with the approval of Consultant, this Agreement may be extended for use by other municipalities, school districts, and government agencies of the State. Any such usage by other entities must be in accordance with the ordinance, charter, or procurement rules and regulations of the respective political entity.

5.43 Budget Approval into Next Fiscal Year. This Agreement will commence on the Effective Date and continue in full force and effect until it is terminated or expires in accordance with the provisions of this Agreement. The Parties recognize that the continuation of this Agreement after the close of the City's fiscal year, which ends on June 30 of each year, is subject to the City Council's approval of a budget that includes an appropriation for this item as an expenditure. The City does not represent that this budget item will be actually adopted. This determination is solely made by the City Council.

SIGNATURE PAGE TO FOLLOW

This Agreement will be in full force and effect only when it has been approved and executed by the duly authorized City officials.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the Effective Date.

"CITY"
CITY OF CHANDLER

_____
MAYOR

Recommended By:

_____
Andrew Goh, P.E.
CIP City Engineer

APPROVED AS TO FORM:

_____
City Attorney

ATTEST:

_____
City Clerk Seal

"CONSULTANT"
Kithcell/CEM, Inc.

Wendy Cohen 04.05.21
Signature Date

Wendy Cohen
Print Name

President
Title

wendy@kitchell.com
Signer Email Address

EXHIBIT "A"
SCOPE OF SERVICES/SCHEDULE

KITCHELL

Date: March 10, 2021

Mr. Paul Ahlas, CPII
Construction Project Manager
Public Works & Utilities
Capital Projects Division
City of Chandler
215 E. Buffalo Street
Chandler, AZ 85225

RE: City of Chandler Police Station Main Lobby and Records Renovation -- Project Number: PD1901.401 – Professional Services Construction Management Proposal

Mr. Ahlas,

Thank you for considering our firm for Agency Construction Management services for the Police Station Lobby and Records Renovation project. We are pleased to submit the attached proposal with Exhibit A Scope and Exhibit B Fee Schedule. We are available immediately to join your team and provide review of the Contractor's Guaranteed Maximum Pricing (GMP) and construction documents prior to demolition work beginning in April.

Based on the information provided we anticipate construction activities to begin in April and go through October. We understand construction activities will be primarily during off hours to avoid disruption of Police Department daily operations. We will ensure there is daily communication with morning staff and construction end-of-shift safety measures are in place throughout the duration of construction activities.

We are proposing a full time Construction Manager/Inspector along with complete project documentation management and progress meeting facilitation. Our services will see the project through, substantial completion, certificate of occupancy and contractor close-out. We are including an Owner Controlled Allowance of $10,000 at the request of the City of Chandler. We propose these services at the cost of **$198,540.00.** We will provide all office supplies, computers, printers, cell phones and tools for our staff that are necessary to perform our work at no additional cost to the City.

Sincerely,

Damian Glaze
Regional Executive

Enclosures: Exhibit A – Scope of Services
Exhibit B – Fee Schedule

cc:

KITCHELL

EXHIBIT "A"

CONSTRUCTION MANAGEMENT
SCOPE OF SERVICES

PROJECT TASKS

1. PRE-CONSTRUCTION ASSISTANCE

A.Task 1.1 Preconstruction Assistance

i. Consultant must attend the pre-construction meeting.

ii. Consultant must attend the pre-construction public meeting. **N/A**

iii. Consultant must attend 0 coordination meeting with the Public Outreach Consultant to review improvements and properties requiring specific outreach efforts. **N/A**

iv. GMP review and bid document review for overall contractual compliance and project requirement reconciliation. Provide recommendation to the City on items, issues, and costs of concern.

v. Initial schedule review and analysis. Provide comments and recommendation to the City about potential critical path issues.

2. CONSTRUCTION MANAGEMENT

A.Task 2.1 Weekly Construction Meetings

i. Consultant must conduct weekly construction meetings. Each meeting includes agenda and minutes; Request for Information (RFI); Shop Drawing; Request for Information (RFI); Field Directive (FD); Material Certification; and Allowance Logs. Consultant assumes 24 weekly meetings will be held.

B.Task 2.2 CPM Schedule

i. Consultant must review and evaluate Contractor's initial CPM schedule and provide recommendations for acceptance. (see Task 1.A.v above)

ii. Consultant must review Contractor's monthly CPM schedule updates submitted with each payment application, identify CPM tasks behind schedule that may affect critical path items, project substantial and final completion dates, and initiate correspondence to City regarding those tasks. Consultant assumes 6 reviews of updated CPM schedule.

C.Task 2.3 Requests for Information (RFI's)

i. Consultant must give a cursory review for contract compliance Contractor Requests for Information (RFI's); track progress of responses; and prepare and maintain a log of all RFI's. Consultant assumes a maximum of 40 RFI submissions.

D. Task 2.4 Shop Drawing Submittals

i. Consultant must give a cursory review for contract compliance to Contractor shop drawing submittals; and prepare and maintain a

submittal log of all shop drawing submittals. Consultant assumes a maximum of 10 submittals.

E. Task 2.5 Requests for Proposal (RFP)

i. Consultant must prepare Requests for Proposal (RFP) documents detailing requested additional work tasks; review and evaluate Contractor RFP responses (cost derivatons) with approval recommendations; and prepare and maintain a submittal log list of all RFPs. Consultant assumes 5 RFPs.

F. Task 2.6 Field Directives (FD's)

i. Consultant must prepare Field Directive (FD) documents detailing requested additional work tasks; review and evaluate Contractor FD responses with approval recommendations; and prepare and maintain a submittal log list of all FDs. Consultant assumes 10 FD's.

G. Task 2.7 Contractor Payment Applications

i. Consultant must review and evaluate Contractor monthly payment applications and make recommendation for payment; maintain a weekly record of constructed pay quantities and compile monthly totals; and coordinate payment application with the City quantity report and the inspectors' daily logs. Consultant assumes a maximum of 6 payment applications, with 6 reviews each.

H. Task 2.8 Public Outreach - N/A

i. Consultant must provide public outreach services, whether by Consultant or subconsultant. Tasks will include: create and maintain project website; maintain a 24-hour bilingual project hotline to respond to inquiries, complaints and maintain a call log; public weekly email updates; public interactions with property owners as a liaison between property owners and the City; coordination meetings; project meetings; public meeting coordination; federal funds required partnering process (project team partnering meeting, maintaining status). Cost for a portion of this scope included in Weekly Construction Meetings Task 2.1

3. CONSTRUCTION INSPECTION

A. Task 3.1 Inspection Services

i. Consultant must provide weekly construction inspection to verify materials and installations conform to construction documents; prepare daily inspection reports documenting Contractor construction activities and progress during field inspection visits. Consultant assumes 1 inspector full time 3 or 4 days per week for 6 months.

B. Task 3.2 Landscape / Irrigation Inspection Services - N/A

i. Consultant must provide Irrigation system layout and installation observations; attend and observe irrigation system pressure tests; and attend a nursery visit to tag and inspect plant material. Consultant assumes site visits.

C. Task 3.3 Project Closeout

i. Consultant must compile non-conformance list prior to Substantial Completion; schedule and conduct Substantial Completion inspection; prepare Substantial Completion punch list generated from Substantial Completion inspection; track items on punch list and note completed

items; and complete and distribute Substantial Completion certificates.

ii. Consultant must schedule and conduct Final Completion inspection; and complete and distribute Final Completion certificates.

4. UTILITY COORDINATION

A. Task 4.1 Utility Coordination - N/A

i. Consultant must complete Acceptance of Construction (AOC) applications and submit to MCESD for reclaimed water booster pump and potable water/sewer improvements.

5. MATERIALS TESTING - N/A

A. Task 5.1 Quality Control (QC) Test Program - N/A

i. Consultant must review and verify Contractor's Quality Control material test type and frequencies are consistent with City and MAG; review and evaluate Contractor's QC test schedule and provide recommendations on acceptance; and review and evaluate all Contractor sampling, test, and inspection results for conformance with construction documents.

B. Task 5.2 Quality Assurance (QA) Test Program - N/A

i. Consultant must prepare and maintain a materials Quality Assurance plan per City and MAG.

ii. Consultant must coordinate with Contractor's testing representative to obtain required QA tests and sample; complete sampling and compaction testing of subgrade (including lime-stabilized subgrade base), aggregate base and asphalt concrete materials in new asphalt concrete pavement areas; complete sampling and compaction testing of subgrade, aggregate base (where required) and concrete for new curbs, gutters, sidewalks and concrete pavement and structures; and complete sampling and compaction testing of backfill for new irrigation, sewer, water, storm drain pipe, and dry utilities.

6. RECORD DRAWINGS

A. Task 6.1 Record Drawings

i. Review and monitor Contractor's weekly updates on red-line drawing set. Cost included in Inspection Services Task 3.1

ASSUMPTION, CLARIFICATIONS, AND EXCLUSIONS

1. Application fees for City reviews and permits will be paid by CITY.
2. All special inspections, materials testing, and code compliance inspections performed by the City or their designated review agencies.
3. Contractor is responsible for all construction activities, means and methods to complete the work included in their contract. Any damage resulting from the

contractor's work and all construction defects are the sole responsibility of the contractor and their subcontractors and suppliers.

4. Contractor is completely responsible for sight safety and the safe performance of the work for this project. We will monitor safety practices and notify the superintendent immediately when we observe unsafe practices. However, we will not be held liable for accidents (observed or unobserved) at any time during the course of construction.
5. We exclude any design services or assumption of design documentation and architect/engineering responsibilities. We will facilitate timely responses from the design team and monitor their overall performance.
6. The Owner's Allowance will only be utilized with prior written approval from the City representative. We currently do not have an owner's allowance included in our cost but will manage any owner held allowances and contingencies with City oversight – at the City's request.
7. The Direct Expense Allowance will not be used for this project. No reimbursable expenses on the project will be allowed without an approved contract amendment.
8. All tasks listed as N/A are excluded from the scope per the scope discussion with the City. Additionally, scope not listed in the task list are not automatically deemed to be included as a service without written notice from the City and contract amendment if necessary and reasonable.
9. Owner Controlled Allowance of $10,000 included per request by City of Chandler

EXHIBIT "B"
COMPENSATION AND FEES

KITCHELL

EXHIBIT "B"
CONSTRUCTION MANAGEMENT
SCOPE OF SERVICES
FEE SCHEDULE

Task	Description	Cost
1	**PRE-CONSTRUCTION ASSISTANCE**	
1.1	Pre-Construction Assistance	$ 11,580.00
	SUBTOTAL TASK 1:	**$ 11,580.00**
2	**CONSTRUCTION MANAGEMENT**	
2.1	Weekly Construction Meetings	$ 24,280.00
2.2	CPM Schedule	$ 7,920.00
2.3	Requests for Information (RFI)	$ 6,600.00
2.4	Shop Drawing Submittals	$ 6,600.00
2.5	Requests for Proposal (RFP)	$ 3,300.00
2.6	Field Directive (FD)	$ 7,400.00
2.7	Contractor Payment Applications	$ 6,930.00
2.8	Public Outreach - N/A	$ -
	SUBTOTAL TASK 2:	**$ 63,030.00**
3	**CONSTRUCTION INSPECTION**	
3.1	Inspection Services	$ 107,250.00
3.2	Landscape/Irrigation Inspection Services (IF APPLICABLE) - N/A	$ -

3.3	Project Closeout	$ 6,680.00
	SUBTOTAL TASK 3:	**$ 113,930.00**

4	**UTILITY COORDINATION**	
4.1	Utility Coordination - N/A	$ -
	SUBTOTAL TASK 4:	**$ -**

5	**MATERIALS TESTING**	
5.1	QC Test Program - N/A	$ -
5.2	QA Test Program - N/A	$ -
	SUBTOTAL TASK 5:	**$ -**

6	**RECORD DRAWINGS**	
6.1	Record Drawings - Included in Inspection Services Task Above (3.1)	$ -
	SUBTOTAL TASK 6:	**$ -**

SUBCONSULTANTS	
Subconsultant Name - N/A	$ -
Subconsultant Name - N/A	$ -
Subconsultant Name - N/A	$ -
Subconsultant Name - N/A	$ -
SUBTOTAL SUBCONSULTANTS:	**$ -**

ALLOWANCES	
Direct Expense Allowance	$ -
Owner's Allowance	$ 10,000.00
SUBTOTAL ALLOWANCES:	**$ 10,000.00**

PROJECT TOTAL:	**$ 198,540.00**

1707 East Highland, Suite 157 · Phoenix, AZ 85016
Phone (602) 266-1970

EXHIBIT "C"
INSURANCE REQUIREMENTS

1. General.

1.1 At the same time as execution of this Agreement, Consultant must furnish City a certificate of insurance on a standard insurance industry ACORD form. The ACORD form must be issued by an insurance company authorized to transact business in the State of Arizona possessing a current A.M. Best, Inc. rating of A-7, or better and legally authorized to do business in the State of Arizona with policies and forms satisfactory to City. Provided, however, the A.M. Best rating requirement will not be deemed to apply to required Workers' Compensation coverage.

1.2 Consultant and any of its subconsultants must procure and maintain, until all of their obligations have been discharged, including any warranty periods under this Agreement are satisfied, the insurances set forth below.

1.3 The insurance requirements set forth below are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement.

1.4 City in no way warrants that the minimum insurance limits contained in this Agreement are sufficient to protect Consultant from liabilities that might arise out of the performance of the Agreement services under this Agreement by Consultant, its agents, representatives, employees, subconsultants, and Consultant is free to purchase any additional insurance as may be determined necessary.

1.5 Failure to demand evidence of full compliance with the insurance requirements in this Agreement or failure to identify any insurance deficiency will not relieve Consultant from, nor will it be considered a waiver of its obligation to maintain the required insurance at all times during the performance of this Agreement.

1.6 Use of subconsultants: If any work is subcontracted in any way, Consultant must execute a written contract with subconsultant containing the same Indemnification Clause and Insurance Requirements as City requires of Consultant in this Agreement. Consultant is responsible for executing the Agreement with the subconsultant and obtaining Certificates of Insurance and verifying the insurance requirements.

2. Minimum Scope and Limits of Insurance. Consultant must provide coverage with limits of liability not less than those stated below.

2.1 *Professional Liability.* If the Agreement is the subject of any professional services or work performed by Consultant, or if Consultant engages in any professional services or work adjunct or residual to performing the work under this Agreement, Consultant must maintain Professional Liability insurance covering errors and omissions arising out of the work or services performed by Consultant, or anyone employed by Consultant, or anyone whose acts, mistakes, errors and omissions Consultant is legally liable, with a liability limit of $1,000,000 each claim and $2,000,000 all claims. In the event the Professional Liability

insurance policy is written on a "claims made" basis, coverage must extend for 3 years past completion and acceptance of the work or services, and Consultant, or its selected Design Professional will submit Certificates of Insurance as evidence the required coverage is in effect. The Design Professional must annually submit Certificates of Insurance citing that the applicable coverage is in force and contains the required provisions for a 3 year period.

2.2 *Commercial General Liability-Occurrence Form.* Consultant must maintain "occurrence" form Commercial General Liability insurance with a limit of not less than $2,000,000 for each occurrence, $4,000,000 aggregate. Said insurance must also include coverage for products and completed operations, independent contractors, personal injury and advertising injury. If any Excess insurance is utilized to fulfill the requirements of this paragraph, the Excess insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

2.3 *Automobile Liability-Any Auto or Owned, Hired and Non-Owned Vehicles*
Vehicle Liability: Consultant must maintain Business/Automobile Liability insurance with a limit of $1,000,000 each accident on Consultant owned, hired, and non-owned vehicles assigned to or used in the performance of Consultant's work or services under this Agreement. If any Excess or Umbrella insurance is utilized to fulfill the requirements of this paragraph, the Excess or Umbrella insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

2.4 *Workers Compensation and Employers Liability Insurance:* Consultant must maintain Workers Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Consultant employees engaged in the performance of work or services under this Agreement and must also maintain Employers' Liability insurance of not less than $1,000,000 for each accident and $1,000,000 disease for each employee.

3. Additional Policy Provisions Required.

3.1 *Self-Insured Retentions or Deductibles.* Any self-insured retentions and deductibles must be declared and approved by City. If not approved, City may require that the insurer reduce or eliminate any deductible or self-insured retentions with respect to City, its officers, officials, agents, employees, and volunteers.

3.1.1. Consultant's insurance must contain broad form contractual liability coverage.

3.1.2. Consultant's insurance coverage must be primary insurance with respect to City, its officers, officials, agents, and employees. Any insurance or self-insurance maintained by City, its officers, officials, agents, and employees will be in excess of the coverage provided by Consultant and must not contribute to it.

3.1.3. Consultant's insurance must apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

3.1.4. Coverage provided by Consultant must not be limited to the liability assumed under the indemnification provisions of this Agreement.

3.1.5. The policies must contain a severability of interest clause and waiver of subrogation against City, its officers, officials, agents, and employees, for losses arising from Work performed by Consultant for City.

3.1.6. Consultant, its successors and or assigns, are required to maintain Commercial General Liability insurance as specified in this Agreement for a minimum period of 3 years following completion and acceptance of the Work. Consultant must submit a Certificate of Insurance evidencing Commercial General Liability insurance during this 3 year period containing all the Agreement insurance requirements, including naming City of Chandler, its agents, representatives, officers, directors, officials and employees as Additional Insured as required.

3.1.7. If a Certificate of Insurance is submitted as verification of coverage, City will reasonably rely upon the Certificate of Insurance as evidence of coverage but this acceptance and reliance will not waive or alter in any way the insurance requirements or obligations of this Agreement.

3.2. *Insurance Cancellation During Term of Contract/Agreement.*

3.2.1. If any of the required policies expire during the life of this Agreement, Consultant must forward renewal or replacement Certificates to City within 10 days after the renewal date containing all the required insurance provisions.

3.2.2. Each insurance policy required by the insurance provisions of this Agreement must provide the required coverage and must not be suspended, voided or canceled except after thirty (30) days prior written notice has been given to City, except when cancellation is for non-payment of premium, then ten (10) days prior notice may be given. Such notice must be sent directly to Chandler Law-Risk Management Department, Post Office Box 4008, Mailstop 628, Chandler, Arizona 85225. If any insurance company refuses to provide the required notice, Consultant or its insurance broker must notify City of any cancellation, suspension, non-renewal of any insurance within seven (7) days of receipt of insurers' notification to that effect.

3.3 City as Additional Insured. The policies are to contain, or be endorsed to contain, the following provisions:

3.3.1. The Commercial General Liability and Automobile Liability policies are to contain, or be endorsed to contain, the following provisions: City, its officers, officials, agents, and employees are additional insureds with respect to liability arising out of activities performed by, or on behalf of, Consultant including City's general supervision of Consultant; Products and Completed operations of Consultant; and automobiles owned, leased, hired, or borrowed by Consultant.

3.3.2. City, its officers, officials, agents, and employees must be additional insureds to the full limits of liability purchased by Consultant even if those limits of liability are in excess of those required by this Agreement.

EXHIBIT "D"
SPECIAL CONDITIONS

1. Contract Worker Access Controls, Badge and Key Access Requirements. A Contract Worker from Consultant's firm must not be allowed to begin work in any City facility without: (A) The prior completion and City's acceptance of the required background screening; and (8) when required, the Contract Worker's receipt of a City issued badge. A badge will be issued to a Contract Worker solely for access to City facility(s) to which the Contract Worker is assigned. Each Contract Worker who enters a City facility must use the badge issued to the Contract Worker.

2. Badges. After receipt of the badge application, the Contract Worker will proceed to the Badging Office for processing of the badge application and issuance of the badge. City will not process the badge application until the Contract Worker satisfies the required Background Screening (as defined herein). The Contract Worker must comply with all requirements and furnish all requested information as requested by the Badging Office. Any and all fees associated with security badging will be assessed in compliance with Chandler City Code §4-22.

3. Key Access Procedures. If the Contract Worker's services require keyed access to enter a City facility(s), a separate key issue/return form must be completed and submitted by Consultant for each key issued.

4. Stolen or Lost Badges or Keys. Consultant must report lost or stolen badges or keys to City immediately. A new badge application or key issue form must be completed and submitted along with payment of the applicable fees prior to issuance of a new badge or key.
5. Return of Badges or Keys. All badges and keys are the property of City and must be returned to City at the Badging Office within one (1) business day of when the Contract Worker's access to a City facility is no longer required to furnish the services under this Agreement. Consultant must collect a Contract Worker's badge and key(s) upon the termination of the Contract Worker's employment; when the Contract Worker's services are no longer required at the particular City facility(s); or upon termination, cancellation or expiration of this Agreement.

6. Consultant's default under this Section must include, but is not limited to the following: (1) Contract Worker gains access to a City facility(s) without the proper badge or key; (2) Contract Worker uses a badge or key of another to gain access to a City facility; (3) Contract Worker commences services under this Agreement without the proper badge, key or Background Screening; (4) Contract Worker or Consultant submits false information or negligently submits wrong information to City to obtain a badge, key or applicable Background Screening; or (5) Consultant fails to collect and timely return Contract Worker's badge or key upon termination of Contract Worker's employment, reassignment of Contract Worker to another City facility or upon the expiration, cancellation or termination of this Agreement. Consultant acknowledges and agrees that

the access control, badge and key requirements in this Section are necessary to preserve and protect public health, safety and welfare. Accordingly, Consultant agrees to properly cure any default under this Section within three (3) business days from the date notice of default is sent by City. The parties agree that Consultant's failure to properly cure any default under this Section must constitute a breach of this Section. In addition to any other remedy available to City at law or in equity, Consultant must be liable for and must pay to City the sum of one thousand dollars ($1,000.00) for each breach by Consultant of this Section. The parties further agree that the sum fixed above is reasonable and approximates the actual or anticipated loss to City at the time and making of this Agreement in the event that Consultant breaches this Section. Further, the parties expressly acknowledge and agree to the fixed sum set forth above because of the difficulty of proving City's actual damages in the event that Consultant breaches this Section. The parties further agree that three (3) breaches by Consultant of this Section arising out of any default within a consecutive period of three (3) months or three (3) breaches by Consultant of this Section arising out of the same default within a period of twelve (12) consecutive months will constitute a material breach of this Agreement by Consultant and City expressly reserves all of its rights, remedies and interests under this Agreement, at law and in equity including, but not limited to, termination of this Agreement.

CHANDLER arizona
Community of Innovation

City Council Memorandum **Public Works & Utilities** **Memo No.** CP21-134

Date: April 19, 2021

To: Mayor and Council

Thru: Joshua H. Wright, Acting City Manager
Debra Stapleton, Assistant City Manager
John Knudson, Public Works and Utilities Director
Andrew Goh, Capital Projects Manager

From: Gina Ishida-Raybourn, Utilities Engineering Manager

Subject: Resolution No. 5470, Authorizing a Reclaimed Water Agreement and Project Agreement No. 4 Under the Public Infrastructure Master Agreement Dated May 24, 2019, Between the City of Chandler and Intel Corporation

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Proposed Motion:

Move City Council pass and adopt Resolution No. 5470, authorizing a Reclaimed Water Agreement and Project Agreement No. 4 under the Public Infrastructure Master Agreement dated May 24, 2019, between the City of Chandler and Intel Corporation for the construction of a Reclaimed Water Interconnect Facility and related public infrastructure needed to serve Intel's campus at 4500 S. Dobson Road.

Background:

The City has recently contracted for the design of a small membrane water treatment facility at the Airport Water Reclamation Facility (AWRF), located at 905 E. Queen Creek Road. The treated water will be delivered to the reclaimed water distribution system and the City's aquifer storage facilities at Veteran Oasis Park, located at 4050 E. Chandler Heights Road, and Tumbleweed Park, located at 2250 S. McQueen Road. The intent of the project is to optimize the use of the City's water resources by recharging additional water into the groundwater aquifer beneath the City to enhance the sustainability of the aquifer and provide resilience of the City's water system in case of drought. Participation in this project has been offered to Intel Corporation in an effort to make the current annual Reclaimed Water Agreement long-term and meet future water needs.

Arizona Revised Statute (A.R.S.) § 42-5032.02 provides for distribution of revenues for City infrastructure improvements related to manufacturing facilities. On May 23, 2019, City Council approved a Public Infrastructure Master Agreement between the City and Intel under A.R.S. § 42-5032.02 for funding and construction of public improvements necessary to support Intel's capital investment at its Ocotillo Plant, located at 4500 South Dobson Road in Chandler. The Master Agreement contemplates that Intel and the City will enter into specific project agreements for funding and construction of public improvements that will be reimbursed through a combination of transaction privilege tax revenues set aside under A.R.S. § 42-5032.02 (80%) and Intel private funds (20%).

This project will be funded by the Arizona Department of Revenue (ADOR), Intel, and the City of Chandler. A related Professional Service Agreement with Wilson Engineers, LLC, for the Reclaimed

Water Interconnect Facility, is also scheduled for this City Council meeting.

Financial Implications:

This memo has no direct financial implication, as the contracts related to the public infrastructure improvements will be managed by separate agreements under CIP Project Number WW1901. The separate agreements will manage the public infrastructure design and construction cost of $23,400,000, of which Intel will pay one-half, $11,700,000, of all costs of construction. Intel's share will be Public Infrastructure Improvement Project No. 4 under the terms of the Public Infrastructure Master Agreement between Intel and the City, dated May 24, 2019, which allows the City to seek 80% (up to $9,360,000) reimbursement of Intel's share from Arizona Department of Revenue and 20% (up to $2,230,000) directly from Intel. A General Fund Contingency transfer is needed from General Fund, Non-Departmental, Contingency Reserve to Wastewater Operating Fund, Wastewater Capital, Plant Additions and Improvements, Effluent Reuse-Storage and Recovery Wells Capital Program for the City to pay for Intel's share of the public infrastructure improvements, which will be 100% reimbursed.

Attachments

Resolution No. 5470

Exhibit A - Intel Project Agreement No. 4

Exhibit B - Intel Reclaimed Water Agreement

RESOLUTION NO. 5470

AUTHORIZING A RECLAIMED WATER AGREEMENT AND PROJECT AGREEMENT NO. 4 UNDER THE PUBLIC INFRASTRUCTURE MASTER AGREEMENT DATED MAY 24, 2019, BETWEEN THE CITY OF CHANDLER AND INTEL CORPORATION, A DELAWARE CORPORATION, FOR THE CONSTRUCTION OF A RECLAIMED WATER INTERCONNECT FACILITY AND RELATED PUBLIC INFRASTRUCTURE NEEDED TO SERVE INTEL'S CAMPUS AT 4500 S. DOBSON ROAD.

WHEREAS, City and Intel are parties to that certain Public Infrastructure Master Agreement dated May 24, 2019, which provides for the construction and financing of public infrastructure necessary to serve a manufacturing facility under A.R.S. § 42-5032.02; and

WHEREAS, City and Intel are parties to that certain Small Volume Reclaimed Water Use Agreement dated July 1, 2020 (the "Existing Agreement") which provides that City will use its best efforts to deliver up to an annual average of 2.47 million gallons per day (MGD) of reclaimed water to Intel; and

WHEREAS, the Existing Agreement is for a one-year term, Intel desires to firm City's commitment to deliver reclaimed water under the Existing Agreement by removing the one-year term, and City requires additional infrastructure to firm its commitment to deliver reclaimed water to Intel and to meet any future Intel reclaimed water needs; and

WHEREAS, City is under contract for the design of a reclaimed water interconnect facility (RWIF) with a capacity of five MGD for delivery to City's reclaimed water distribution system and aquifer storage facilities; and

WHEREAS, increasing the capacity of the RWIF from five MGD to ten MGD will enable City to firm reclaimed water deliveries to Intel under the Existing Agreement; and

WHEREAS, Intel will pay one-half of the cost of the RWIF, including any sunk costs, utilizing the funding mechanism provided under A.R.S. § 42-5032.02 as available; and

WHEREAS, upon completion of the RWIF and payment of Intel's share of the cost, City and Intel will enter into a new Reclaimed Water Delivery Agreement upon the same terms and conditions as the Existing Agreement, but with the one-year term removed; and

WHEREAS, Intel and City have further agreed to the essential terms and conditions under which City ultimately will make available to Intel up to five MGD of reclaimed water for industrial cooling purposes.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Chandler, Arizona, as follows:

Section 1. The City of Chandler is authorized to enter into the Project Agreement (Project 4 – Reclaimed Water Interconnect Facility) between the City and Intel attached to this Resolution as Exhibit "A".

Section 2. The City of Chandler is authorized to enter into the Reclaimed Water Agreement between the City and Intel attached to this Resolution as Exhibit "B".

Section 3. Consistent with the terms of the Reclaimed Water Agreement, the term of the Existing Agreement is extended until the City completes construction of the RWIF.

Section 4. Upon completion of the RWIF and payment in full of Intel's share of the costs, the City of Chandler is authorized to enter into a Reclaimed Water Delivery Agreement between the City and Intel in substantially the form attached as Exhibit A to the Reclaimed Water Agreement.

Section 5. The Mayor is authorized to execute the Project Agreement, the Reclaimed Water Agreement, and this Resolution on behalf of the City of Chandler.

Section 6. Upon completion of the RWIF and payment in full of Intel's share of the costs of construction, the Public Works & Utilities Director is authorized to execute the Reclaimed Water Delivery Agreement.

PASSED AND ADOPTED by the City Council of Chandler, Arizona, this 22nd day of April, 2021.

ATTEST:

CITY CLERK

MAYOR

CERTIFICATION

I HEREBY CERTIFY that the above and foregoing Resolution No. 5470 was duly passed and adopted by the Chandler City Council at a regular meeting held on the 22nd day of April, 2021, at which a quorum was present.

CITY CLERK

APPROVED AS TO FORM:

CITY ATTORNEY

Exhibit "A"

Project Agreement

PROJECT AGREEMENT

(Project 4 – Reclaimed Water Interconnect Facility)

This Project Agreement is entered into effective as of February 1, 2021, by and between the City of Chandler, an Arizona municipal corporation (the "City"), and Intel Corporation, a Delaware corporation ("Intel"), pursuant to the Public Infrastructure Master Agreement (the "Master Agreement") between them dated May 24, 2019. Capitalized terms used in this Project Agreement shall have the meanings defined in the Master Agreement.

City is hereby authorized, and does hereby agree, to proceed with the Work described in this Project Agreement, in compliance with the Master Agreement.

City and Intel, in consideration of the mutual covenants set forth in the Master Agreement and in this Project Agreement, agree as follows:

ARTICLE 1.

The facilities, buildings, or other improvements to the Public Infrastructure to be constructed for the benefit of the Manufacturing Facility under this Project Agreement (the "Work") are a small membrane water treatment facility at Chandler's Airport Water Reclamation Facility to make additional reclaimed water available to satisfy Intel's increasing demand for reclaimed water for industrial cooling purposes.

ARTICLE 2.

The cost of the Work covered under this Project Agreement is $11.7 million. Monies derived from transaction privilege tax revenue collected by the State of Arizona under A.R.S. § 42-5032.02 will be used to pay for 80% of the Work. Intel will pay for the remaining 20% of the Work. Intel further agrees that it will pay City for any portion of the Work not reimbursed by the State of Arizona under A.R.S. § 42-5032.02 for any reason.

ARTICLE 3.

Construction of the Work is expected to be completed by July 31, 2023.

ARTICLE 4.

City shall procure the design for the Work.

ARTICLE 5.

The Contract Documents for the Work shall include this Project Agreement, the Master Agreement, other documents, forms, and requirements as specified in the Master Agreement, and a Reclaimed Water Agreement between City and Intel.

IN WITNESS WHEREOF, the Parties have executed this Project Agreement effective on the date set forth above.

ATTEST:

CITY OF CHANDLER, an Arizona municipal corporation

By_____
Kevin Hartke, Mayor

_____
CITY CLERK

APPROVED AS TO FORM:

_____
(ASST.) CITY ATTORNEY

INTEL CORPORATION, a Delaware corporation

By Sharon Anderson
Its Regional Utilities Manager

Exhibit "B"

Reclaimed Water Agreement

RECLAIMED WATER AGREEMENT

This Reclaimed Water Agreement ("Agreement") is entered into effective February 1, 2021 ("Effective Date"), by and between the City of Chandler, an Arizona municipal corporation ("City") and Intel Corporation, a Delaware corporation ("Intel"). City and Intel may be referred to individually in this Agreement as a "Party" or collectively as the "Parties."

RECITALS

A. Intel owns and operates a semiconductor manufacturing facility located at 4500 S. Dobson Road in the City of Chandler, Arizona.

B. City and Intel are parties to that certain Small Volume Reclaimed Water Use Agreement dated July 1, 2020 (the "Existing Agreement"), which provides that City will use its best efforts to deliver Reclaimed Water to Intel in an amount up to an annual average of 2.47 million gallons per day (MGD), plus or minus 20% and with a peak daily volume of no more than 3.2 MGD. The Existing Agreement is for a one-year term ending at 5:00 p.m. on June 30, 2021.

C. Intel desires to firm City's commitment to deliver Reclaimed Water under the Existing Agreement by removing the one-year term.

D. City requires additional infrastructure to firm its commitment to deliver Reclaimed Water to Intel and to meet any future Intel Reclaimed Water needs.

AGREEMENT

NOW, THERFORE, in consideration of the mutual covenants set forth in this Agreement, the Parties agree as follows:

1. Definitions. The following definitions apply to this Agreement:

1.1. Costs of Construction. "Costs of Construction" means all direct costs, fees, or expenses associated with the construction of a specified infrastructure project, including: design and engineering costs; the cost of any land, easements, rights-of-way or other real property interests required in connection with the project; broker commissions; escrow fees and premiums for title insurance (including endorsements); permitting fees and costs; amounts paid to contractors, subcontractors, and material suppliers; amounts paid to construction managers and similar personnel; the cost of studies or reports required in connection with the construction; casualty, "wrap," and liability insurance; the cost of any appurtenant facilities and structures; and staging costs.

1.2. Operational Year. "Operational Year" means a calendar year commencing January 1 and ending December 31.

1.3. Overage. "Overage" means an increase in the Costs of Construction, regardless of the cause.

1.4. Planned Canal Outage Schedule. "Planned Canal Outage Schedule" means the scheduled dry-up or other major maintenance resulting in unavailability of a canal provided to City by the canal operator.

1.5. Potable Non-Residential Rate. "Potable Non-Residential Rate" means the then-current rate per gallon that City charges non-residential customers for delivery of potable water.

1.6. Reclaimed Water. "Reclaimed Water" shall mean water that has been treated at a City of Chandler wastewater treatment facility for delivery to Intel.

1.7. Reclaimed Water Rate. "Reclaimed Water Rate" means the then-current per gallon rate that City charges to users of treated effluent under Chandler City Code Chapter 50.

1.8. Shortage. "Shortage" means any reduction in City's capacity to deliver Reclaimed Water, such as unforeseen issues with water quality, a canal dry-up or other outage, or major scheduled or unscheduled maintenance on City Water Reclamation Facilities.

1.9. Wastewater. "Wastewater" means water that Intel delivers to any City of Chandler wastewater treatment facility which satisfies all applicable federal, state and City pre-treatment standards.

1.10. Water Reclamation Facilities. "Water Reclamation Facilities" means any infrastructure that City uses or relies upon to deliver Reclaimed Water to Intel under this Agreement, including, but not limited to, City's Airport Water Reclamation Facility (AWRF), City's Ocotillo Water Reclamation Facility (OWRF), and any other infrastructure or improvements constructed under this Agreement or any future development agreement between City and Intel.

2. Phase 1 Improvements. To enable City to firm Reclaimed Water deliveries to Intel, City and Intel will partner on the construction of a small membrane water treatment facility at AWRF as set forth below.

2.1. Reclaimed Water Interconnect Facility (RWIF). City has initiated a long-lead design contract for the design of a small membrane water treatment facility with a capacity of five MGD for delivery to City's reclaimed water distribution system and aquifer storage facilities at Veteran's Oasis Park and Tumbleweed Park (the "Long-Lead Design Contract").

2.2. Intel Participation in RWIF. For the benefit of Intel, City will increase the design capacity of its RWIF from five MGD to ten MGD (the "Phase 1 Improvements"). The estimated Costs of Construction related to the Phase 1 Improvements is $23.4 million as set forth in Table A below.

Table A

Work Item Description	Est. Cost
Design	$ 2,008,560
Equipment (including membranes, large equipment, and electrical gear)	6,000,000
Construction	13,391,440
Construction Administration and Inspection Services	2,000,000
Total	$ 23,400,000

Intel will pay one-half of all Costs of Construction related to completion of the RWIF, including the Long-Lead Design Contract and any other sunk costs as of the date of this Agreement ("Intel's Share"). Any Overage will be paid by the Party whose actions cause the Overage. If the Parties have agreed to the Overage, or if the cause of the Overage is beyond the control of either Party or reasonably cannot be determined, City and Intel will each pay one-half of the Overage. Intel's Share will be Public Infrastructure Improvement Project 4 under the terms of the Public Infrastructure Master Agreement between Intel and City dated May 24, 2019 (the "Master Agreement"). City will seek reimbursement of 80% of Intel's Share from the Arizona Department of Revenue ("ADOR") under the terms of the Master Agreement, and Intel shall reimburse City for 20% of Intel's Share as set forth in Table B below. Intel agrees that it will pay City for any portion of Intel's Share not reimbursed by ADOR for any reason.

Table B
($ million)

Est. Total Cost	City Share	Est. City Cost	Intel Share	Est. Intel Cost	Intel % Funding	Est. Intel $ Funding	ADOR % Funding	Est. ADOR $ Funding
$ 23.4	50%	$11.7	50%	$11.7	20%	$2.34	80%	$9.36

2.3. Extension of Existing Agreement. City and Intel agree to extend the term of the Existing Agreement until City completes construction of the RWIF.

2.4. Reclaimed Water Delivery Agreement. Upon completion of the RWIF and payment in full of Intel's Share, City and Intel will enter into a Reclaimed Water Delivery Agreement in the form attached as Exhibit "A".

2.5. Termination of Existing Agreement. Upon execution of the Reclaimed Water Delivery Agreement, the Existing Agreement shall terminate.

3. Phase 2 Improvements. When Intel determines that its demand will exceed the volume of Reclaimed Water being delivered under the Reclaimed Water Delivery Agreement, Intel may initiate Phase 2 Improvements by providing written Notice to City. City and Intel will enter into a development agreement under A.R.S. § 9-500.05 addressing the expansion of Intel's manufacturing facilities and the requirements for public infrastructure associated with that expansion (the "Phase 2 Development Agreement"), which shall include at least the following:

3.1. Intel Expansion. A description of Intel's planned expansion and a projection of the economic impacts of same through increased property tax revenues, job creation, and other economic development.

3.2. Infrastructure. For the purpose of providing necessary supply and redundancy in the system, design, construction, and financing of a transmission line capable of delivering up to 11 MGD of Reclaimed Water from AWRF to City's Ocotillo Water Reclamation Facility and Intel's Blended Reuse Water Tank, plus any other infrastructure required to enable City to deliver a total annual average of five MGD of Reclaimed Water to Intel, including any volumes required for peaking ("Phase 2 Improvements").

3.3. City's Delivery Commitment. City will commit to delivering an annual average of five MGD of Reclaimed Water to Intel upon completion of the Phase 2 Improvements and subject to the terms and conditions set forth in this Section 3.

3.4. Supply/Demand Forecasting. By September 1 of each year, Intel will provide City with an annual Reclaimed Water use plan and a Wastewater supply plan for the following Operational Year. On the 15th of every month Intel will provide City with a Reclaimed Water demand and Wastewater supply forecast for the following month. To ensure that an adequate volume of reclaimed water is available to serve City's other reclaimed water users, Intel's annual Reclaimed Water demand should not exceed the volume of Wastewater that Intel delivers to City Water Reclamation Facilities. City and Intel agree to work cooperatively to resolve any operational difficulties experienced by either Party.

3.5. Priority and Shortage Sharing. City's delivery of an annual average of five MGD of Reclaimed Water to Intel will be exempt from the provisions of City Code Section 53-3.1. Shortages will be allocated between Intel and City as follows:

3.5.1. Shortage Lasting Less Than Seven Days. For a Shortage lasting less than seven days, City will continue to meet deliveries to Intel using other City water resources.

3.5.2. Shortage Lasting Seven Days or Longer. For a Shortage lasting seven days or longer, reductions will be shared equally between City and Intel resulting in a reduced annual average delivery volume for both. City will provide at least 48 hours' Notice to Intel prior to reducing the volume of Reclaimed Water delivered to Intel.

3.5.3. Planned Outage. City will share the Planned Canal Outage Schedule with Intel annually or as revised by the source water entity.

3.5.4. Makeup Water. Any reduction in annual average delivery volume may be addressed during the remaining months of the Operational Year by adjusting monthly flows to make up the reduced volume up to an annual average volume of five MGD at the Reclaimed Water Rate.

3.6. Additional Water. Intel may purchase an annual average volume of more than five MGD of Reclaimed Water, if available and with the prior approval of City's Director of Public Works & Utilities, at City's then-current Potable Water Non-Residential Rate, to be reconciled annually and billed separately as the difference between the Potable Non-Residential Rate and the Reclaimed Water Rate previously paid through the monthly billing process.

3.7. Limitation on Use. Intel shall limit its use of Reclaimed Water delivered by City to industrial cooling purposes only.

3.8. Termination of Reclaimed Water Delivery Agreement. Upon completion of the Phase 2 Improvements, the Reclaimed Water Delivery Agreement shall terminate and the Parties shall operate according to the terms and conditions of the Phase 2 Development Agreement.

4. Ownership of Improvements. City shall own, operate, and maintain all Phase 1 and Phase 2 Improvements completed under this Agreement and any future development agreement between City and Intel.

5. Title 34 Compliance. City shall design and construct all Phase 1 and Phase 2 Improvements in compliance with the requirements of Arizona Revised Statutes Title 34.

6. Additional Terms and Conditions.

6.1. Notice. Except as otherwise required by law, any notice, demand or other communication required to be given by this Agreement (each, a "Notice") shall be in writing and shall be given by (i) personal delivery; (ii) by certified or registered United States Mail, return receipt requested or by United States Priority Mail; or (iii) by any nationally recognized express or overnight delivery service (e.g., Federal Express or UPS), with all postage and other delivery charges prepaid and addressed to the Parties at their respective

addresses set forth below, or at such other address as a Party may designate in writing pursuant to the terms of this paragraph:

To Intel:	Corporate Services Ocotillo Site Manager 4500 S. Dobson Rd. Chandler, AZ 85248 OC4-009 (480) 432-8230
With copy to:	Director Global Utilities & Infrastructure 4500 S. Dobson Rd. Chandler, AZ 85248 OC2-137 (480) 715-0999
To City:	Public Works & Utilities Director City of Chandler 215 E. Buffalo St., Suite 202 Chandler, AZ 85225 (480) 782-3590
With copy to:	Chandler City Attorney 175 S. Arizona Avenue, 2nd Floor Chandler, AZ 85225 (480) 782-4640

6.2. Effective Date of Notices. Regardless of delivery method, any Notice will be deemed effective upon actual delivery or refusal to accept delivery by the addressee. Notwithstanding the foregoing, no payment shall be deemed to be made until actually received in good and available funds by the intended payee. The Parties hereby acknowledge and agree that any Notice transmitted solely by facsimile or by electronic mail shall be deemed ineffective.

6.3. Cooperation; Further Acts. The Parties agree to cooperate with each other consistent with this Agreement, as reasonably necessary to facilitate the design and construction of the RWIF and the infrastructure associated with future expansion of Intel's operations in accordance with the terms of this Agreement. In furtherance of the foregoing, each of the Parties hereto shall execute and deliver all such documents and perform all such acts as reasonably necessary, from time to time, to carry out the matters contemplated by this Agreement.

6.4. Default. Subject to the limitations set forth in this Agreement, in the event of a default by a Party of the terms of this Agreement, the non-defaulting Party shall have all remedies available to it at law or in equity, including, without limitation, specific

performance of any obligation created under this Agreement and the issuance of an injunction; provided, however, each Party waives any right to seek recovery of, or recover, any special, consequential, punitive, or other monetary damages of any kind, other than actual damages.

6.5. Venue; Attorneys' Fees. Any legal actions instituted pursuant to this Agreement must be filed in the County of Maricopa, State of Arizona, or in the Federal District Court in the District of Arizona. In any legal action, the prevailing party in such action will be entitled to reimbursement by the other Party for all reasonable costs and expenses of such action, including reasonable attorneys' fees as may be fixed by the court.

6.6. Conflicts of Interest. No member, official or employee of the City may have any direct or indirect interest in this Agreement, nor participate in any decision relating to the Agreement which is prohibited by law. All Parties hereto acknowledge that this Agreement is subject to cancellation pursuant to the provisions of Arizona Revised Statutes § 38-511.

6.7. No Partnership; Third Parties. It is not intended by this Agreement to, and nothing contained in this Agreement shall, create any owner-contractor, contractor-contractor, employer-employee, partnership, or joint venture relationship between or among any or all of the Parties hereto. No term or provision of this Agreement is intended to, or shall, be for the benefit of any person, firm, organization or corporation not a party hereto, and no such other person, firm, organization or corporation shall have any right or cause of action hereunder.

6.8. Entire Agreement. This Agreement constitutes the entire agreement between the Parties hereto pertaining to the subject matter hereof. All prior and contemporaneous agreements, representations and understandings of the Parties, oral or written, are hereby superseded and merged herein. No change or addition is to be made to this Agreement except by written amendment executed by the Parties hereto.

6.9. Governing Law. This Agreement is entered into in Arizona and shall be construed and interpreted under the laws of the State of Arizona.

6.10. Severability. Wherever possible, each provision of this Agreement shall be interpreted in such manner as to be valid under applicable law, but if any provision of this Agreement shall be conclusively determined to be invalid or unenforceable to any extent, such provision shall be ineffective to the extent of such invalidation or unenforceability, but such determination shall not invalidate the remainder of such provision or the remaining provisions of this Agreement.

6.11. Calculation of Days. As used herein, the term "business day" shall mean a day that is not a Saturday, Sunday or legal holiday in the State of Arizona. If the last day of any time period stated in this Agreement or the date on which any obligation to be

performed under this Agreement shall fall on a Saturday, Sunday or legal holiday in the State of Arizona, then the duration of such time period or the date of performance, as applicable, shall be extended so that it shall end on the next succeeding day which is not a Saturday, Sunday or legal holiday in the State of Arizona.

6.12. Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. The signature pages from one or more counterparts may be removed from such counterparts and such signature pages all attached to a single instrument so that the signatures of all Parties may be physically attached to a single document.

6.13. Recitals; Exhibits. The Recitals of this Agreement are incorporated herein by reference and form a part of this Agreement. The Parties agree that all references to this Agreement include all Exhibits designated in and attached to this Agreement, such Exhibits being incorporated into and made an integral part of this Agreement for all purposes.

6.14. Time of Essence. Time is of the essence of this Agreement and each provision of this Agreement.

6.15. Warranty Against Payment of Consideration for Agreement. Intel warrants that it has not paid or given, and will not pay or give, any third person any money or other consideration for obtaining this Agreement, other than normal costs of conducting business and costs of professional services such as architects, consultants, engineers, and attorneys.

6.16. Non-liability of City Officials and Employees. No member, official or employee of the City will be personally liable to Intel, or any successor in interest, in the event of any default or breach by the City or for any amount which may become due to Intel or its successor, or on any obligation under the terms of this Agreement.

6.17. Authority to Execute. The person signing this Agreement on behalf of Intel represents and warrants that they have the necessary authorization to enter into this Agreement on behalf of the corporation and to bind the corporation to the terms and conditions of this Agreement.

6.18. No Waiver. Except as otherwise expressly provided in this Agreement, any failure or delay by any Party in asserting any of its rights or remedies as to any default, will not operate as a waiver of any default, or of any such rights or remedies, or deprive any such Party of its right to institute and maintain any actions or proceedings which it may deem necessary to protect, assert, or enforce any such rights or remedies, including but not limited to rights and remedies existing at common law.

6.19. Captions. The captions contained in this Agreement are merely a reference and are not to be used to construe or limit the text.

6.20. Governing Statutes. References are made in this Agreement to specific sections of the Arizona Revised Statutes. Any such references mean the statute in effect on the date of the execution of this Agreement and any subsequent renumbering or reordering of those provisions.

6.21. No Israel Boycott. By entering into this contract, Developer certifies that Developer is not currently engaged in, and agrees for the duration of the contract to not engage in, a boycott of Israel.

[Signatures on following page.]

IN WITNESS WHEREOF, City has caused this Agreement to be duly executed in its name and on its behalf by its Mayor and its seal to be hereunder duly affixed and attested by its City Clerk, and Developer has signed the same, on or as of the day and year first above written.

ATTEST:

CITY OF CHANDLER, an Arizona municipal corporation

_____
City Clerk

_____
Mayor

APPROVED AS TO FORM:

_____
Assistant City Attorney

INTEL CORPORATION, a Delaware corporation

By: Sharon Anderson
Its: REGIONAL UTILITIES MANAGER

STATE OF ARIZONA)
) ss.
County of Maricopa)

Subscribed and sworn to before me this 7 day of ~~February~~ April 2021, by Sharon Anderson, in his or her capacity as Regional Utilities Manager of Intel Corporation, a Delaware corporation.

Kristen Granado
Notary Public

My Commission Expires: December 14, 2024

KRISTEN GRANADO
Notary Public - Arizona
MARICOPA COUNTY
Commission # 595768
Expires December 14, 2024

EXHIBIT "A"

Reclaimed Water Delivery Agreement

When recorded mail to:

City Clerk
City of Chandler
P. O. Box 4008, Mail Stop 606
Chandler, AZ 85244-4008

RECLAIMED WATER DELIVERY AGREEMENT

This Reclaimed Water Delivery Agreement ("Agreement") is entered into effective _____, 20___, by and between Intel Corporation, a Delaware corporation ("User"), and the City of Chandler, an Arizona municipal corporation ("City").

WHEREAS, the Arizona Department of Environmental Quality (ADEQ) has issued Aquifer Protection Permit Nos. P-10317, P-103145, P-100140 and P-105338 classifying City's water reclamation facilities as producing A+ reclaimed water and allowing reclaimed water from these facilities to be distributed and utilized for any applicable Class A+ use pursuant to a reuse permit issued under Arizona Administrative Code (AAC) Title 18, Chapter 9, Articles 5 and 7; and

WHEREAS, User intends to operate an onsite private reclaimed water system and has read and understands the provisions of Chapter 53 of the Chandler City Code and applicable state, county, and local statutes, ordinances, standards, rules, and regulations associated with the use of reclaimed water.

NOW THEREFORE, in consideration of the mutual promises set forth in this Agreement, City hereby agrees to sell and User hereby agrees to purchase reclaimed water under the following terms and conditions:

1. COMMODITY RATE. The rate to be paid by User for reclaimed water delivered by City shall be the then-applicable rate set forth in Chapter 50 of the Chandler City Code.

2. QUALITY STANDARDS. The reclaimed water delivered to User shall meet or exceed state standards established for open access landscape irrigation under AAC Title 18, Chapter 11, Article 3, Table A. User shall not be obligated to accept reclaimed water that does not meet this standard.

3. PLACE OF USE. Reclaimed water delivered under this Agreement shall be stored and used only on the property legally described in the attached Exhibit A ("Place of Use").

4. POINT(S) OF DELIVERY. City shall deliver the reclaimed water at the point(s) identified on the attached Exhibit B ("Point(s) of Delivery").

5. METERING. User shall install 1 meter(s) to record the quantity of reclaimed water delivered to the Place of Use.

6. CONTROL BOX. User shall place a diagram in each control box identifying the areas served by each sprinkler circuit. User shall seal the diagram in plastic and store it securely in the control box.

7. USE. The reclaimed water delivered under this Agreement shall be used solely for industrial cooling. No other use of the reclaimed water is contemplated or allowed under this Agreement.

8. QUANTITY. City agrees to use its best efforts to deliver to User up to an annual average of 2.47 million gallons per day (MGD), plus or minus 20%, up to a maximum of 3.2 MGD in any 24-hour period. However, nothing in this Agreement obligates City to deliver reclaimed water in uniformly equal daily or monthly quantities, and City does not guarantee that any quantity of reclaimed water will be available for delivery in any given year throughout the term of this Agreement. Notwithstanding the foregoing, the daily reclaimed water amount delivered to User in any 24-hour period may exceed 3.2 MGD if additional reclaimed water is available for delivery to User as determined by the Director of Public Works & Utilities.

9. PERMIT REQUIRED. No reclaimed water will be delivered under this Agreement unless and until ADEQ issues User a valid reuse permit under AAC Title 18, Chapter 9, Articles 5 and 7.

10. RECLAIMED WATER DELIVERY SCHEDULE. If reclaimed water infrastructure is currently available to deliver reclaimed water to the Place of Use, User shall, within 90 days of execution of this Agreement, submit a written schedule to the City estimating User's reclaimed water requirements by month and the date reclaimed water deliveries are to commence. The schedule should show the expected reclaimed water requirements for each month. Within 30 days of receipt of such schedule, the City shall develop a reclaimed water delivery schedule which estimates the monthly quantities of reclaimed water available for User and sets the time of the day and the days of the week when User may take the reclaimed water.

If at the time of executing this Agreement reclaimed water infrastructure is not available to deliver reclaimed water to the Place of Use, User must have an alternative source of water to irrigate until such infrastructure is available and, within 90 days after such infrastructure becomes available, User shall submit a written schedule to the City estimating User's reclaimed water requirements by month and setting forth the date when reclaimed water deliveries should commence. Within 30 days of receipt of such schedule, City shall develop a reclaimed water delivery schedule which estimates the monthly quantities of reclaimed water available for User and sets the time of the day and the days of the week when User may take the reclaimed water.

For each subsequent year after reclaimed water deliveries commence, User shall submit on or before October 1, a written schedule to City estimating User's reclaimed water requirements for each month of the following year. On or before December 31, City shall develop a reclaimed water delivery schedule which estimates the monthly quantities of reclaimed water available for User and sets the time of the day and the days of the week when User may take the reclaimed water.

User shall notify City of any revisions to User's monthly delivery schedule. User's delivery schedule may be adjusted by City or at the request of User. However, nothing in this Agreement obligates City to deliver reclaimed water in uniformly equal daily or monthly quantities or to increase the reclaimed water to be delivered.

11. SHORTAGE OF RECLAIMED WATER. In the event that there is insufficient reclaimed water available to meet the demand of all entities using reclaimed water, a reduction in reclaimed water deliveries to User may be made in accordance with Chapter 53 of the Chandler City Code.

12. OPERATION OF THE TURNOUT. It shall be the responsibility of User to operate User's turnout and other infrastructure in accordance with the delivery schedule developed under Paragraph 10 of this Agreement, to accept deliveries of reclaimed water in the quantities set forth in City's delivery schedule developed under Paragraph 10 of this Agreement, and to properly manage and use the reclaimed water after delivery.

13. ROUTINE MAINTENANCE. User shall periodically check and maintain the valves, controllers, sprinklers, and other equipment necessary for the delivery of reclaimed water and shall maintain a written record of the maintenance. All maintenance records shall be kept at the Place of Use for at least three years and shall be available for inspection by City during normal business hours.

14. COSTS TO USER. Any costs arising out of the use of reclaimed water by User or for the maintenance or operation of the reclaimed water delivery system downstream of the Delivery Point(s) shall be the sole responsibility of User.

15. COMPLIANCE WITH REGULATIONS. User agrees to, at its sole cost, comply with Chapter 53 of the Chandler City Code and all state, federal, and local statutes, ordinances, regulations, rules, and standards, as now exist, and are later lawfully enacted, relating to the use of reclaimed water. Such statutes, ordinances, regulations, rules, and standards include, but are not limited to, requirements and restrictions governing use of the reclaimed water, contact with employees, guests, members of the public, and adjoining properties, control of access to the reclaimed water and to the delivery system, and posting of warning signs on the delivery system and the area of storage and use.

16. TERM. Unless renewed under this Paragraph or terminated early under Paragraph 21, this Agreement shall terminate on the expiration or termination of User's reuse permit. This Agreement shall be automatically renewed if User's reuse permit is renewed by ADEQ, without substantive changes, prior to the expiration of the permit. If ADEQ makes any substantive changes to User's reuse permit or fails to renew such permit prior to the expiration of the permit, this Agreement shall terminate and a new agreement between City and User shall be required. If User has not obtained a reuse permit at the time of executing this Agreement because reclaimed water infrastructure is not yet available to deliver reclaimed water to the Place of Use, the term of this Agreement automatically shall be modified to reflect the term of User's reuse permit when issued.

17. RESALE OF RECLAIMED WATER; FURTHER REUSE. User shall not resell reclaimed water delivered under this Agreement or allow any other person to use the reclaimed water unless approved in writing by the Public Works Director.

18. AGREEMENT RUNS WITH THE LAND. This Agreement shall run with the land and shall be binding upon, and inure to the benefit of, User's successors and assigns.

19. INSPECTION. User acknowledges and agrees that city, state, county or other agency with jurisdiction may inspect the premises being served reclaimed water at reasonable times.

User specifically acknowledges that it has the responsibility to inform, notify, and/or request inspection and approvals from various agencies, including

City, MCDES, and ADEQ for certain activities relating to the construction, maintenance, and operation of its private reclaimed water system, including, but not necessarily limited to, materials, construction, facility testing, violations, and emergency situations.

20. SUSPENSION OF RECLAIMED WATER DELIVERIES. City may suspend reclaimed water deliveries in accordance with Chapter 53 of the Chandler City Code if User is not in compliance with that chapter or any other applicable federal, state, county, or local law. City will resume reclaimed water deliveries only after compliance is re-established.

21. TERMINATION. City may terminate this Agreement in accordance with Chapter 53 of the Chandler City Code if User breaches any provision of this Agreement or fails to comply with any applicable federal, state, county, or local law.

22. INDEMNIFICATION. City is responsible for the treatment and transportation of reclaimed water only upstream of the Point(s) of Delivery. User shall and does hereby agree to indemnify, defend, and hold harmless the City, its officers, agents, and employees from and against all claims, losses, fines, and damages arising out of or connected with the reclaimed water from the Point(s) of Delivery and downstream of the Point(s) of Delivery.

23. EXCUSABLE NON-PERFORMANCE. In the event of an Act of God, natural catastrophe, war, civil insurrection, accidents, acts of governmental or judicial bodies other than City, or any unexpected occurrences beyond the control of either Party which shall materially interfere with the ability of City to deliver reclaimed water, or the ability of User to accept, transmit, or distribute reclaimed water, the failure of either Party to perform its obligations under this Agreement shall be excused for as long as the condition interfering with performance continues. The maintenance and operation of City's sewage system and of the AWRF shall be solely within the discretion of City; and in the event that City discontinues operation of the AWRF, all obligations of either Party to perform shall cease without prejudice to any claimed or asserted rights of either.

24. ATTORNEYS' FEES. Should litigation be necessary to enforce any term or provision of this Agreement, or to collect any damages claimed or amount payable under this Agreement, then all reasonable litigation expenses, witness fees, court costs, and attorneys' fees shall be awarded to the prevailing party. Nothing herein shall preclude the Parties from agreeing to resolve disputes through non-binding arbitration or any other alternative dispute resolution.

25. ENTIRE AGREEMENT. Unless expressly stated otherwise, this Agreement constitutes the complete and entire Agreement between the Parties.

26. USER REPRESENTATIONS. User represents and warrants that its execution, delivery, and performance of this Agreement are duly authorized.

27. CITY REPRESENTATIONS. City represents and warrants that its execution, delivery, and performance of this Agreement has been duly authorized and entered into in compliance with the Chandler City Code.

28. NOTICES. Unless expressly stated otherwise, all notices, demands, or other communications relating to this Agreement shall be in writing and shall be deemed to have been duly delivered upon personal delivery or as of the fifth business day after mailing by United States certified mail, postage prepaid, return receipt requested, addressed as follows:

To User: Sharon W. Anderson, Utilities Purchasing Manager
Intel Corporation
4500 S. Dobson Rd. OC2-137
Chandler, Arizona 85248

To City: Utility Operations Manager
Public Works & Utilities Department
City of Chandler
PO Box 4008, MS 905
Chandler, Arizona 85244-4008

The address for notice under this Agreement may be changed by written notice in compliance with this Section.

29. AMENDMENTS. Amendments to this Agreement must be in writing and signed by both Parties.

30. GOVERNING LAW. This Agreement shall be governed by and construed under the laws of the State of Arizona. This Agreement is made and entered into in Maricopa County.

31. WAIVER. No waiver by either Party of a breach of any of the terms, covenants, or conditions of this Agreement shall be construed as waiving any succeeding or preceding breach of the same or any other term, covenant, or condition.

32. SEVERABILITY. In the event that a court declares any portion of this Agreement void for any reason, the remaining portions of this Agreement shall remain in effect to the fullest extent permissible by law.

33. CONFLICT OF INTEREST. This Agreement is subject to cancellation for a conflict of interest under A.R.S. § 38-511.

IN WITNESS WHEREOF, the Parties have executed this Agreement effective as of the date set forth above.

Intel Corporation, a Delaware corporation

By _____
[name]
[title]

CITY OF CHANDLER, an Arizona municipal corporation

ATTEST:

By _____
City Clerk

By _____
Director of Public Works & Utilities

APPROVED AS TO FORM:

By _____
(Asst.) City Attorney

CHANDLER arizona
Community of Innovation

City Council Memorandum **Public Works & Utilities** **Memo No.** UA21-049

Date: April 19, 2021

To: Mayor and Council

Thru: Joshua H. Wright, Acting City Manager
Debra Stapleton, Assistant City Manager
John Knudson, Public Works and Utilities Director

From: Lori McCallum, Water Quality Program Manager

Subject: Agreement No. PW9-962-4035, Amendment No. 2, with Eurofins Testamerica Laboratories, Inc.; Legend Technical Services of Arizona, Inc.; and Radiation Safety Engineering, Inc., for Laboratory Testing Services

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Proposed Motion:

Move City Council approve Agreement No. PW9-962-4035, Amendment No. 2 with Eurofins Testamerica Laboratories, Inc.; Legend Technical Services of Arizona, Inc.; and Radiation Safety Engineering, Inc., for laboratory testing services, in a combined amount not to exceed $379,000, for the period of May 1, 2021, through April 30, 2022.

Background/Discussion:

The Environmental Protection Agency and the Arizona Department of Environmental Quality mandate tests for drinking water and wastewater. The City's Water Quality, Wastewater Quality, Environmental Management, Solid Waste Services, and Ocotillo Brine Reduction Facility divisions use the laboratory testing services to manage various testing requirements. The use of multiple laboratories provides assurance that tests will be completed promptly and at the lowest cost. Laboratory testing services used by the Ocotillo Brine Reduction Facility are paid for by Intel.

Evaluation:

On April 25, 2019, City Council approved Agreement No. PW9-962-4035 with Eurofins Testamerica Laboratories, Inc.; Legend Technical Services of Arizona, Inc.; and Radiation Safety Engineering, Inc., for laboratory testing services, for a one-year period, with the option of up to four (4) additional one-year extensions. The contractors have agreed to extend for one year at the same terms, conditions, and pricing.

Staff recommends extension of this agreement for the term of May 1, 2021, through April 30, 2022. This item represents the second extension of the original agreement.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N

738.1266.5219.0.0	Uninsured Liab/Env Mgmt	Other Professional Services	$50,000	N
615.3950.5219.0.0	Wastewater Oper/Wastewater Quality	Other Professional Services	$94,000	N
605.3850.5219.0.0	Water Operating/Water Quality	Other Professional Services	$180,000	N
616.3930.5219.0.0	Industrial Wastewater/Rev Osmosis	Other Professional Services	$25,000	N
625.3700.5219.0.0	Solid Waste Oper/Solid Waste Svcs	Other Professional Services	$30,000	N

Attachments

Amendment No. 2 - Eurofins Testamerica Laboratories, Inc.

Amendment No. 2 - Legend Technical Services of Arizona, Inc.

Amendment No. 2 - Radiation Safety Engineering, Inc.

CHANDLER arizona

City Clerk Document No. 18-2922

City Council Meeting Date: 4/8/21

AMENDMENT TO CITY OF CHANDLER AGREEMENT
LABORATORY TESTING SERVICES
CITY OF CHANDLER AGREEMENT NO. PW9-962-4035

THIS AMENDMENT NO. 2 is made and entered into by and between the City of Chandler, an Arizona municipal corporation (City), and Eurofins Testamerica Laboratories, Inc. (Contractor), (City and Contractor may individually be referred to as Party and collectively referred to as Parties) and made _____, 20___ (Effective Date).

RECITALS

WHEREAS, City Council approved the award of multiple Agreements for laboratory testing services (Agreement); and

WHEREAS, the term of the Agreement was May 1, 2019 through April 30, 2020, with the option of up to four one-year extensions; and

WHEREAS, the City wishes to extend the term of the multiple Agreements for laboratory testing services in an amount not to exceed $379,000 for the extension term; and

WHEREAS, the Parties wish to exercise the second option through this Amendment No. 2 to extend the Agreement for one year.

AGREEMENT

NOW THEREFORE, the Parties agree as follows:

1. The recitals are accurate and are incorporated and made a part of the Agreement by this reference.

2. Section 4, Price is amended to read as follows: The City will pay the Contractor the per unit cost set forth in Revised Exhibit B of the original Agreement, attached to and made a part of this Amendment No. 2. Total payments made to the Contractor during the term of this Amendment No. 2 will not exceed $379,000.

3. Section 5, Term is amended to read as follows: The Agreement is extended for a one-year period May 1, 2021 through April 30, 2022.

4. All other terms and conditions of the Agreement remain unchanged and in full force and effect. If a conflict or ambiguity arises between this Amendment No. 2 and the Agreement, the terms and conditions in this Amendment No. 2 prevail and control.

IN WITNESS WHEREOF, the Parties have entered into this Amendment on the Effective Date.

FOR THE CITY

By: _____

Its: Mayor

FOR THE CONTRACTOR

By: Stephanie Stimson

Its: Business Unit Manager

APPROVED AS TO FORM:

By: _____
City Attorney

ATTEST:

By: _____
City Clerk

REVISED SECTION B

PRICE SCHEDULE

(If an analyte can be tested by more than one method, include in the price list separate line items showing the price and reporting limit. For example: Metals can be analyzed by 200.7, 200.8, and 200.9; Uranium can be analyzed by 200.8 and radiochemistrymethods.)

Item	Parameter	Routine Cost	EPA Method	Lab Doing Analysis
A.	**DRINKING WATER**			
1.	**Microbiology**			
	Total coliform and E.Coli by Colilert	$15	SM 9223B	Phoenix
	Total Coliform and E.Coli by Colisure	No Bid		
	Presence-Absence	$15	SM 9223B	Phoenix
	Heterotrophic Plate Count	$18	Idexx SlimPlate	Phoenix
	Escherichia Coli	$15	SM 9223B	Phoenix
	Fecal coliform	$18	SM 9222D	Pnoenix
	Viruses	No Bid		
	Giardia and Cryptosporidium	No Bid		
2.	**Inorganic Chemical and Physical Characteristics**			
	Alkalinity	$15	SM 2320B	Phoenix
	Asbestos	No Bid		
	Bromate	$56	EPA 300.1	Irvine
	Bromide	$12	EPA 300.0	Phoenix
	Chloride	$12	EPA 300.0	Phoenix
	Chlorine	$12	Hach 8167	Phoenix
	Chlorine Dioxide	No Bid		
	Chlorite	$56	EPA 300.1	Irvine
	Color	No Bid		
	Corrosivity	No Bid		
	Cyanide	$32	SM 4500-CN C-E	Phoenix
	Cyanide, Amenable	$40	SM 4500-CN G	Phoenix
	Fluoride	$12	EPA 300.0	Phoenix
	Hardness	$5	SM 2340B	Phoenix
	Hexavalent Chromium	No Bid		
	Methylene Blue Active Substances	$63	SM 5540C	Irvine
	Nitrate	$12	EPA 300.0	Phoenix
	Nitrite	$12	EPA 300.0	Phoenix
	Ortho-Phosphate	$12	EPA 300.0	Phoenix
	Ozone	No Bid		
	Perchlorate	$65	EPA 314.0	Phoenix
	pH	$8	SM 4500H B	Phoenix
	TDS	$15	SM 2540C	Phoenix
	Specific Conductance	$15	SM 2510B	Phoenix
	Sulfate	$12	EPA 300.0	Phoenix
	TOC	$28	SM 5310B	Phoenix

Item	Parameter	Routine Cost	EPA Method	Lab Doing Analysis
	Turbidity	$12	EPA 180.1	Phoenix
	UV254	No Bid		
3.	**Metals**			
	Metals (ICP) price per metal)	$8 **	EPA 200.7	Phoenix
	Metals (ICP-MS) (price per metal)	$8 **	EPA 200.8	Phoenix
	Mercury	$25	EPA 245.1	Phoenix
4.	**Organic Chemicals**			
	Total Trihalomethanes	$45	524.2	Phoenix
	Volatile Organics	$70	524.2	Phoenix
	Semivolatile Organics	$203	525	Savannah
	Pesticides and PCBs	$70	505	Savannah
	EDB/ DBCP	$60	504	Savannah
	Carbamates	$90	531	Savannah
	Dioxins only	$275 ***	1613	Sacramento
	Glyphosate	$90	547	Savannah
	Endothall	$90	548	Savannah
	Diquat and Paraquat	$90	549	Savannah
	HAAs	$91	552	Savannah
	Chlorinated Acids	$102	515	Savannah
5.	**Radiochemistry**			
	Gross Alpha	$61	EPA 900.0	St Louis
	Gross Beta	$61	EPA 900.0	St Louis
	Radium 226	$101	EPA 903.0	St Louis
	Radium 228	$143	EPA 904	St Louis
	Total Radium	$221	EPA 903.0 / 904	St Louis
	Cesium	No Bid		
	Iodine	No Bid		
	Strontium	$163	EPA 905	St Louis
	Tritium	$91	EPA 906	St Louis
	Uranium	$176	U-02	St Louis
	Gamma Emitting Isotopes	$169	EPA 901.1	St Louis
6.	**Biological**			
	Microscopic Particulate Analysis	No Bid		
7.	**Other Drinking Water Methods**			
	Ion Chromatography (Fluoride, Chloride, Nitrate, Nitrite, O-Phosphate, Sulfate) (Per ion price and group price)	$12 per anion $72 for group	EPA 300.0	Phoenix
	Radon 222	No Bid		

B.	**WASTEWATER**			
1.	**Microbiology**			
	Fecal coliform			
	Multiple Tube Fermentation	$35	SM 9223B********	Phoenix
	-Multi well	no additional charge		Phoenix
	Total Coliform			
	Multi Tube Fermentation	$35	SM 9223B********	Phoenix

Item	Parameter	Routine Cost	EPA Method	Lab Doing Analysis
	- Multi Well	no additional charge		Phoenix
	Fecal Streptococcus	No Bid		
	Multi Tube Fermentation			
	- Multi Well			
	Viruses	No Bid		
	Giardia and Cryptosporidium	No Bid		
	Ascaris lumbricoides	No Bid		
	Common tapeworm	No Bid		
	Entamoeba histolytica	No Bid		
2.	**Inorganic Chemicals, Nutrients and Demand**			
	Acidity	$25	SM 2310B	Irvine
	Alkalinity	$15	SM 2320B	Phoenix
	Ammonia	$20	SM 4500-NH3 D	Phoenix
	BOD	$30	SM 5210B	Phoenix
	Bromide	$12	EPA 300.0	Phoenix
	COD	$24	SM 5220	Phoenix
	Chloride	$12	EPA 300.0	Phoenix
	Chlorine	$12	Hach 8167	Phoenix
	Chromium Hexavalent	$28	SM 3500CR-D	Phoenix
	Color	No Bid		
	Cyanide (amenable)	$40	SM 4500-CN G	Phoenix
	Cyanide (available)	No Bid		
	Cyanide (total)	$32	SM 4500-CN C-E	Phoenix
	Fluoride	$12	EPA 300.0	Phoenix
	Hardness	$5 *	SM 2340B	Phoenix
	TKN	$30	EPA 351.2	Phoenix
	MBAS	$63	SM 5540C	Irvine
	Nitrate	$12	EPA 300.0	Phoenix
	Nitrite	$12	EPA 300.0	Phoenix
	Oil and Grease	$50	EPA 1664	Phoenix
	TOC	$28	SM 5310B	Phoenix
	Ortho-Phosphate	$12	EPA 300.0	Phoenix
	Oxygen, dissolved	No Bid		
	pH	$8	SM 4500H B	Phoenix
	Phenols	$42	EPA 420.4	Nashville
	Phosphorus (total)	$26	SM 4500-P B,E	Phoenix
	Residue (total)	$15	SM 2540B	Phoenix
	TDS	$15	SM 2540C	Phoenix
	TSS	$15	SM 2540D	Phoenix
	Settleable Solids	$15	SM 2540F	Phoenix
	Residue, Volatile (total)	$18	EPA 160.4	Phoenix
	Silica	$8 **	EPA 200.7	Phoenix
	Sodium Azide	No Bid		
	Specific Conductance	$15	SM 2510B	Phoenix
	Sulfate	$12	EPA 300.0	Phoenix
	Dissolved Sulfide	$26	SM 4500-52 D	Irvine
	Sulfide	$26	SM 4500-52 D	Irvine

Item	Parameter	Routine Cost	EPA Method	Lab Doing Analysis
	Dissolved Sulfite	No Bid		
	Sulfite	No Bid		
	Turbidity	$12	EPA 180.1	Phoenix
3.	**Metals**			
	Metals (ICP)	$8 **	EPA 200.7	Phoenix
	Metals (ICP-MS)	$8 **	EPA 200.8	Phoenix
	Mercury	$25	EPA 245.1	Phoenix
4.	**Bioassay**			
	Toxicity	No Bid		
5.	**Organic Chemical**			
	Volatile organics GC/MS (624) (Per group price)	$72	EPA 624	Phoenix
	Volatile organics GC/MS (8260) (Per group price)	$72	8260B	Phoenix
	Acrolein, Acrylonitrile and 2 CEVE	$59	EPA 624	Irvine
	Semivolatile (8270)	$165	8270C	Phoenix
	Phenols	$165	EPA 625	Phoenix
	Benzidines	$165	EPA 625	Phoenix
	Phthalate Esters	$165	EPA 625	Phoenix
	Nitrosamines	$165	EPA 625	Phoenix
	Organochlorine Pesticides and PCBs (608)	$135	EPA 608	Phoenix
	Nitroaromatics and Isophorone	No Bid		
	PAH	$100	8270C SIM	Phoenix
	Haloethers	No Bid		
	Chlorinated Hydrocarbons	$165	EPA 625	Phoenix
	2,3,7,8,TCDD (Dioxin)	$275 ***	EPA 1613B	Sacramento
	625 Dioxin Screen	$90	EPA 625	Phoenix
	Tetra through Octa Chlorinated Dioxins and Furans	$525	EPA 1613B	Sacramento
	Triazine Pesticides	No Bid		
	Base/Neutral and Acids (625 or 1625)	$165	EPA 625	Phoenix
	Carbamates and Urea Pesticides	No Bid		
	TPH	$50	EPA 1664	Irvine
	Organophosphorus Pesticides	No Bid		
6.	**Radio Chemistry**			
	Gross Alpha	$61	EPA 900.0	St Louis
	Gross Beta	$61	EPA 900.0	St Louis
	Total Radium	$101	EPA 903.0	St Louis
	Radium 226	$101	EPA 903.0 ****	St Louis
7.	**Other Wastewater Tests**			
	Ion Chromatography (Fluoride, Chloride, Nitrate, Nitrite, 0-Phosphate, Sulfate	$12 per anion $72 for group	EPA 300.0	Phoenix
	1657	No Bid		
	PCB's only	$60	EPA608	Phoenix
	TMAH/TMACI	No Bid		

Item	Parameter	Routine Cost	EPA Method	Lab Doing Analysis
C.	HAZARDOUS WASTE			
1.	**Microbiology**			
	Total Coliforms			
	Multiple Tube Fermentation	$45	SM 9221 B & C Mod	Phoenix
	Multi Well	no additional charge ****		Phoenix
2.	**Hazardous Waste Characteristics**			
	Corrosivity	$130	1110A	Nashville
	PH determination	$8	9040C / 9045D	Phoenix
	Ignitability	$25	1030	Phoenix
	Reactivity (as Total Cyanide and Sulfide)	$40 / $45	EPA 9014 / EPA 9034	Phoenix / Irvine
3.	**Sample Extraction Procedures**			
	TCLP 1311	$40	1311	Phoenix
	1311 ZHE	$40	1311	Phoenix
	SPLP 1312	$40	1312	Phoenix
	SPLP ZHE	$40	1312	Phoenix
	Specific conductance	$15	9050A	Phoenix
4.	**Sample Prep for Metals**			
5.	**Inorganic Chemical**			
	Metals (ICP)	$8 **	6010C	Phoenix
	Metals (ICP-MS)	$8 **	6020B	Phoenix
	Chromium Hexavalent	$65	7196A	Irvine
	Mercury	$25	7470 / 7471A	Phoenix
6.	**Sample Extraction Preparation and**	Included in analysis price		
7.	**Sample Cleanup**	Included in analysis price		
8.	**Organic Chemicals (includes extraction)**			
	EDB and DBCP	$75	8011	Denver
	Nonhalogenated Volatile Organics	$90 ******	8015D	Phoenix
	Volatile Organics	$72	8260B	Phoenix
	Organochlorine Pesticides	$75	8081	Phoenix
	PCB's	$60	8082	Phoenix
	PCB's in oil	$60	8082	Phoenix
	PAH	$100	8270C SIM	Phoenix
	Semivolatile	$165	8270C	Phoenix
9.	**Miscellaneous**			
	Cyanide	$32	9014	Phoenix
	Sulfate	$12	9056	Phoenix
	pH	$8	9040C / 9045D	Phoenix
	Specific Conductance	$15	9050A	Phoenix
	Oil and Grease	$84	9071B	Nashville
	Nitrate	$12	9056	Phoenix
	Nitrite	$12	9056	Phoenix

Item	Parameter	Routine Cost	EPA Method	Lab Doing Analysis
	Chloride	$12	9056	Phoenix
	Bromide	$12	9056	Phoenix
	Fluoride	$12	9056	Phoenix
	Paint filter	$15	9095B	Phoenix
	Ortho Phosphate	$12	9056	Phoenix
10.	**Asbestos**			
	Fiber Counting	No Bid		
	Bulk Asbestos	No Bid		
11.	**Radiochemical**			
12.	**Other**			
	Ion Chromatography (Chloride, Nitrate, Nitrite, o-Phosphate, Sulfate	$12 per anion $60 for group	9056	Phoenix
D.	**AIR AND STACK PARAMETERS**			
	Volatiles (includes TCE, PCE, 1,1-DCE, 1,1,1-TCA and Chloroform)	$231.25*******	Normal 5 day TAT	Sacramento
		$277.50*******	3 day Rush	Sacramento
		$370*******	24 hour Rush	Sacramento
E.	**MISCELLANEOUS**			
	Algae Identification	No Bid		
	Flash Point	$25	1010	Irvine
	MIB/Geosmin	No Bid		
	NDMA	$165	8270C	Phoenix
	Endocrine disruptors	No Bid		
	Other, please list below			

Each sample is subject to $2.50 Safe and Environmentally Responsible Waste Management Fee

Surcharge for Priority Plus Analysis (<24 hours) 200% for standard business days; weekends and holidays

negotiable on case by case basis.

Surcharge for Priority Analysis (24 hours) 100%

Surcharge for Priority Analysis (48 hours) 75%

Surcharge for Priority Analysis (72 hours) 50%

Surcharge for Priority Analysis (72 hours - 5 day) 30%

Surcharge for Priority Analysis (5 day - 7 day) 0% for 6-7 day (not applicable for Sacramento, St Louis, Denver, or Nashville run analyses, unless otherwise noted)

Discount off list price for services not referenced on price sheets 25%

*Pricing is for Hardness calculation only

**1-3 Metals per sample will include $5 digestion fee per method

***Pricing is for 2,3,7,8-TCDD only

****Arizona does not certify for Radium 226 in Wastewater

*****Multiple well only available for Liquid samples

******Pricing for GRO/DRO/ORO

*******Pricing for TO-15 and includes Batch Certified Canister to RL and Flow Controller rental

********Analyses are available by Quanti-Tray in place of multiple tube fermentation

Hardcopy Reports - $25 for Level I/II; $50 for Level III/IV

CHANDLER arizona

City Clerk Document No. 18-2920

City Council Meeting Date: 4/8/21

AMENDMENT TO CITY OF CHANDLER AGREEMENT
LABORATORY TESTING SERVICES
CITY OF CHANDLER AGREEMENT NO. PW9-962-4035

THIS AMENDMENT NO. 2 is made and entered into by and between the City of Chandler, an Arizona municipal corporation (City), and Legend Technical Services of Arizona, Inc. (Contractor), (City and Contractor may individually be referred to as Party and collectively referred to as Parties) and made _____, 20___ (Effective Date).

RECITALS

WHEREAS, City Council approved the award of multiple Agreements for laboratory testing services (Agreement); and

WHEREAS, the term of the Agreement was May 1, 2019 through April 30, 2020, with the option of up to four one-year extensions; and

WHEREAS, the City wishes to extend the term of the multiple Agreements for laboratory testing services in an amount not to exceed $379,000 for the extension term; and

WHEREAS, the Parties wish to exercise the second option through this Amendment No. 2 to extend the Agreement for one year.

AGREEMENT

NOW THEREFORE, the Parties agree as follows:

1. The recitals are accurate and are incorporated and made a part of the Agreement by this reference.

2. Section 4, Price is amended to read as follows: The City will pay the Contractor the per unit cost set forth in Exhibit B of the original Agreement, which is incorporated into and made a part of this Amendment No. 2 by this reference. Total payments made to the Contractor during the term of this Amendment No. 2 will not exceed $379,000.

3. Section 5, Term is amended to read as follows: The Agreement is extended for a one-year period May 1, 2021 through April 30, 2022.

4. All other terms and conditions of the Agreement remain unchanged and in full force and effect. If a conflict or ambiguity arises between this Amendment No. 2 and the Agreement, the terms and conditions in this Amendment No. 2 prevail and control.

IN WITNESS WHEREOF, the Parties have entered into this Amendment on the Effective Date.

FOR THE CITY

By: _____

Its: Mayor

FOR THE CONTRACTOR

By: Marci Payne

Its: Sales and Marketing Manager

APPROVED AS TO FORM:

By: _____
City Attorney

ATTEST:

By: _____
City Clerk

CHANDLER
arizona

City Clerk Document No. 18-2921

City Council Meeting Date: 4/8/21

AMENDMENT TO CITY OF CHANDLER AGREEMENT
LABORATORY TESTING SERVICES
CITY OF CHANDLER AGREEMENT NO. PW9-962-4035

THIS AMENDMENT NO. 2 is made and entered into by and between the City of Chandler, an Arizona municipal corporation (City), and Radiation Safety Engineering, Inc. (Contractor), (City and Contractor may individually be referred to as Party and collectively referred to as Parties) and made _____, 20_____ (Effective Date).

RECITALS

WHEREAS, City Council approved the award of multiple Agreements for laboratory testing services (Agreement); and

WHEREAS, the term of the Agreement was May 1, 2019 through April 30, 2020, with the option of up to four one-year extensions; and

WHEREAS, the City wishes to extend the term of the multiple Agreements for laboratory testing services in an amount not to exceed $379,000 for the extension term; and

WHEREAS, the Parties wish to exercise the second option through this Amendment No. 2 to extend the Agreement for one year.

AGREEMENT

NOW THEREFORE, the Parties agree as follows:

1. The recitals are accurate and are incorporated and made a part of the Agreement by this reference.

2. Section 4, Price is amended to read as follows: The City will pay the Contractor the per unit cost set forth in Revised Exhibit B of the original Agreement, attached to and made a part of this Amendment No. 2 by this reference. Total payments made to the Contractor during the term of this Amendment No. 2 will not exceed $379,000.

3. Section 5, Term is amended to read as follows: The Agreement is extended for a one-year

period May 1, 2021 through April 30, 2022.

4. All other terms and conditions of the Agreement remain unchanged and in full force and effect. If a conflict or ambiguity arises between this Amendment No. 2 and the Agreement, the terms and conditions in this Amendment No. 2 prevail and control.

IN WITNESS WHEREOF, the Parties have entered into this Amendment on the Effective Date.

FOR THE CITY

By: _____

Its: Mayor

FOR THE CONTRACTOR

By: Marilyn S. Metzger

Its: V. P.

APPROVED AS TO FORM:

By: _____
City Attorney

ATTEST:

By: _____
City Clerk

REVISED SECTION B
PRICE SCHEDULE

Prices effective through June 30, 2021:

5.	**Radiochemistry**			
	Gross Alpha	$47.00	900	RSE, Inc.
	Gross Beta	$47.00	900	RSE, Inc.
	Radium 226	$78.00	903.1	RSE, Inc.
	Radium 228	$110.00	904	RSE, Inc.
	Total Radium	$170.00	903.1/904	RSE, Inc.
	Cesium	$130.00	901.1	RSE, Inc.
	Iodine	$115.00	901.1	RSE, Inc.
	Strontium	$125.00	00-04	RSE, Inc.
	Tritium	$70.00	906	RSE, Inc.
	Uranium	$135.00	ASTM 6239	RSE, Inc.
	Gamma Emitting Isotopes	$130.00	901.1	RSE, Inc.

11.	**Radiochemcial**			
	Gross Alpha and Beta	$80.00	900	RSE, Inc.
	Alpha-Emitting Radium Isotopes	$78.00	903.1	RSE, Inc.
	Radium-228	$110.00	904	RSE, Inc.

Prices effective July 1, 2021:

5.	**Radiochemistry**			
	Gross Alpha	$48.50	900	RSE, Inc.
	Gross Beta	$48.50	900	RSE, Inc.
	Radium 226	$80.00	903.1	RSE, Inc.
	Radium 228	$114.00	904	RSE, Inc.
	Total Radium	$175.00	903.1/904	RSE, Inc.
	Cesium	$135.00	901.1	RSE, Inc.
	Iodine	$118.50	901.1	RSE, Inc.
	Strontium	$130.00	00-04	RSE, Inc.
	Tritium	$73.00	906	RSE, Inc.
	Uranium	$139.00	ASTM 6239	RSE, Inc.
	Gamma Emitting Isotopes	$135.00	901.1	RSE, Inc.

11.	**Radiochemcial**			
	Gross Alpha and Beta	$82.00	900	RSE, Inc.
	Alpha-Emitting Radium Isotopes	$80.00	903.1	RSE, Inc.
	Radium-228	$114.00	904	RSE, Inc.

CHANDLER arizona
Community of Innovation

City Council Memorandum **Public Works & Utilities** **Memo No.** CP21-116

Date: April 19, 2021

To: Mayor and Council

Thru: Joshua H. Wright, Acting City Manager
Debra Stapleton, Assistant City Manager
John Knudson, Public Works and Utilities Director
Andrew Goh, Capital Projects Manager

From: Sandra Story, Engineering Project Manager

Subject: Professional Services Agreement No. WW1901.203, with Wilson Engineers, LLC, for the Reclaimed Water Interconnect Facility Design Services

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Proposed Motion:

Move City Council award Professional Services Agreement No. WW1901.203, to Wilson Engineers, LLC, for the Reclaimed Water Interconnect Facility Design Services, in an amount not to exceed $1,809,660.

Background/Discussion:

The City receives and treats wastewater from over 260,000 residents. Wastewater is treated to produce A+ quality reclaimed water, which is delivered through the City's reclaimed water distribution system for several beneficial uses including irrigation of golf courses, parks, and neighborhood common areas, industrial cooling water supply, and recharge of the aquifer for gaining groundwater storage credits. As demand for reclaimed water increases, staff is considering alternatives to supplement the reclaimed water supply. A feasibility study was recently completed to evaluate a concept to utilize the Salt River Project (SRP) canal adjacent to the Airport Water Reclamation Facility (AWRF), located at 905 E. Queen Creek Road, to deliver a small volume of the City's Salt River and Colorado River water supplies to a new treatment facility located at the AWRF site to supplement current reclaimed water supplies. This added supply will meet growing demands, allow for annual storage and recovery of SRP water, increase underground recharge, and enhance the wildlife habitats at Veterans Oasis Park. Using advanced membrane treatment technology, this new process could treat up to 10 million gallons per day (MGD). The system would be designed and constructed at the AWRF and utilize the existing reclaimed water infrastructure for distribution. Capacity of this 10 MGD will be shared equally with Intel Corporation, with the City's portion being used for groundwater recharge and to enhance the wildlife habitats at Veterans Oasis Park. Intel's portion will be used for Industrial cooling at their microchip production facilities in south Chandler. Cost for this project will also be split equally between the City and Intel.

The project scope of work consists of design services for the Reclaimed Water Interconnect Facility, including the development of process and equipment sizing, review of alternatives, raw water pump station, raw water force main, and membrane treatment and ancillary facilities. The contract completion time is 400 calendar days following Notice to Proceed.

A related Resolution for the approval of two agreements with Intel Corporation for the construction and shared use of this treatment facility is also scheduled for this City Council meeting.

Evaluation:

The selection process was conducted in accordance with City policy and procedure and State law. Staff recommends approval of this agreement with Wilson Engineers, LLC, based on qualifications, relevant firm experience, team experience, project understanding, and project approach.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
610.3910.6817.6WW189	Reclaimed Water SDF	Effluent Reuse - Storage and Recove	$1,809,660	Y

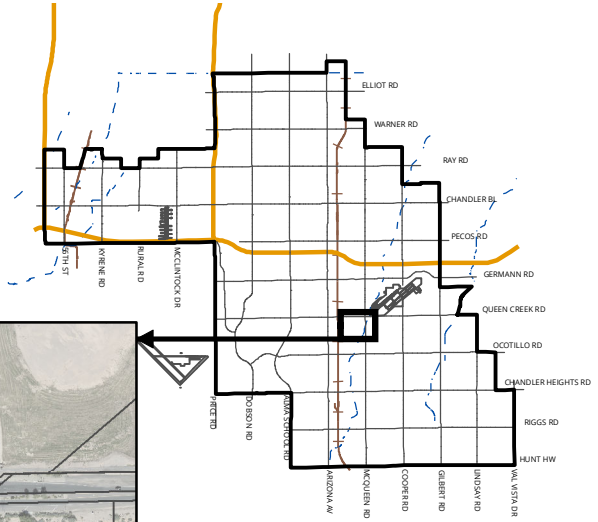
Attachments

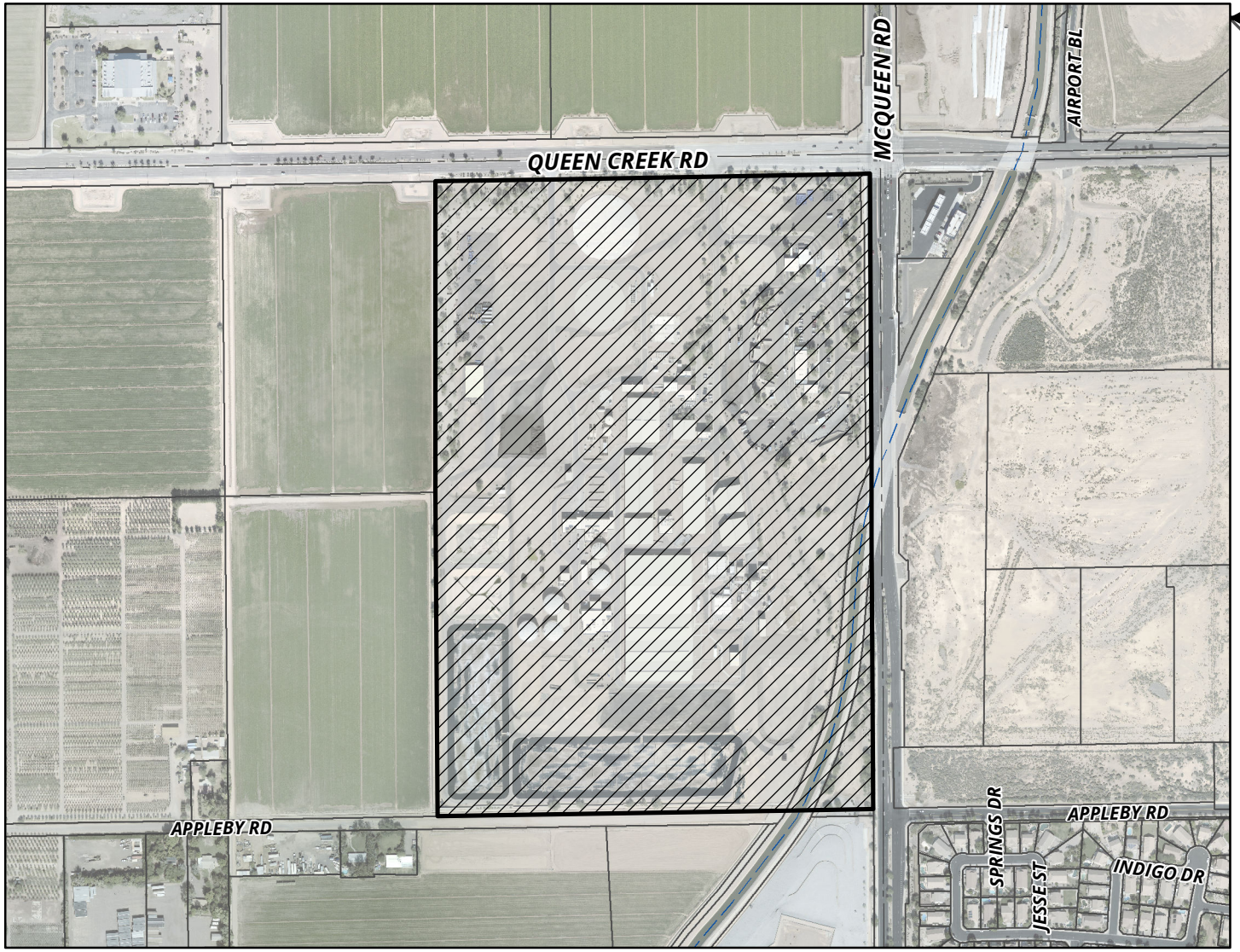
Location Map

Agreement - Wilson Engineers

CHANDLER arizona

RECLAIMED WATER SUPPLEMENTATION FACILITY DESIGN PROJECT NO. WW1901.203





MEMO NO. CP21-116

PROJECT SITE

NTS

ChanGIS

F:\ENGINEER\GENSERV_ArcMap_Shared\Map Requests\Capital Projects\CP21-116 RECLAIMED WATER SUPPLEMENTATION DESIGN\CP21-116.mxd 3/24/2021 MARICELAH

PROFESSIONAL SERVICES AGREEMENT
Design Services
RECLAIMED WATER INTERCONNECT FACILITY

Project No. WW1901.203

Council Date: April 22, 2021 Item No.

THIS AGREEMENT ("Agreement") is made and entered into on the _____ day of_____, 2021 ("Effective Date"), by and between City of Chandler, an Arizona municipal corporation, ("City"), and **Wilson Engineers, LLC**, an Arizona limited liability company, ("Consultant") (City and Consultant may individually be referred to as "Party" and collectively referred to as "Parties").

RECITALS

A. City proposes to engage Consultant to provide Design Services for **RECLAIMED WATER INTERCONNECT FACILITY** project as more fully described in **Exhibit "A"**, which is attached to and made a part of this Agreement by this reference.

B. Consultant is ready, willing, and able to provide the services described in **Exhibit "A"** for the compensation and fees set forth and as described in **Exhibit "B"**, which is attached to and made a part of this Agreement by this reference.

C. City desires to contract with Consultant to provide these services under the terms and conditions set forth in this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the premises and the mutual promises contained in this Agreement, City and Consultant agree as follows:

SECTION I--CONSULTANT'S SERVICES

Consultant must perform the services described in **Exhibit "A"** to City's satisfaction within the terms and conditions of this Agreement and within the care and skill that a person who provides similar services in Chandler, Arizona exercises under similar conditions. All work or services furnished by Consultant under this Agreement must be performed in a skilled and workmanlike manner. All fixtures, furnishings, and equipment furnished by Consultant as part of the work or services under this Agreement must be new, or the latest model, and of the most suitable grade and quality for the intended purpose of the work or service.

SECTION II--PERIOD OF SERVICE

Consultant must perform the services described in **Exhibit "A"** for the term of this Agreement. Unless amended in writing by the Parties, the Agreement term expires **400** calendar days after the Notice to Proceed (NTP) Date.

SECTION III--PAYMENT OF COMPENSATION AND FEES

Unless amended in writing by the Parties, Consultant's compensation and fees as more fully described in **Exhibit "B"** for performance of the services approved and accepted by City under this Agreement must not exceed **$1,809,660** for the full term of the Agreement. Consultant may not increase any compensation or fees under this Agreement without the City's prior written consent. Consultant must submit monthly requests for payment of services approved and accepted during the previous billing period and must include, as applicable, detailed invoices and receipts, a narrative description of the tasks accomplished during the billing period, a list of any deliverables submitted, and any subconsultant's or supplier's actual requests for payment plus similar narrative and listing of their work. Consultant must submit an Application and Certification for Payment Sheet with the monthly request for payment to: CapitalProjects.Payables@chandleraz.gov. Payment for those services negotiated as a lump sum will be made in accordance with the percentage of the work completed during the preceding billing period. Services negotiated as a not-to-exceed fee will be paid in accordance with the work effort expended on the service during the preceding month. All requests for payment must be submitted to City for review and approval. City will make payment for approved and accepted services within 30 calendar days of City's receipt of the request for payment. Consultant bears all responsibility and liability for any and all tax obligations that result from Consultant's performance under this Agreement.

SECTION IV--CITY'S OBLIGATIONS

As part of Consultant's services under this Agreement, City will provide furnished items, services, or obligations as detailed in **Exhibit "D"**.

SECTION V--GENERAL CONDITIONS

5.1 Notices. Unless otherwise provided herein, demands under this Agreement must be in writing and will be deemed to have been duly given and received either (a) on the date of service if personally served on the party to whom notice is to be given, or (b) on the third day after the date of the postmark of deposit by first class United States mail, registered or certified, postage prepaid and properly addressed as follows:

To City:	City of Chandler Public Works & Utilities Department Attn: CIP City Engineer P.O. Box 4008, Mail Stop 407 Chandler, AZ 85244-4008

With a Copy to:	Project Manager City of Chandler Public Works & Utilities Department P.O. Box 4008, Mail Stop 407 Chandler, AZ 85244-4008
To Consultant:	Mr. Uday Gandhe Wilson Engineers, LLC 1620 W. Fountainhead Pkwy., Ste. 501 Tempe, AZ 85282

5.2 Records/Audit. Records of Consultant's direct personnel payroll, reimbursable expenses pertaining to this Agreement and records of accounts between City and Consultant must be kept on the basis of generally accepted accounting principles and must be made available to City and its auditors for up to three years following City's final acceptance of the services under this Agreement (this requirement is increased to five years if construction of this project is federally funded). City, its authorized representative, or any federal agency, reserves the right to audit Consultant's records to verify the accuracy and appropriateness of all cost and pricing data, including data used to negotiate this Agreement and any amendments. City reserves the right to decrease the total amount of Agreement price or payments made under this Agreement or request reimbursement from Consultant following final contract payment on this Agreement if, upon audit of Consultant's records, the audit discloses Consultant has provided false, misleading, or inaccurate cost and pricing data. Consultant will include a similar provision in all of its contracts with subconsultants who provide services under the Agreement to ensure that City, its authorized representative, or the appropriate federal agency, has access to the subconsultants' records to verify the accuracy of all cost and pricing data. City reserves the right to decrease Contract price or payments made on this Agreement or request reimbursement from Consultant following final payment on this Agreement if the above provision is not included in subconsultant agreements, and one or more subconsultants refuse to allow City to audit their records to verify the accuracy and appropriateness of all cost and pricing data. If, following an audit of this Agreement, the audit discloses Consultant has provided false, misleading, or inaccurate cost and pricing data, and the cost discrepancies exceed 1% of the total Agreement billings, Consultant will be liable for reimbursement of the reasonable, actual cost of the audit.

5.3 Alteration in Character of Work. Whenever an alteration in the character of work results in a substantial change in this Agreement, thereby materially increasing or decreasing the scope of services, cost of performance, or Project schedule, the work will be performed as directed by City. However, before any modified work is started, a written amendment must be approved and executed by City and Consultant. Such amendment must not be effective until approved by City. Additions to, modifications, or deletions from this Agreement as provided herein may be made, and the compensation to be paid to Consultant may accordingly be adjusted by mutual agreement of the Parties. It is distinctly understood and agreed that no claim for extra services or materials furnished by Consultant will be allowed by City except as provided herein, nor must Consultant do any work or furnish any materials not covered by this Agreement unless such work is first authorized in writing. Any

such work or materials furnished by Consultant without prior written authorization will be at Consultant's own risk, cost, and expense, and Consultant hereby agrees that without written authorization Consultant will make no claim for compensation for such work or materials furnished.

5.4 Termination. City and Consultant hereby agree to the full performance of the covenants contained herein, except that City reserves the right, at its discretion and without cause, to terminate or abandon any service provided for in this Agreement, or abandon any portion of the Project for which services have been performed by Consultant. In the event City abandons or suspends the services, or any part of the services as provided in this Agreement, City will notify Consultant in writing and immediately after receiving such notice, Consultant must discontinue advancing the work specified under this Agreement. Upon such termination, abandonment, or suspension, Consultant must deliver to City all drawings, plans, specifications, special provisions, estimates and other work entirely or partially completed, together with all unused materials supplied by City. Consultant must appraise the work Consultant has completed and submit Consultant's appraisal to City for evaluation. City may inspect Consultant's work to appraise the work completed. Consultant will receive compensation in full for services performed to the date of such termination. The fee will be paid in accordance with Section Ill of this Agreement, and as mutually agreed upon by Consultant and City. If there is no mutual agreement on payment, the final determination will be made in accordance with the "Disputes" provision in this Agreement. However, in no event may the fee exceed the fee set forth in Section Ill of this Agreement nor as amended in accordance with Section "Alteration in Character of Work." City will make the final payment within 60 days after Consultant has delivered the last of the partially completed items and the Parties agree on the final fee. If City is found to have improperly terminated the Agreement for cause or default, the termination will be converted to a termination for convenience in accordance with the provisions of this Agreement.

5.5 Indemnification. To the extent permitted by law, the Consultant ("lndemnitor") must indemnify, save and hold harmless City and its officers, officials, agents and employees ("lndemnitee") from any and all claims, actions, liabilities, damages, losses or expenses (including court costs, attorneys' fees and costs of claim processing, investigation and litigation) ("Claims") caused or alleged to be caused, in whole or in part, by the wrongful, negligent or willful acts, or errors or omissions of Consultant or any of its owners, officers, directors, agents, employees, or subconsultants in connection with this Agreement. This indemnity includes any claim or amount arising out of or recovered under workers' compensation law or on account of the failure of Consultant to conform to any federal, state or local law, statute, ordinance, rule, regulation or court decree. Consultant must indemnify lndemnitee from and against any and all Claims, except those arising solely from lndemnitee's own negligent or willful acts or omissions. Consultant is responsible for primary loss investigation, defense and judgment costs where this indemnification applies. In consideration of the award of this Agreement, Consultant agrees to waive all rights of subrogation against lndemnitee for losses arising from or related to this Agreement. The obligations of Consultant under this provision survive the termination or expiration of this Agreement.

5.6 Insurance Requirements. Consultant must procure insurance under the terms and

conditions and for the amounts of coverage set forth in **Exhibit "C"** against claims that may arise from or relate to performance of the work under this Agreement by Consultant and its agents, representatives, employees, and subconsultants. Consultant and any subconsultant must maintain this insurance until all of their obligations have been discharged, including any warranty periods under this Agreement. These insurance requirements are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement. City in no way warrants that the minimum limits stated in **Exhibit "C"** are sufficient to protect Consultant from liabilities that might arise out of the performance of the work under this Agreement by Consultant, Consultant's agents, representatives, employees, or subconsultants. Consultant is free to purchase such additional insurance as may be determined necessary.

5.7 Cooperation and Further Documentation. Consultant agrees to provide City such other duly executed documents as may be reasonably requested by City to implement the intent of this Agreement.

5.8 Successors and Assigns. City and Consultant each bind itself, its partners, successors, assigns, and legal representatives to the other party to this Agreement and to the partners, successors, assigns, and legal representatives of such other party in respect to all covenants of this Agreement. Neither City nor Consultant may assign, sublet, or transfer its interest in this Agreement without the written consent of the other party. In no event may any contractual relation be created between any third party and City.

5.9 Disputes. In any dispute arising out of an interpretation of this Agreement or the duties required not disposed of by agreement between Consultant and City, the final determination at the administrative level will be made by City Engineer.

5.10 Completeness and Accuracy of Consultant's Work. Consultant must be responsible for the completeness and accuracy of Consultant's services, data, and other work prepared or compiled under Consultant's obligation under this Agreement and must correct, at Consultant's expense, all willful or negligent errors, omissions, or acts that may be discovered. Correction of errors disclosed and determined to exist during any construction of the project on architectural or engineering drawings and specifications must be accomplished by Consultant. The cost of the design necessary to correct those errors attributable to Consultant and any damage incurred by City as a result of additional construction costs caused by such engineering or architectural errors will be chargeable to Consultant and will not be considered a cost of the Work. The fact that City has accepted or approved Consultant's work will in no way relieve Consultant of any of Consultant's responsibilities.

5.11 Reporting. Written monthly reports, along with updated work schedules, will be made by Consultant in the format prescribed by City. These reports will be delivered to City per schedule. When requested by City, Consultant will attend Council meetings and provide finished documents including correspondence for Council action, supporting charts, graphs, drawings and colored slides of same.

5.12 Withholding Payment. City reserves the right to withhold funds from Consultant's payments up to the amount equal to the claims City may have against Consultant until such

time that a settlement on those claims has been reached.

5.13 City's Right of Cancellation. The Parties acknowledge that this Agreement is subject to cancellation by City under the provisions of Section 38-511, Arizona Revised Statutes (A.R.S.).

5.14 Independent Consultant. For this Agreement Consultant constitutes an independent contractor. Any provisions in this Agreement that may appear to give City the right to direct Consultant as to the details of accomplishing the work or to exercise a measure of control over the work means that Consultant must follow the wishes of City as to the results of the work only. These results must comply with all applicable laws and ordinances.

5.15 Project Staffing. Prior to the start of any work under this Agreement, Consultant must submit to City detailed resumes of key personnel that will be involved in performing services prescribed in the Agreement. City hereby acknowledges its acceptance of such personnel to perform services under this Agreement. At any time hereafter that Consultant desires to change key personnel while performing under the Agreement, Consultant must submit the qualifications of the new personnel to City for prior approval. Key personnel include, but are not limited to, principals-in-charge, project manager, and project Consultant. Consultant will maintain an adequate and competent staff of qualified persons, as may be determined by City, throughout the performance of this Agreement to ensure acceptable and timely completion of the Scope of Services. If City objects, with reasonable cause, to any of Consultant's staff, Consultant must take prompt corrective action acceptable to City and, if required, remove such personnel from the Project and replace with new personnel agreed to by City.

5.16 Consultants or Subconsultants. Prior to beginning the work, Consultant must furnish City for approval the names of consultants or subconsultants to be used under this Agreement. Any subsequent changes are subject to City's written prior approval.

5.17 Force Majeure. If either party is delayed or prevented from the performance of any act required under this Agreement by reason of acts of God or other cause beyond the control and without fault of the Party (financial inability excepted), performance of that act may be excused, but only for the period of the delay, if the Party provides written notice to the other Party within ten days of such act. The time for performance of the act may be extended for a period equivalent to the period of delay from the date written notice is received by the other Party.

5.18 Compliance with Federal Laws. Consultant understands and acknowledges the applicability of the Americans with Disabilities Act, the Immigration Reform and Control Act of 1986 and the Drug Free Workplace Act of 1989 to it. Consultant agrees to comply with these laws in performing this Agreement and to permit City to verify such compliance.

5.19 No Israel Boycott. By entering into this Agreement, Consultant certifies that Consultant is not currently engaged in, and agrees for the duration of the Agreement, not to engage in a boycott of Israel as defined by state statute.

5.20 Legal Worker Requirements. A.R.S. § 41-4401 prohibits City from awarding a contract to

any consultant who fails, or whose subconsultants fail, to comply with A.R.S. § 23-214(A). Therefore, Consultant agrees Consultant and each subconsultant it uses warrants their compliance with all federal immigration laws and regulations that relate to their employees and their compliance with § 23-214, subsection A. A breach of this warranty will be deemed a material breach of the Agreement and may be subject to penalties up to and including termination of the Agreement. City retains the legal right to inspect the papers of any Consultant's or subconsultant's employee who provides services under this Agreement to ensure that Consultant and subconsultants comply with the warranty under this provision.

5.21 Lawful Presence Requirement. A.R.S. §§ 1-501 and 1-502 prohibit City from awarding a contract to any natural person who cannot establish that such person is lawfully present in the United States. To establish lawful presence, a person must produce qualifying identification and sign a City-provided affidavit affirming that the identification provided is genuine. This requirement will be imposed at the time of contract award. This requirement does not apply to business organizations such as corporations, partnerships, or limited liability companies.

5.22 Covenant Against Contingent Fees. Consultant warrants that no person has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, and that no member of the Chandler City Council, or any City employee has any interest, financially, or otherwise, in Consultant's firm. For breach or violation of this warrant, City may annul this Agreement without liability or, at its discretion, to deduct from the Agreement price or consideration, the full amount of such commission, percentage, brokerage, or contingent fee.

5.23 Non-Waiver Provision. The failure of either Party to enforce any of the provisions of this Agreement or to require performance of the other Party of any of the provisions hereof must not be construed to be a waiver of such provisions, nor must it affect the validity of this Agreement or any part thereof, or the right of either Party to thereafter enforce each and every provision.

5.24 Disclosure of Information Adverse to City's Interests. To evaluate and avoid potential conflicts of interest, Consultant must provide written notice to City, as set forth in this Section, of any work or services performed by Consultant for third parties that may involve or be associated with any real property or personal property owned or leased by City. Such notice must be given 7 business days prior to commencement of the services by Consultant for a third party, or 7 business days prior to an adverse action as defined below. Written notice and disclosure must be sent in accordance with Section 6.7 above. An adverse action under this Agreement includes, but is not limited to: (a) using data as defined in the Agreement acquired in connection with this Agreement to assist a third party in pursuing administrative or judicial action against City; or (b) testifying or providing evidence on behalf of any person in connection with an administrative or judicial action against City; or (c) using data to produce income for Consultant or its employees independently of performing the services under this Agreement, without the prior written consent of City. Consultant represents that except for those persons, entities, and projects identified to City, the services performed by Consultant under this Agreement are not expected to create an

interest with any person, entity, or third party project that is or may be adverse to City's interests. Consultant's failure to provide a written notice and disclosure of the information as set forth in this Section constitute a material breach of this Agreement.

5.25 Data Confidentiality and Data Security. As used in the Agreement, "data" means all information, whether written or verbal, including plans, photographs, studies, investigations, audits, analyses, samples, reports, calculations, internal memos, meeting minutes, data field notes, work product, proposals, correspondence and any other similar documents or information prepared by, obtained by, or transmitted to Consultant or its subconsultants in the performance of this Agreement. The Parties agree that all data, regardless of form, including originals, images, and reproductions, prepared by, obtained by, or transmitted to Consultant or its subconsultants in connection with Consultant's or its subconsultant's performance of this Agreement is confidential and proprietary information belonging to City. Except as specifically provided in this Agreement, Consultant or its subconsultants must not divulge data to any third party without City's prior written consent. Consultant or its subconsultants must not use the data for any purposes except to perform the services required under this Agreement. These prohibitions do not apply to the following data provided to Consultant or its subconsultants have first given the required notice to City: (a) data which was known to Consultant or its subconsultants prior to its performance under this Consultant or its subconsultants by a third party, who to the best of Consultant's or its subconsultants' knowledge and belief, had the legal right to make such disclosure and Consultant or its subconsultants are not otherwise required to hold such data in confidence; or (c) data which is required to be disclosed by virtue of law, regulation, or court order, to which Consultant or its subconsultants are subject. In the event Consultant or its subconsultants are required or requested to disclose data to a third party, or any other information to which Consultant or its subconsultants became privy as a result of any other contract with City, Consultant must first notify City as set forth in this Section of the request or demand for the data. Consultant or its subconsultants must give City sufficient facts so that City can be given an opportunity to first give its consent or take such action that City may deem appropriate to protect such data or other information from disclosure. All data must continue to be subject to the confidentiality agreements of this Agreement. Consultant or its subconsultants assume all liability to maintain the confidentiality of the data in its possession and agrees to compensate City if any of the provisions of this Section are violated by Consultant, its employees, agents or subconsultants. Solely for the purposes of seeking injunctive relief, it is agreed that a breach of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. Consultant agrees that the requirements of this Section must be incorporated into all subagreements entered into by Consultant. A violation of this Section may result in immediate termination of this Agreement without notice.

5.26 Personal Identifying Information-Data Security. Personal identifying information, financial account information, or restricted City information, whether electronic format or hard copy, must be secured and protected at all times by Consultant or its subconsultants. At a minimum, Consultant or its subconsultants must encrypt or password-protect electronic files. This includes data saved to laptop computers, computerized devices, or removable storage devices. When personal identifying information, financial account information, or restricted City information, regardless of its format, is no longer necessary,

the information must be redacted or destroyed through appropriate and secure methods that ensure the information cannot be viewed, accessed, or reconstructed. In the event that data collected or obtained by Consultant or its subconsultants in connection with this Agreement is believed to have been compromised, Consultant or its subconsultants must immediately notify City contact. Consultant agrees to reimburse City for any costs incurred by City to investigate potential breaches of this data and, where applicable, the cost of notifying individuals who may be impacted by the breach. Consultant agrees that the requirements of this Section must be incorporated into all subcontracts entered into by Consultant. It is further agreed that a violation of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. A violation of this Section may result in immediate termination of this Agreement without notice. The obligations of Consultant or its subconsultants under this Section must survive the termination of this Agreement.

5.27 Jurisdiction and Venue. This Agreement is made under, and must be construed in accordance with and governed by the laws of the State of Arizona without regard to the conflicts or choice of law provisions thereof. Any action to enforce any provision of this Agreement or to obtain any remedy with respect hereto must be brought in the courts located in Maricopa County, Arizona, and for this purpose, each Party hereby expressly and irrevocably consents to the jurisdiction and venue of such court.

5.28 Survival. All warranties, representations, and indemnifications by Consultant must survive the completion or termination of this Agreement.

5.29 Modification. Except as expressly provided herein to the contrary, no supplement, modification, or amendment of any term of this Agreement will be deemed binding or effective unless in writing and signed by the Parties.

5.30 Severability. If any provision of this Agreement or the application to any person or circumstance may be invalid, illegal or unenforceable to any extent, the remainder of this Agreement and the application will not be affected and will be enforceable to the fullest extent permitted by law.

5.31 Integration. This Agreement contains the full agreement of the Parties. Any prior or contemporaneous written or oral agreement between the Parties regarding the subject matter is merged and superseded.

5.32 Time is of the Essence. Time of each of the terms, covenants, and conditions of this Agreement is hereby expressly made of the essence.

5.33 Date of Performance. If the date of performance of any obligation or the last day of any time period provided for should fall on a Saturday, Sunday, or holiday for City, the obligation will be due and owing, and the time period will expire, on the first day after which is not a Saturday, Sunday or legal City holiday. Except as may otherwise be set forth in this Agreement, any performance provided for herein will be timely made if completed no later than 5:00 p.m. (Chandler time) on the day of performance.

5.34 Third Party Beneficiary. Nothing under this Agreement will be construed to give any

rights or benefits in the Agreement to anyone other than City and Consultant, and all duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of City and Consultant and not for the benefit of any other party.

5.35 Conflict in Language. All work performed must conform to all applicable City of Chandler codes, ordinances, and requirements as outlined in this Agreement. If there is a conflict in interpretation between provisions in this Agreement and those in **Exhibit "A"**, the provisions in this Agreement prevail.

5.36 Document/Information Release. Documents and materials released to Consultant, which are identified by City as sensitive and confidential, are City's property. The document/material must be issued by and returned to City upon completion of the services under this Agreement. Consultant secondary distribution, disclosure, copying, or duplication in any manner is prohibited without City's prior written approval. The document/material must be kept secure at all times. This directive applies to all City documents, whether in photographic, printed, or electronic data format.

5.37 Exhibits. The following exhibits are made a part of this Agreement and are incorporated by reference:

Exhibit A - Scope of Services / Schedule
Exhibit B - Compensation and Fees
Exhibit C - Insurance Requirements
Exhibit D - Special Conditions
Exhibit E – Federal Requirements (if applicable)

5.38 Special Conditions. As part of the services Consultant provides under this Agreement, Consultant agrees to comply with and fully perform the special terms and conditions set forth in **Exhibit "D"**, which is attached to and made a part of this Agreement.

5.39 Non-Discrimination and Anti-Harassment Laws. Consultant must comply with all applicable City, state, and federal non-discrimination and anti-harassment laws, rules, and regulations.

5.40 Licenses and Permits. Beginning with the Effective Date and for the full term of this Agreement, Consultant must maintain all applicable City, state, and federal licenses and permits required to fully perform Consultant's services under this Agreement.

5.41 Warranties. Consultant must furnish a one-year warranty on all work and services performed under this Agreement. Consultant must furnish, or cause to be furnished, a two-year warranty on all fixtures, furnishings, and equipment furnished by Consultant, subconsultants or suppliers under this Agreement. Any defects in design, workmanship, or materials that do not comply with this Agreement must be corrected by Consultant (including, but not limited to, all parts and labor) at Consultant's sole cost and expense. All written warranties and redlines for as-built conditions must be delivered to City on or before City's final acceptance of Consultant's services under this Agreement.

5.42 Cooperative Purchasing Agreement (S.A.V.E. – Strategic Alliance for Volume Expenditures). In addition to City of Chandler and with the approval of Consultant, this Agreement may be extended for use by other municipalities, school districts, and government agencies of the State. Any such usage by other entities must be in accordance with the ordinance, charter, or procurement rules and regulations of the respective political entity.

5.43 Budget Approval into Next Fiscal Year. This Agreement will commence on the Effective Date and continue in full force and effect until it is terminated or expires in accordance with the provisions of this Agreement. The Parties recognize that the continuation of this Agreement after the close of the City's fiscal year, which ends on June 30 of each year, is subject to the City Council's approval of a budget that includes an appropriation for this item as an expenditure. The City does not represent that this budget item will be actually adopted. This determination is solely made by the City Council.

SIGNATURE PAGE TO FOLLOW

This Agreement will be in full force and effect only when it has been approved and executed by the duly authorized City officials.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the Effective Date.

"CITY"
CITY OF CHANDLER

_____
MAYOR

Recommended By:

_____
Andrew Goh, P.E.
CIP City Engineer

APPROVED AS TO FORM:

_____
City Attorney

ATTEST:

_____
City Clerk Seal

"CONSULTANT"
Wilson Engineers, LLC

_____ 3/16/21
Signature Date

Uday Laxman Gandhe
Print Name

Principal
Title

Uday.gandhe@wilson-engineers.com
Signer Email Address

EXHIBIT "A"
SCOPE OF SERVICES/SCHEDULE

WILSON ENGINEERS

CITY OF CHANDLER

WATER RECLAMATION INTERCONNECT FACILITY (WRSF)

DETAILED DESIGN SERVICES

EXHIBIT A – SCOPE OF SERVICES
CITY PROJECT NUMBER: WW 1903.203

March 15, 2021

TASK 100- PROJECT MANAGEMENT

The ENGINEER will perform various project management and monitoring activities throughout the project, as delineated in the following tasks and sub-tasks. The ENGINEER shall prepare and submit regular monthly invoices and shall include a summary of the work completed for each billing cycle. The ENGINEER shall prepare authorization for Use of Allowance and obtain CITY's approval prior to beginning of any allowance work.

Prepare and distribute agenda and minutes for each meeting. Agenda will be submitted to the CITY at least two (2) days prior to the meeting. Minutes will be submitted to the CITY no more than five (5) days following each meeting.

Task 101 - Project Kickoff Meeting: Conduct a project kickoff meeting approximately two (2) weeks following receipt of written NTP from the CITY. Meeting objectives will be to review the various draft submittals (including the project schedule and Project milestones); and coordinate the schedule of project meetings anticipated throughout the Project.

Task 102 - Project Meetings: Conduct monthly project meetings with CITY representatives throughout the Project to keep the CITY informed of the project progress and obtain input and direction as required. The monthly meeting objectives will include the presentation of alternative evaluations for CITY review and approval; results from data collection, and other outstanding project issues. Conduct project meetings with other project stakeholders to discuss project progress and obtain input. It is anticipated that intake structure coordination would be required with the Salt River Project (SRP) and is included in this task. The anticipated number of planned monthly meetings during this phase shall be fifteen and number of anticipated meetings with SRP is three, exclusive of the project kickoff meeting.

Task 103 - Project Workshops: Conduct additional coordination meetings and workshops with CITY and other project stakeholders as necessary to obtain timely input and feedback on the progression of the Project, including key interaction with CITY operations and maintenance (O&M) staff regarding process alternative evaluations. A total of three Project Workshops are anticipated for the project.

Deliverables: Meeting Agenda and Summary Notes (electronic copies)

Task 104 - Project Schedule: Develop and maintain a project progress schedule during the Project. The schedule will be developed in MS Project format. Project timelines, along with Identification of task inter-relationships, will be included. Schedule will include both original baseline and actual progress. A draft baseline project schedule will be submitted to the CITY for review and approval. The project schedule will be updated monthly to be reviewed at project meetings.

Deliverables: Draft and Final Baseline Project Schedule and Monthly Updates (electronic copies)

TASK 200- PRELIMINARY DESIGN

The Preliminary Design Report (PDR) developed under this Task will include preliminary design of items for the WRSF to proceed with detailed design on this project. The preliminary design will include development of process and equipment sizing, review of any alternatives; review applicable codes, standards, design criteria; and the capital and annual O&M cost estimates for each item selected for the project. The preliminary design will be the basis for the preparation of detailed design plans and specifications (Task 300). It is anticipated that the treatment process will include a Raw Water Pump Station, Raw Water Force main, Membrane Pre-treatment Facilities, Membrane Treatment and all membrane ancillary facilities such as chemical storage and feed facilities, blowers air supply system, associated electrical and controls, and disinfection a system. Other improvements will include yard piping, electrical and instrumentation infrastructure for the Facility and other miscellaneous improvements such as pavement, grading and drainage design. The following tasks describe the specific efforts associated with the Preliminary Design development.

Task 201 – Preliminary Design Report: The ENGINEER will provide summary description for new facilities that have been determined to be included in this project. The ENGINEER shall advance the design concepts and provide preliminary design criteria, document the preliminary alternatives, schematics, layouts, and criteria developed and evaluated in previous tasks into an overall combined Preliminary Design Report for both facilities. The PDR shall include the following elements:

- Executive summary that briefly summarizes the project elements identifying the reasons for decisions that were made (for project elements) to be included as part of this project.
- Process flow diagrams and schematics for the treatment processes, including preliminary hydraulic profile.
- Compilation of the anticipated preliminary design criteria for the treatment process and ancillary facilities, compiled from the preliminary criteria developed under previous tasks.
- Preparation of a budgetary-level preliminary opinion of probable construction cost with project-related administrative, general conditions, bonds, insurance and other indirect costs (including design and construction management related fees) will be included to determine a total project cost estimate.

Overall purpose of the Preliminary Design Report is to identify and finalize key design decisions to transition into detailed design. The draft PDR will be submitted to CITY for review. Along with the PDR, a 30% level design drawings will also be submitted for City's review (30% Progress Submittal are discussed below). Upon receipt of comments, the ENGINEER will make appropriate revisions and submit a final PDR to the CITY.

Deliverables: Draft and Final Preliminary Design Report (6 copies each and electronic copy)

Task 202 Drainage Report: The ENGINEER will update the current Drainage Report and preliminary Grading and Drainage Plan to document the site drainage conditions for any new structures or facilities that will be built as part of this project. The Drainage Report will be submitted to the CITY along with the Agency Review submittal.

Deliverables: Draft and Final Drainage Report (electronic copies)

TASK 300 DETAILED DESIGN

The ENGINEER will prepare detailed construction documents for the Project. In the event the City determines to select a CMAR for the project, the documents will be used by the CMAR to prepare the construction cost model and corresponding GMP, project schedule, equipment and subcontractor procurement; as well as by the regulatory agencies to issues applicable permits for the construction and

operation of the Project. Alternatively, the detailed design documents can be used for procuring the contractor using the bid method.

Preparation of construction drawings and technical specifications will be as follows:

1. Drafting and CADD Standards: The organization and preparation of construction drawings shall be in accordance with the City drafting guidelines.
3. Technical Specifications: Technical specifications shall be prepared using the City's Standard Specifications Guide Documents, Divisions 1 through 17.

The Engineer will prepare progress submittal packages when the design, drawings, and specifications are considered 30, 60, and 90 percent (%) complete as described in this scope of services. Two (2) copies of the progress submittal packages will be included with each submittal for City review. The level of detail on the drawings in each progress submittal should be as given below.

Task 301 - Thirty Percent (30%) Progress Submittal

The design scheme is decided and working drawings are prepared. These drawings are used to convey information about the Project's overall appearance and configuration to the City and other Project stakeholders. These drawings are not intended for construction. The lists of drawings and specifications for each discipline are ready for City review.

1. Process and hydraulic design:
    - Hydraulics: Hydraulic analysis required for design (e.g., pipeline hydraulics, pump selection, etc) is complete and calculations are checked.
    - Process: wastewater process design (e.g., chemical dosage, specialty equipment selection, etc) all process calculations are completed and checked.
2. Civil:
    - Existing utilities are plotted; existing facility horizontal controls and elevations are confirmed with current survey.
    - All unit treatment process structures, as required in design, are located.
    - Preliminary drawings include overall site layout, large diameter pipe, yard piping and major grading elements.
    - Demolition plans, as applicable, are prepared.
    - Conceptual drawings showing drainage patterns and means for control and disposal.

3. Structural/Architectural:

- The detailed design approach for each structural component is established.
- Layout plan drawings and principal sections are started.
- Architectural concepts defined.
- Preliminary architectural plans and sections are prepared.

4. Electrical:

- Preliminary single line diagrams of major distribution system and MCCs are prepared.
- Preliminary electrical room arrangements are prepared.
- Partial equipment control schematic diagrams are prepared.
- Preliminary electrical plans showing locations of switch gear, conduit runs and main motor control centers are prepared.

6. Instrumentation:

Process and Instrumentation Devices (P&ID) should be developed to a degree which depicts the following:

- General instrumentation and control philosophy.
- Type of instrumentation.
- All primary and secondary control devices.
- Process area designation, drawing and equipment numbering system identified.

Preliminary Process Control strategies should be complete. Process control strategies shall be discussed and reviewed with the plant personnel at a project workshop prior to the 30% submittal. The draft process control strategies shall be submitted to the City prior to the meeting to provide sufficient time for City staff review.

No specification submittal will be required at this time. The 30% Progress Submittal will be made along with the PDR discussed in Task 200 above.

Deliverables: Half size drawings (6 copies and a pdf copy). General instrumentation philosophy document and conceptual process overview schematic.

Task 302 - Sixty Percent (60%) Progress Submittal

The drawings and specifications for each discipline are coordinated and have progressed where the design intent is established and must show the work in sufficient detail that a contractor can recognize elements

and requirements for construction. All comments from the 30% submittal are satisfactorily addressed. The set of drawings will include a cover sheet and an index sheet.

1. Civil:
   - All facilities are shown and located.
   - Grading plans and demolition plans are substantially complete.
   - Plan sheets are substantially complete.
   - Design calculations are complete.
   - Draft specifications are assembled.

3. Architectural:
   - Floor, roof, and ceiling plans are near complete.
   - Elevations and sections are essentially complete.
   - Door, window, and finish schedules are partially complete.
   - Architectural detailing is partially complete.
   - Draft specifications are assembled.

4. Structural:
   - Foundation plans are essentially complete.
   - Other plans and sections are partially complete.
   - Design calculations are complete.
   - Structural detailing is partially complete.
   - Draft specifications are assembled.

5. Mechanical (includes process equipment, plumbing, HVAC, and fire suppression):
   - Mechanical plans and sections are essentially complete.
   - Mechanical details are partially complete.
   - Equipment and valves are included in equipment schedules. Piping schedules are complete.
   - Specifications for the major equipment items are essentially complete.
   - Design calculations are complete.

6. Electrical:
   - Single line diagrams and motor control diagrams are partially complete.
   - Power and control plans are partially complete.

- Panel, light fixtures schedules are complete.
- Duct bank and pull box details are partially complete.
- Lighting and receptacle plans are partially complete.
- Specifications for major equipment items have been drafted.
- Design calculations are complete.
- Control schematic diagrams are partially complete.

7. Instrumentation:
   - P&IDs are essentially complete.
   - Process Control Strategies are essentially complete.
   - I & C details are partially complete.
   - Specifications for instrumentation devices are started.

The ENGINEER shall finalize the process control narratives for the Water Reclamation Interconnect Facility (RWIF), prior to completion of the 60% detailed design documents and after a detailed review of the narratives with the City staff.

Deliverables: Half size drawings (6 copies and a pdf copy). Draft specifications for major equipment for the project along with a list of equipment vendors for City's review. Process Control Descriptions for all processes that are included in the project including descriptions for any new processes that are added.

Task 303 - Ninety Percent (90%) (Agency Review) Progress Submittal

Drawings and details in all disciplines should be complete. Specifications should be essentially complete. Design calculations in all disciplines shall be essentially complete and checked. Comments on design, drawings and specifications from previous reviews must have appropriate responses before the 90% progress submittal is submitted. Comments from both the 30 and 60 percent reviews by City staff, any constructability reviews, and review comments from regulatory agencies must have appropriate responses or actions.

Deliverables: Half size drawings (6 copies and a pdf copy), 3 full-size copies to be submitted to agencies for review.

Task 304 - Final (100%) Submittal

Drawings and specifications should be complete and accepted by the City. All construction documents should be complete and ready for construction pricing of the work.

Deliverables: Half size drawings (6 copies, 1 full size copy and pdf and AutoCAD files), 1 full-size copy.

Task 305 – Maintenance of Plant Operations (MOPO)

The Maintenance of Plant Operations is a plan or series of plans that describe how to maintain operation of the existing facility when it is time to bring a newly constructed facility on line. The Engineer will prepare a draft MOPO list during preliminary design and follow up and assist the CMAR during detailed design to develop specific MOPO activities. The CMAR contractor will take lead on this task and with assistance from the ENGINEER.

The preliminary MOPO list will identify areas of construction of the proposed facility that interfaces with the existing facilities. The preliminary MOPO list will be prepared with the 30% Submittal and included in the preliminary design report. The preliminary MOPO list will be used as the basis for development of the MOPO activities during the detailed design phase.

MOPO development will occur during preparation of drawings and specifications and the ENGINEER's will include the following:

- Identification of construction interfaces with the existing facilities that affect existing operations.
- Assist CMAR in developing draft MOPOs with input from City operation and maintenance staff.
- Consider possible effects on design from the draft MOPO.
- Incorporate MOPO requirements into the drawings and specifications.
- Participate in a site walk-through with CMAR and the City operation and maintenance staff. Assist the CMAR in determining the MOPO durations, constraints, and shared responsibilities for MOPOs.
- Review MOPOs prepared by the CMAR, incorporate the MOPOs in the specifications.

The MOPO list for City review will be included in the 60% and 90% Submittals. The final MOPOs developed by the CMAR must have City approval and will be included in the construction documents with the final submittal.

TASK 400- PERMITTING ASSISTANCE

The ENGINEER will perform permitting coordination activities throughout the Design Phase, as delineated in the following tasks and sub-tasks. Specific permits, plans and reviews anticipated under this Project include:

- City of Chandler- Building Permit (and Building Plan Review)
- City of Chandler- Civil Plan Review
- MCESD- Approval to Construct
- ADEQ Minor Amendment Application
- ADWR Permitting

401 - City of Chandler Coordination: The ENGINEER shall develop applicable permit applications and submit preliminary supporting documents as part of the CITY's Pre-Tech Review process (at the 30 or 60 percent design stage). Submit applicable Interim Submittal Review and Agency Review documents and associated reports, plans and supporting information to the CITY's Development Services and Fire Departments for Building, Site, Civil and Fire plan review approvals accordingly. Provide additional information as requested from CITY plan review staff, as appropriate.

NOTE: It is assumed that all CITY permit fees for the Project will be paid directly by the CITY, and therefore, are not included within this scope of services.

Deliverables: Draft and Final Permit Applications and Supporting Documentation

402 - MCESD Coordination: Develop the Agency Review document set(s) and associated permit application in accordance with the Permitting Assistance Plan and submit to MCESD for non-expedited review to obtain the Approval to Construct (ATC). It is assumed that one (1) review meeting will be conducted with MCESD to discuss any comments received from the County accordingly.

NOTE: The subsequent Approval of Construction (AOC) submission is not included within this scope of services, but will be included under a subsequent Construction Phase Services contract (if desired by the CITY).

Deliverables: Draft and Final Permit Applications and Supporting Documentation

403 - ADEQ APP Coordination: The City intends to permit this facility as a new facility from the Airport WRF. It is anticipated that a new APP permit will need to be prepared and submitted for review by the ADEQ. In addition to the new facility permit, five existing APP permits will need to be amended to include flows from the new facility. All five Minor Amendments applications will be prepared and

submitted for review by ADEQ. The ENGINEER will support and address any questions or comments received from the application process and will revise applications as necessary to obtain permits from the ADEQ.

NOTE: It is assumed that applicable permit application review fees will be paid by the ENGINEER.

Deliverables: Draft and Final Permit Applications and Supporting Documentation

403 - ADWR Coordination: Assist the City coordinate with the ADWR and support the City with any paperwork and permitting work necessary for the (WRSF).

TASK 500- CMAR COORDINATION

The ENGINEER will continue to assist the CITY with CMAR coordination for this project.The scope of work for this task. The City wants to incorporate a contractor's perspective and input to the Project planning and design decisions and have the ability to select certain components of the Project for construction prior to full completion of design.

Design Phase services by the CM at Risk may include:

- Provide a conceptual and progressively more detailed cost model to confirm budgets and guide design decisions;
- Provide detailed independent cost estimating and knowledge of market conditions;
- Provide alternate systems evaluation and constructability studies;
- Provide long-lead procurement studies and possibly initiate procurement of long-lead items;
- Provide procurement services for selection of subcontractors and suppliers;
- Prepare the Guaranteed Maximum Price (GMP) for construction;

The Engineer's effort to coordinate with the CM at Risk will consist of:

- Solicit CM at Risk input during design development as appropriate;
- Provide information for cost estimating;
- Provide assistance with long-lead procurement activities;
- Evaluate alternative systems suggested by CM at Risk;
- Respond to constructability review comments;
- Attend subcontractor pre-selection meetings conduct by CM at Risk;
- Assist and review during GMP development;

- Perform GMP proposal review and prepare recommendation to City;
- Assist City with review of the subcontractor/supplier bid and selection process.

The City may request the CM at Risk to proceed with early construction of certain Project features before full Project design is complete and request a GMP for that portion of the work. The Engineer will prepare the appropriate construction documents for such work. This may include;

- Early Procurement of Long-Lead Equipment Items that will be included consists of Membrane Equipment and ancillary equipment for the project
- Balance of Work

In addition to coordination with the CMAR, attend meetings with the third party cost consultant and provide them with the project submittals to facilitate their review of CMAR's GMP. The ENGINEER will attend up to a total of four meetings with the cost consultant for two separate GMP packages.

NOTE: A parallel cost estimate will not be performed as the CITY intends to hire a third-party cost estimator for additional cost model and GMP validation.

TASK 600 ALLOWANCES

Task 601 Geotechnical Investigation: The ENGINEER will perform a geotechnical investigation with assistance from sub-consultant, which will include the drilling and sampling of up to four (4) test borings to determine subsoil conditions and provide samples for laboratory testing. The ENGINEER will submit draft Geotechnical Investigation Report to the CITY for review. The ENGINEER will further coordinate and consult with geotechnical sub-consultant to obtain geotechnical design data for construction any new facilities. The geotechnical investigation will be limited to the improvements identified for the WRSF at the Airport WRF.

The CMAR shall review the Geotechnical Investigation Report and supporting data, and coordinate any additional investigations that they may determine to be necessary to be borne directly by the CMAR.

Deliverables: Draft and Final Geotechnical Investigation Report (electronic copies)

Task 602 Topographical Site Survey: The ENGINEER with assistance from a sub-consultant will perform a site topographical survey to document the current conditions and surface features of the area proposed for the new WRSF. Site survey will be based on City of Chandler datum and will include

existing spot elevations for use in developing new contours; location and establishment of perimeter property lines based on existing legal descriptions, available survey reviews, and existing and future right-of-ways; and identification of above-ground structures, other identified facilities, and existing trees. Site survey will also include identification of staked geotechnical borings and horizontal grid development for design.

Deliverables: Draft Site Topographical Maps (electronic copies)

Task 603 – Structural Engineering Services: The ENGINEER will provide structural engineering services including structural drawings and specifications as required to support the preliminary and detailed design services for the WRSF at the Airport WRF.

Deliverables: Structural Drawings and Specifications (electronic copies)

Task 604 - Architectural and HVAC Services: The ENGINEER will provide architectural services via a sub-consultant to that includes architectural drawings and specifications as required to support the premanufactured buildings that are proposed for the project. The ENGINEER will provide HVAC engineering services including HVAC / Plumbing drawings and specifications as required for detailed design services for the project.

Deliverables: Structural Drawings and Specifications (electronic copies)

Task 605 – Additional Engineering Services: The ENGINEER will require assistance from the membrane vendors to provide detailed engineering drawings as well as the details of the membrane system elements that will determine the final vendor selection and preparation of the specifications for the selected vendor. This allowance will be used to obtain additional information which will be used for the purposes of finalizing the procurement documents.

END OF SCOPE OF WORK

EXHIBIT "B"
COMPENSATION AND FEES

WILSON ENGINEERS

EXHIBIT "B-1"
Lump Sum Cost Per Task

TASK DESCRIPTION			SUBTOTAL
1. Project Management			**$ 109,280.00**
	Kick off Meeting	*$ 4,590.00*	
	Project Meetings	*$ 80,160.00*	
	Project Workshops	*$ 22,260.00*	
	Project Schedule	*$ 2,270.00*	
2. Preliminary Design Development			**$ 138,630.00**
	Preliminary Design Report	*$ 111,320.00*	
	Drainage Reports	*$ 27,310.00*	
3. Detailed Design Development			**$ 1,007,640.00**
	30% Progress Submittal	*$ 162,640.00*	
	60% Progress Submittal	*$ 250,180.00*	
	90% Progress Submittal (Agency Review Set)	*$ 391,340.00*	
	Final (100%) Contract Documents	*$ 165,680.00*	
	MOPOs	*$ 37,800.00*	
4. Permitting			**$ 132,970.00**
	City Permitting	*$ 2,230.00*	
	MCESD Permitting	*$ 25,840.00*	
	ADEQ APP Coordination	*$ 75,060.00*	
	ADWR Coordination	*$ 29,840.00*	
5. Project Delivery Method Assistance			**$ 46,140.00**
	Coordination with CMAR	*$ 46,140.00*	
6. Other Direct Costs			**$ 210,000.00**
	Geotechnical Investigation	*$ 10,000.00*	
	Topographical Site Survey	*$ 20,000.00*	
	Structural Engineering Services	*$ 105,000.00*	
	Architectural Services	*$ 15,000.00*	
	HVAC and Plumbing Services	*$ 10,000.00*	
	Additional Engineering Allowance	*$ 50,000.00*	
7. Owner's Allowance			**$ 165,000.00**
		TOTAL COST:	**$ 1,809,660.00**

WILSON ENGINEERS

EXHIBIT "B-2"
Hours and Rates

	Principal	Sr. PM	Sr. PM (E/I&C)	Sr. Engr.	Project Engineer / Proj. Prof	Lead EI&C	CADD Technicians	Admin	< PROJECT ROLE	
	Uday Gandhe	*Sreeram Rengaraj, Lopez, G.*	*Mike C., Joe S.*	*Damien T., Sri Y., Ashish A*	*Kyleigh P., Sean Z., Megan S., Jeff J., Elvin R., Phani P.*	*John S., Dave D.*	*Kam C., Jeremy J., Julius C.*	*Mani S., Monica F., Shey A.*	*< NAME OF PERSON*	
	$ 215.00	$ 195.00	$ 195.00	$ 170.00	$ 145.00	$ 160.00	$ 115.00	$ 95.00	< HOURLY RATES	
TASK DESCRIPTION									**TOTAL HOURS PER TASK**	
1. Project Management	**36**	**128**	**32**	**128**	**216**	**8**	**96**	**52**		**696**
Kickoff Meeting	2	4	0	4	16	0	0	4	*30*	
Project Meetings	24	80	24	96	160	8	88	40	*520*	
Project Workshops	8	40	8	24	40	0	8	4	*132*	
Project Schedule	2	4	0	4	0	0	0	4	*14*	
2. Preliminary Design Report	**18**	**120**	**24**	**128**	**320**	**40**	**200**	**96**		**946**
Preliminary Design Report	16	80	24	120	240	40	160	80	*760*	
Drainage Report	2	40	0	8	80	0	40	16	*186*	
3. Detailed Design Development	**40**	**592**	**388**	**800**	**2600**	**692**	**1288**	**380**		**6780**
30% Progress Submittal	4	80	60	120	480	120	200	24	*1088*	
60% Progress Submittal	8	160	88	200	600	200	360	60	*1676*	
90% Progress Submittal (Agency Review Set)	16	240	160	320	980	240	520	160	*2636*	
Final (100%) Contract Documents	4	88	80	120	420	108	192	120	*1132*	
MOPOs	8	24	0	40	120	24	16	16	*248*	
4. Permitting	**32**	**100**	**0**	**164**	**336**	**0**	**160**	**122**		**914**
City Permitting	0	4	0	4	4	0	0	2	*14*	
MCESD Permitting	8	24	0	40	64	0	16	16	*168*	
ADEQ APP Coordination	16	48	0	80	188	0	120	80	*532*	
ADWR Coordination	8	24	0	40	80	0	24	24	*200*	
5. Project Delivery Method Assistance	**4**	**40**	**8**	**80**	**80**	**24**	**40**	**24**		**300**
Coordination with CMAR	4	40	8	80	80	24	40	24	*300*	
6. Other Direct Costs	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**		**0**
7. Owner's Allowance										
TOTAL HOURS:	130	980	452	1300	3552	764	1784	674		**9636**

EXHIBIT "C"
INSURANCE REQUIREMENTS

1. General.

1.1 At the same time as execution of this Agreement, Consultant must furnish City a certificate of insurance on a standard insurance industry ACORD form. The ACORD form must be issued by an insurance company authorized to transact business in the State of Arizona possessing a current A.M. Best, Inc. rating of A-7, or better and legally authorized to do business in the State of Arizona with policies and forms satisfactory to City. Provided, however, the A.M. Best rating requirement will not be deemed to apply to required Workers' Compensation coverage.

1.2 Consultant and any of its subconsultants must procure and maintain, until all of their obligations have been discharged, including any warranty periods under this Agreement are satisfied, the insurances set forth below.

1.3 The insurance requirements set forth below are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement.

1.4 City in no way warrants that the minimum insurance limits contained in this Agreement are sufficient to protect Consultant from liabilities that might arise out of the performance of the Agreement services under this Agreement by Consultant, its agents, representatives, employees, subconsultants, and Consultant is free to purchase any additional insurance as may be determined necessary.

1.5 Failure to demand evidence of full compliance with the insurance requirements in this Agreement or failure to identify any insurance deficiency will not relieve Consultant from, nor will it be considered a waiver of its obligation to maintain the required insurance at all times during the performance of this Agreement.

1.6 Use of subconsultants: If any work is subcontracted in any way, Consultant must execute a written contract with subconsultant containing the same Indemnification Clause and Insurance Requirements as City requires of Consultant in this Agreement. Consultant is responsible for executing the Agreement with the subconsultant and obtaining Certificates of Insurance and verifying the insurance requirements.

2. Minimum Scope and Limits of Insurance. Consultant must provide coverage with limits of liability not less than those stated below.

2.1 *Professional Liability.* If the Agreement is the subject of any professional services or work performed by Consultant, or if Consultant engages in any professional services or work adjunct or residual to performing the work under this Agreement, Consultant must maintain Professional Liability insurance covering errors and omissions arising out of the work or services performed by Consultant, or anyone employed by Consultant, or anyone whose acts, mistakes, errors and omissions Consultant is legally liable, with a liability limit of $1,000,000 each claim and $2,000,000 all claims. In the event the Professional Liability

insurance policy is written on a "claims made" basis, coverage must extend for 3 years past completion and acceptance of the work or services, and Consultant, or its selected Design Professional will submit Certificates of Insurance as evidence the required coverage is in effect. The Design Professional must annually submit Certificates of Insurance citing that the applicable coverage is in force and contains the required provisions for a 3 year period.

2.2 *Commercial General Liability-Occurrence Form.* Consultant must maintain "occurrence" form Commercial General Liability insurance with a limit of not less than $2,000,000 for each occurrence, $4,000,000 aggregate. Said insurance must also include coverage for products and completed operations, independent contractors, personal injury and advertising injury. If any Excess insurance is utilized to fulfill the requirements of this paragraph, the Excess insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

2.3 *Automobile Liability-Any Auto or Owned, Hired and Non-Owned Vehicles*
Vehicle Liability: Consultant must maintain Business/Automobile Liability insurance with a limit of $1,000,000 each accident on Consultant owned, hired, and non-owned vehicles assigned to or used in the performance of Consultant's work or services under this Agreement. If any Excess or Umbrella insurance is utilized to fulfill the requirements of this paragraph, the Excess or Umbrella insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

2.4 *Workers Compensation and Employers Liability Insurance:* Consultant must maintain Workers Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Consultant employees engaged in the performance of work or services under this Agreement and must also maintain Employers' Liability insurance of not less than $1,000,000 for each accident and $1,000,000 disease for each employee.

3. Additional Policy Provisions Required.

3.1 *Self-Insured Retentions or Deductibles*. Any self-insured retentions and deductibles must be declared and approved by City. If not approved, City may require that the insurer reduce or eliminate any deductible or self-insured retentions with respect to City, its officers, officials, agents, employees, and volunteers.

3.1.1. Consultant's insurance must contain broad form contractual liability coverage.

3.1.2. Consultant's insurance coverage must be primary insurance with respect to City, its officers, officials, agents, and employees. Any insurance or self-insurance maintained by City, its officers, officials, agents, and employees will be in excess of the coverage provided by Consultant and must not contribute to it.

3.1.3. Consultant's insurance must apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

3.1.4. Coverage provided by Consultant must not be limited to the liability assumed under the indemnification provisions of this Agreement.

3.1.5. The policies must contain a severability of interest clause and waiver of subrogation against City, its officers, officials, agents, and employees, for losses arising from Work performed by Consultant for City.

3.1.6. Consultant, its successors and or assigns, are required to maintain Commercial General Liability insurance as specified in this Agreement for a minimum period of 3 years following completion and acceptance of the Work. Consultant must submit a Certificate of Insurance evidencing Commercial General Liability insurance during this 3 year period containing all the Agreement insurance requirements, including naming City of Chandler, its agents, representatives, officers, directors, officials and employees as Additional Insured as required.

3.1.7. If a Certificate of Insurance is submitted as verification of coverage, City will reasonably rely upon the Certificate of Insurance as evidence of coverage but this acceptance and reliance will not waive or alter in any way the insurance requirements or obligations of this Agreement.

3.2. *Insurance Cancellation During Term of Contract/Agreement.*

3.2.1. If any of the required policies expire during the life of this Agreement, Consultant must forward renewal or replacement Certificates to City within 10 days after the renewal date containing all the required insurance provisions.

3.2.2. Each insurance policy required by the insurance provisions of this Agreement must provide the required coverage and must not be suspended, voided or canceled except after thirty (30) days prior written notice has been given to City, except when cancellation is for non-payment of premium, then ten (10) days prior notice may be given. Such notice must be sent directly to Chandler Law-Risk Management Department, Post Office Box 4008, Mailstop 628, Chandler, Arizona 85225. If any insurance company refuses to provide the required notice, Consultant or its insurance broker must notify City of any cancellation, suspension, non-renewal of any insurance within seven (7) days of receipt of insurers' notification to that effect.

3.3 City as Additional Insured. The policies are to contain, or be endorsed to contain, the following provisions:

3.3.1. The Commercial General Liability and Automobile Liability policies are to contain, or be endorsed to contain, the following provisions: City, its officers, officials, agents, and employees are additional insureds with respect to liability arising out of activities performed by, or on behalf of, Consultant including City's general supervision of Consultant; Products and Completed operations of Consultant; and automobiles owned, leased, hired, or borrowed by Consultant.

3.3.2. City, its officers, officials, agents, and employees must be additional insureds to the full limits of liability purchased by Consultant even if those limits of liability are in excess of those required by this Agreement.

EXHIBIT "D"
SPECIAL CONDITIONS

Standard Details and Specifications. Consultant must be familiar with City's latest revision of the MAG Specifications and MAG Standard Details as amended by City. City's current amendment to the MAG Specifications, part of City's Unified Development Manual, may be found and downloaded from City's website at http://www.chandleraz.gov/udm.

City Ownership of Project Documents. All work products (electronically or manually generated) including, but not limited to: plans, specifications, cost estimates, field notes, tracings, studies, investigations, design analyses, original drawings, original mylars, Computer Aided Drafting and Design (CADD) file diskettes which reflect all final drawings, and other related documents which are prepared in the performance of this Agreement (collectively referred to as "Documents") are to be and remain the property of City and are to be delivered to the Project Manager before the final payment is made to Consultant. In the event these Documents are altered, modified or adapted without the written consent of Consultant, which consent Consultant must not unreasonably withhold, City agrees to hold Consultant harmless to the extent permitted by law from the legal liability arising out of City's alteration, modification or adaptation of the Documents.

Re-use of Documents. The parties agree the documents, drawings, specifications and designs, although the property of City, are prepared for this specific project and are not intended nor represented by Consultant to be suitable for re-use for any other project. Any re-use without written verification or adaptation by Consultant for the specific purpose intended will be at City's sole risk and without liability or legal exposure to Consultant.

Patent Fees and Royalties. Consultant must pay all license fees and royalties and assume all costs incidental to the use, in the performance of the work or the incorporation in the work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Agreement for use in the performance of the work and if, to the actual knowledge of City, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed by City in the Agreement. Consultant must defend, indemnify and hold harmless City and anyone directly or indirectly employed by City from and against all claims, damages, losses, and expenses (including attorneys' fees) arising out of any infringement of patent rights or copyrights incidental to the use in the performance of the work, or resulting from the incorporation in the work of any invention, design, process, product, or device not specified in the Agreement, and must defend all such claims in connection with any alleged infringement of such rights.

License to City for Reasonable Use. With this Agreement, Consultant and its subconsultants hereby grant a license to City, its agents, employees, and representatives for an indefinite period of time to reasonably use, make copies, and distribute as appropriate the Documents, works or deliverables developed or created as a result of the Project and this

Agreement. This license also includes the making of derivative works.

Documents to Bear Seal. Consultant and its subconsultants must endorse by professional seal all plans, works, and deliverables prepared by each for this Agreement as required by state law.

1. Contract Worker Access Controls, Badge and Key Access Requirements. A Contract Worker from Consultant's firm must not be allowed to begin work in any City facility without: (A) The prior completion and City's acceptance of the required background screening; and (8) when required, the Contract Worker's receipt of a City issued badge. A badge will be issued to a Contract Worker solely for access to City facility(s) to which the Contract Worker is assigned. Each Contract Worker who enters a City facility must use the badge issued to the Contract Worker.

2. Badges. After receipt of the badge application, the Contract Worker will proceed to the Badging Office for processing of the badge application and issuance of the badge. City will not process the badge application until the Contract Worker satisfies the required Background Screening (as defined herein). The Contract Worker must comply with all requirements and furnish all requested information as requested by the Badging Office. Any and all fees associated with security badging will be assessed in compliance with Chandler City Code §4-22.

3. Key Access Procedures. If the Contract Worker's services require keyed access to enter a City facility(s), a separate key issue/return form must be completed and submitted by Consultant for each key issued.

4. Stolen or Lost Badges or Keys. Consultant must report lost or stolen badges or keys to City immediately. A new badge application or key issue form must be completed and submitted along with payment of the applicable fees prior to issuance of a new badge or key.
5. Return of Badges or Keys. All badges and keys are the property of City and must be returned to City at the Badging Office within one (1) business day of when the Contract Worker's access to a City facility is no longer required to furnish the services under this Agreement. Consultant must collect a Contract Worker's badge and key(s) upon the termination of the Contract Worker's employment; when the Contract Worker's services are no longer required at the particular City facility(s); or upon termination, cancellation or expiration of this Agreement.

6. Consultant's default under this Section must include, but is not limited to the following: (1) Contract Worker gains access to a City facility(s) without the proper badge or key; (2) Contract Worker uses a badge or key of another to gain access to a City facility; (3) Contract Worker commences services under this Agreement without the proper badge, key or Background Screening; (4) Contract Worker or Consultant submits false information or negligently submits wrong information to City to obtain a badge, key or applicable Background Screening; or (5) Consultant fails to collect and timely return

Contract Worker's badge or key upon termination of Contract Worker's employment, reassignment of Contract Worker to another City facility or upon the expiration, cancellation or termination of this Agreement. Consultant acknowledges and agrees that the access control, badge and key requirements in this Section are necessary to preserve and protect public health, safety and welfare. Accordingly, Consultant agrees to properly cure any default under this Section within three (3) business days from the date notice of default is sent by City. The parties agree that Consultant's failure to properly cure any default under this Section must constitute a breach of this Section. In addition to any other remedy available to City at law or in equity, Consultant must be liable for and must pay to City the sum of one thousand dollars ($1,000.00) for each breach by Consultant of this Section. The parties further agree that the sum fixed above is reasonable and approximates the actual or anticipated loss to City at the time and making of this Agreement in the event that Consultant breaches this Section. Further, the parties expressly acknowledge and agree to the fixed sum set forth above because of the difficulty of proving City's actual damages in the event that Consultant breaches this Section. The parties further agree that three (3) breaches by Consultant of this Section arising out of any default within a consecutive period of three (3) months or three (3) breaches by Consultant of this Section arising out of the same default within a period of twelve (12) consecutive months will constitute a material breach of this Agreement by Consultant and City expressly reserves all of its rights, remedies and interests under this Agreement, at law and in equity including, but not limited to, termination of this Agreement.

CHANDLER arizona
Community of Innovation

City Council Memorandum **Public Works & Utilities** **Memo No.** CP21-112

Date: April 19, 2021

To: Mayor and Council

Thru: Joshua H. Wright, Acting City Manager
Debra Stapleton, Assistant City Manager
John Knudson, Public Works and Utilities Director
Andrew Goh, Capital Projects Manager

From: Sandra Story, Engineering Project Manager

Subject: Construction Contract No. WA1903.401 and WA1908.401, with Achen-Gardner Construction, LLC, for the Arrowhead Water Production Facility Rehabilitation and Pecos Surface Water Treatment Plant Surge System

---

Proposed Motion:

Move City Council award Construction Contract No. WA1903.401 and WA1908.401 to Achen-Gardner Construction, LLC, for the Arrowhead Water Production Facility Rehabilitation and Pecos Surface Water Treatment Plant Surge System, in an amount not to exceed $6,053,000.

Background/Discussion:

This project is a continuation of the Public Works & Utilities Department's ongoing initiative to modernize and rehabilitate the City's older water production facilities and replace aging pipe infrastructure. The Arrowhead Water Production Facility (WPF), located at 426 N. Arrowhead Drive, was constructed in 1988 to support water needs in the city. Recent inspections have identified the need to replace the existing pumps and corroded pump cans and piping, improve the facility building, and upgrade the electrical system. In addition, approximately 2,200 feet of 12-inch pipe, from the Arrowhead WPF south to Chandler Boulevard, will be replaced due to age and poor condition. These improvements are necessary for the facility to reliably provide water service to the surrounding vicinity.

The Pecos Surface Water Treatment Plant (SWTP), located at 1475 East Pecos Road, was put into service in 1989. The 2018 Water, Wastewater, and Reclaimed Water Master Plan included the recommendation for installation of a surge suppression system at the Pecos SWTP to mitigate pressure fluctuations to the water distribution system. The water distribution system infrastructure is aging and more susceptible to main breaks due to these pressure fluctuations. Water main breaks caused by these pressure fluctuations are responsible for water loss and damage to surrounding infrastructure and personal property. This portion of the project will complete the installation of a surge tank and other necessary appurtenances at the Pecos SWTP.

The contract completion time for both locations is 365 calendar days following Notice to Proceed.

A related Professional Services Agreement with Wilson Engineers, LLC, for the Arrowhead WPF Rehabilitation and Pecos SWTP Surge System Construction Management Services, is also scheduled for this City Council meeting.

A related Professional Services Agreement with Wilson Engineers, LLC, for the Arrowhead WPF Rehabilitation Post Design Services, is also scheduled for this City Council meeting.

A related Professional Services Agreement with Black & Veatch, for the Pecos SWTP Surge System Post Design Services, is also scheduled for this City Council meeting.

Evaluation:

Seven (7) bids were opened on March 9, 2021. The bid results were as follows:

Contractor	Bid Total
Achen-Gardner Construction, LLC	$6,053,000
Garney Companies, Inc.	$6,084,960
J.R. Filanc Construction	$6,189,929
PCL Construction, Inc.	$6,706,328
MGC Contractors, Inc.	$7,274,170
FPS Civil, LLC	$7,395,267
Action Direct dba Redpoint Contracting	$8,531,240

Fiscal Impact

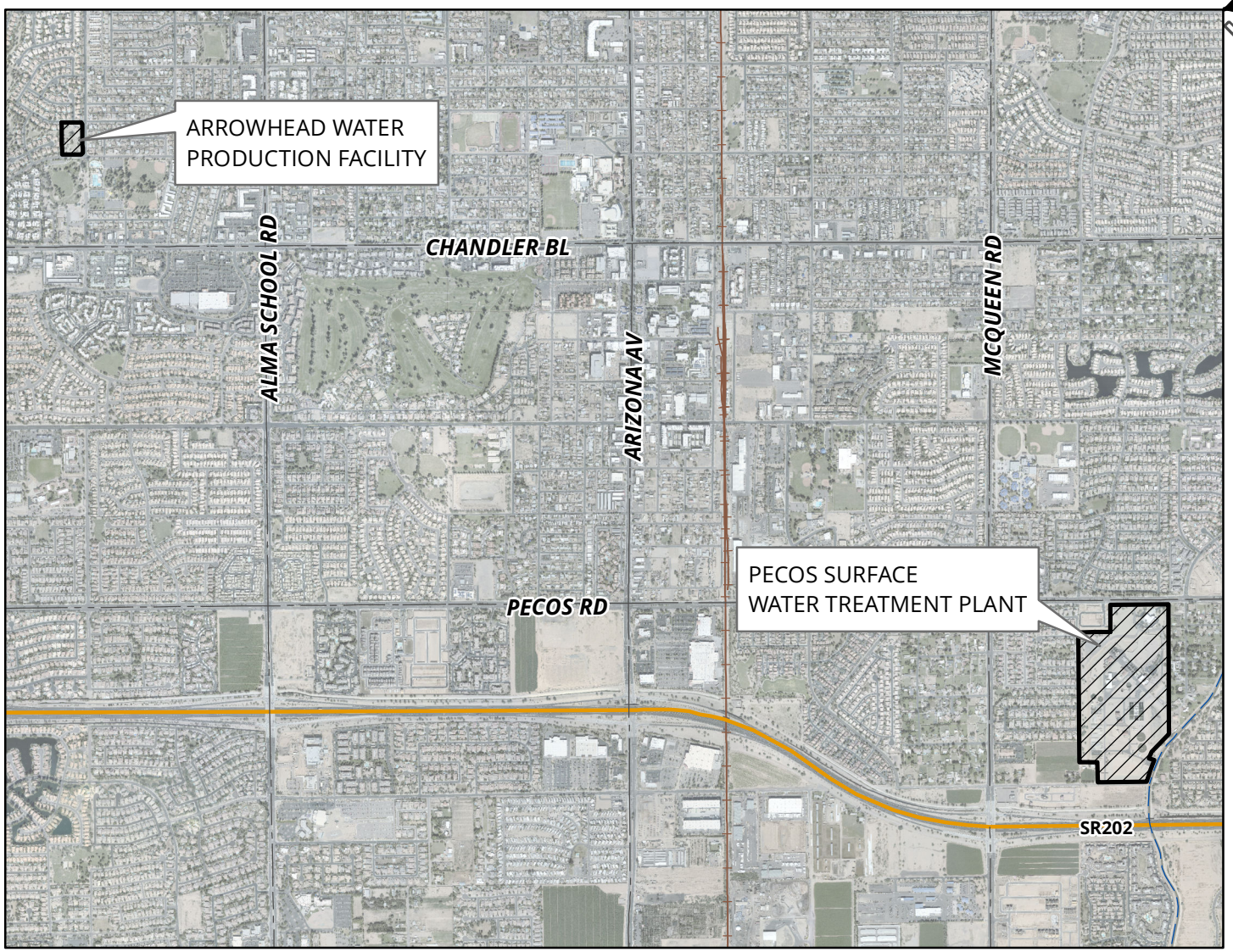
Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
605.3820.6714.6WA023	Water Operating	Water Main Replacements	$605,300	Y
601.3820.6718.6WA230	Water Bond	Water Production Facility Imprv	$4,418,690	Y
601.3820.6718.6WA210	Water Bond	Water Treatment Plant Imprv	$1,029,010	Y

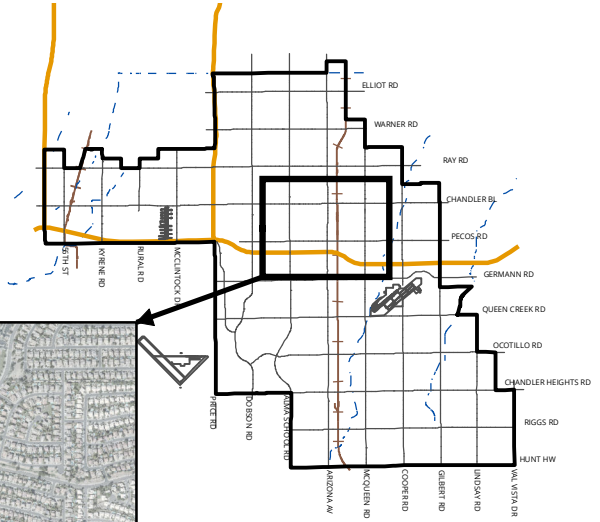
Attachments

Location Map

Contract - Achen Gardner

ARROWHEAD WATER PRODUCTION FACILITY REHABILITATION AND PECOS SURFACE WATER TREATMENT PLANT SURGE SYSTEM CONSTRUCTION PROJECT NO. WA1903.401 AND WA1908.401





MEMO NO. CP21-112

PROJECT SITE

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CITY OF CHANDLER, ARIZONA
PUBLIC WORKS & UTILITIES DEPARTMENT
CAPITAL PROJECTS DIVISION

CONSTRUCTION CONTRACT

ARROWHEAD WATER PRODUCTION FACILITY REHABILITATION AND PECOS SURFACE WATER TREATMENT PLANT SURGE SYSTEM

CITY PROJECT NO.: WA1903.401 and WA1908.401

MAYOR
Kevin Hartke

VICE MAYOR
Mark Stewart

COUNCIL
Matt Orlando **OD Harris**
Christine Ellis **René Lopez** **Terry Roe**

_____

Andrew Goh, P.E.
CIP City Engineer

CITY OF CHANDLER, ARIZONA

ARROWHEAD WATER PRODUCTION FACILITY REHABILITATION AND PECOS SURFACE WATER TREATMENT PLANT SURGE SYSTEM

CITY PROJECT NO.: WA1903.401 and WA1908.401

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CONSTRUCTION SERVICES CONTRACT
PROJECT NO.: WA1903.401 and WA1908.401

THIS CONTRACT is made and entered into on the _____ day of _____, 2021, by and between City of Chandler, an Arizona municipal corporation, hereinafter called "City" and the "Contractor" designated below (City and Contractor may individually be referred to as "Party" and collectively referred to as "Parties").

City and Contractor agree as follows:

ARTICLE 1 - PARTICIPANTS AND PROJECT

CITY: **City of Chandler**
CIP City Engineer: Andrew Goh
Phone: 480-782-3343
Email: andrew.goh@chandleraz.gov

CITY: **City of Chandler**
Construction Project Manager: Paul Ahlas
Phone: 480-782-3328
Email: paul.ahlas@chandleraz.gov

CONTRACTOR: **Achen-Gardner Construction, LLC**
550 South 79th St., Chandler, AZ 85226
Arizona ROC No.: 261745 & 261746
Federal Tax ID No.: 27-1394157
Business Organization: Limited Liability Company
State Where Organized: Arizona
Contractor Representative: Keven J. Nunez
Phone: 480-940-1300
Email: knunez@achen.com

DESIGN PROFESSIONAL: **Wilson Engineers and Black & Veatch**
9633 S. 48th St., Ste. 290
Phoenix, AZ 85044
Design Professional Representative: Phil Noonan
Phone: 480-893-8860
Email: Phil.noonan@wilson-engineers.com

PROJECT DESCRIPTION:

Construction for the rehabilitation of the Arrowhead Water Production Facility and approximately 2,400 feet of waterline replacement, and the installation of a surge tank at the Pecos Surface Water Treatment Plant.

PROJECT LOCATION:

Northwest Corner of Arrowhead and Erie and the Pecos Surface Water Treatment Plant

ARTICLE 2 - CONTRACT DOCUMENTS

2.1 CONTRACT DOCUMENTS

The Contract between City and Contractor will consist of the following Contract Documents:

1. This Construction Services Contract and all of its Exhibits, including Project Plans and Technical Specifications.
2. General Conditions and General Conditions Appendices, incorporated by reference.
3. Project Specific Special Provisions as set forth in Exhibit A, incorporated by reference.
4. Project Bid Proposal.

2.2 In the event of any inconsistency, conflict, or ambiguity between or among the Contract Documents, the Contract Documents will take precedence as described in Section 14.1.4 of the General Conditions.

2.3 DEFINITIONS

The definitions in Section 2 of the General Conditions apply to all the Contract Documents, including this Agreement. Additional definitions or defined terms applicable to all the Contract Documents for this Project, if any, include the following:

N/A

ARTICLE 3 - CONSTRUCTION SERVICES

3.1 GENERAL

3.1.1 Scope of Work. All terms and conditions are set forth in the Contract. Any terms and conditions and exceptions noted in the Contractor's proposal or other documents do not apply unless agreed to in this Contract or an approved addendum.

3.1.2 Contractor agrees this is a Unit Price Contract. Contractor agrees at its own cost and expense, to do all Work necessary required to fully, timely and properly complete the construction of the Project in strict accordance with the Contract Documents in a good and workmanlike manner, free and clear of all claims, liens, and charges whatsoever, in the manner and under the conditions specified, within the Contract time.

3.1.3 Contractor must provide all of the labor and materials, and perform the Work in accordance with Section 4 of the General Conditions. Some, but not all, of the major

components of the Construction Services and the corresponding subsections of Section 4 of the General Conditions are set forth below.

3.1.4 At all times relevant to this Contract and performance of the Work, the Contactor must fully comply with all Laws, Regulations, or Legal Requirements applicable to City, the Project and the Contract, including, without limitation, those set forth on attached Exhibit A.

3.1.5 Contractor must perform the Work under this Contract using only those firms, team members and individuals designated by Contractor consistent with Contractor's accepted Bid, or otherwise, approved by City pursuant to the General Conditions. No other entities or individuals may be used without the prior written approval of the Project Manager.

3.1.6 Contractor must comply with all terms and conditions of the General Conditions.

3.1.7 In the event of a conflict between this Contract and the General Conditions or an exhibit hereto or appendix thereto, the terms of this Contract will control.

3.1.8 Ownership of Work Product. Notwithstanding anything to the contrary in this Contract, all Work Product prepared or otherwise created in connection with the performance of this Contract, including the Work, are to be and remain the property of City. For purposes of this provision, "Work Product" will include all designs, drawings, plans, specifications, ideas, renderings and other information or matter, in whatever form created (e.g., electronic or printed) and in all media now known or hereinafter created. All Work Product will be considered Work Made for Hire as defined in the United States Copyright Act 17 U.S.C. § 101 (Copyright Act). If for any reason, any such Work is found not to be a Work Made for Hire, Contractor hereby transfers and assigns ownership of the copyright in such Work to City. The rights in this Section are exclusive to City in perpetuity.

3.2 CONTRACTOR'S PRE-CONTRACT AND PRE-WORK DELIVERABLES

3.2.1 The Contractor must provide the Deliverables in accordance with Section 4.2 of the General Conditions.

3.2.2 Any additional items which Contractor must deliver to City prior to commencing the Work on this Project, if any, include the following:

N/A

3.3 PRE-CONSTRUCTION CONFERENCE

Contractor must attend the Pre-Construction Conference in accordance with Section 4.3 of the General Conditions.

3.4 **PERFORMANCE OF THE WORK (INCLUDING FIELD MEASUREMENTS, SUBCONTRACTORS, AND SUPPLIERS)**

Contractor must perform the Work in accordance with Section 4.4 of the General Conditions.

3.5 **CONTROL OF THE PROJECT SITE**

Contractor must control and maintain the Project Site in accordance with Section 4.5 of the General Conditions.

3.6 **PROJECT SAFETY**

Contractor must implement and enforce Project safety in accordance with Section 4.6 of the General Conditions.

3.7 **MATERIALS QUALITY, SUBSTITUTIONS AND SHOP DRAWINGS**

Contractor must provide materials testing and submit substitute materials and Shop Drawings in accordance with Section 4.7 of the General Conditions.

3.8 **PROJECT RECORD DOCUMENTS**

Contractor must maintain and make available the Project Record Documents in accordance with Section 4.8 of the General Conditions.

3.9 **WARRANTY AND CORRECTION OF DEFECTIVE WORK**

Contractor must provide warranties and correct defective Work in accordance with Section 4.9 of the General Conditions.

ARTICLE 4 - CITY RESPONSIBILITIES

4.1 City will have the responsibilities, and provide the information specified in, and subject to the conditions set forth in, Section 5 of the General Conditions.

4.2 Additional services to be provided or responsibilities assumed, by City, if any, are listed below:

N/A

4.3 Additional information to be provided by City, if any, is listed below:

N/A

ARTICLE 5 - CONTRACT TIME

5.1 **GENERAL**

5.1.1 The total Contract Duration is **365** Calendar Days (including Substantial Completion by **335** Calendars Days and Final Acceptance by **30** Calendar Days).

5.1.2 The Contract Time will start with the Notice to Proceed (NTP) and end with Final Acceptance, as set forth in Article 5.4 below.

5.1.3 The Contract Time will be as set forth in the Project Schedule. Contractor agrees that it will commence performance of the Work and complete the Project through Final Acceptance within the Contract Time.

5.1.4 Time is of the essence of this Contract for the Project, and for each phase and designated Milestone thereof.

5.1.5 Failure on the part of Contractor to adhere to the approved Project Schedule will be deemed a material breach and sufficient grounds for termination of this Contract by City.

5.2 PROJECT SCHEDULE

5.2.1 The Project Schedule will be updated and maintained throughout Contractor's performance under this Contract in accordance with Section 6.2 of the General Conditions.

5.2.2 Work must be completed to meet the following milestones after the Notice to Proceed:

	Milestone		Time	Liquidated damages for delay	
1.	N/A	within	days	$	per calendar day

5.3 SUBSTANTIAL COMPLETION

Substantial Completion must be achieved no later than the Substantial Completion Date set forth in the Project Schedule. Substantial Completion will be determined in accordance with Section 6.3 of the General Conditions.

5.4 FINAL ACCEPTANCE

5.4.1 Final Acceptance will be obtained within the time period set forth in the Project Schedule.

5.4.2 Final Acceptance will be issued pursuant to Section 6.5 of the General Conditions.

5.5 LIQUIDATED DAMAGES

5.5.1 Substantial Completion Liquidated Damages. Contractor acknowledges and agrees that if Contractor fails to obtain Substantial Completion of the Work within the Contract Time, City will sustain extensive damages and serious loss as a result of such failure. The exact amount of such damages will be extremely difficult to ascertain. Therefore, City and Contractor agree that if Contractor fails to achieve Substantial Completion of the Work within the Contract Time, City will be entitled to retain or recover from Contractor, as liquidated damages and not as a penalty, the sum per calendar day as indicated in MAG § 108.9.

5.5.2 Final Acceptance Liquidated Damages. For the same reasons set forth in Article 5.5.1 above, City and Contractor further agree that if Contractor fails to achieve Final Acceptance of the Work within the Contract Time, City will be entitled to retain or recover from Contractor, as liquidated damages and not as a penalty, the sum per calendar day as indicated in MAG § 108.9 commencing from the actual date of Substantial Completion or Final Acceptance as required under the Contract.

5.5.3 MAG Liquidated Damages. Liquidated damages provisions in MAG § 108.9 will apply.

5.5.4 City may deduct liquidated damages described in this Article 5.5 from any unpaid amounts then or thereafter due Contractor under this Agreement. Any liquidated damages not so deducted from any unpaid amounts due Contractor will be payable to City at the demand of City, together with interest from the date of the demand at the highest lawful rate of interest payable by Contractor.

5.6 MUTUAL WAIVER OF CONSEQUENTIAL DAMAGES ONLY

5.6.1 Contractor and City waive claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes.

1. Damages incurred by City for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

2. Damages incurred by Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

5.6.2 This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination of this Contract. Nothing contained in this Article 5.6 will be deemed to preclude an award of liquidated damages, when applicable, in accordance with Article 5.5 above.

5.6.3 Nothing herein will be deemed to constitute a waiver of any other remedy available to City in the event of Contractor's default under this Contract prior to full performance of the Work including, as applicable, specific performance or completion of the Work on behalf of Contractor, the cost and expense of which will be offset against any monies then or thereafter due to Contractor (if any) and otherwise immediately reimbursed to City by Contractor.

ARTICLE 6 - CONTRACT PRICE

6.1 CONTRACT PRICE

6.1.1 In exchange for Contractor's full, timely, and acceptable performances and construction of the Work under this Contract, and subject to all of the terms of this Contract, City will pay Contractor the "Contract Price," which is **$6,053,000**.

6.1.2 The Contract Price is all-inclusive and specifically includes all fees, cost, insurance and bond premiums, and taxes of any type necessary to fully, properly and timely perform and construct Work.

6.2 COSTS

For any portion of the Work which, either through this Contract, Change Order or otherwise, is performed and paid for on a cost, or time and materials basis, the costs which may be reimbursed to Contractor and chargeable against the Contract Price will be determined as set forth in MAG § 109.5.

ARTICLE 7 - PAYMENT

Payments will be made to Contractor in accordance with Section 8 of the General Conditions.

ARTICLE 8 - CHANGES TO THE CONTRACT

Changes to the Contract may be made in strict accordance with Section 9 of the General Conditions.

ARTICLE 9 - SUSPENSION AND TERMINATION

This Contract may be suspended or terminated in accordance with Section 10 of the General Conditions.

ARTICLE 10 - INSURANCE AND BONDS

10.1 Contractor must provide insurance in accordance with Sections 11.1 through 11.3 of the General Conditions. Contractor must provide proof of such insurance and all

required endorsements in forms acceptable to City prior to commencing any Work under this Contract.

10.2 Contractor must provide performance and payment bonds to City in Accordance with Section 11.4 of the General Conditions and A.R.S. § 34-222.

10.3 Failure to provide proof of insurance and the required endorsements, or the required bonds, in forms acceptable to City, will be a material breach and grounds for termination for cause of this Contract.

ARTICLE 11 - INDEMNIFICATION

Contractor must have and assume the indemnity obligations set forth in Section 12 of the General Conditions.

ARTICLE 12 - DISPUTE RESOLUTION

Any claims or disputes relating to this Contract will be resolved according to the dispute resolution process set forth in Section 13 of, and Appendix 6 to, the General Conditions.

SIGNATURE PAGE TO FOLLOW

IN WITNESS WHEREOF, the Parties hereto have executed this Contract through their duly authorized representatives and bind their respective entitles as of the effective date.

"CITY"
CITY OF CHANDLER

MAYOR Date

Recommended By:

Andrew Goh, P.E. Date
CIP City Engineer

APPROVED AS TO FORM:

City Attorney

ATTEST:

City Clerk Seal

"CONTRACTOR"
Achen-Gardner Construction, LLC

4-2-21

Signature Date

Daniel J. Spitza / Vice President

Name

Title

ATTEST: If Corporation

Secretary

DIANA M. MARTINEZ
Notary Public, State of Arizona
Maricopa County
Commission # 556834
My Commission Expires
December 20, 2022

STATE OF ARIZONA)
)ss.
County of Maricopa)

SUBSCRIBED AND SWORN TO before me, the undersigned notary public, by DANIEL SPITZA who was identified as the VICE PRESIDENT of ACHEN-GARDNER CONSTRUCTION, LLC on this 2ND day of APRIL, 2021.

My commission expires:
12/20/2022

Notary Public

CHANDLER arizona
Community of Innovation

City Council Memorandum **Public Works & Utilities** **Memo No.** CP21-113

Date: April 19, 2021

To: Mayor and Council

Thru: Joshua H. Wright, Acting City Manager
Debra Stapleton, Assistant City Manager
John Knudson, Public Works and Utilities Director
Andrew Goh, Capital Projects Manager

From: Sandra Story, Engineering Project Manager

Subject: Professional Services Agreement No. WA1903.451 and WA1908.451, with Wilson Engineers, LLC, for the Arrowhead Water Production Facility Rehabilitation and Pecos Surface Water Treatment Plant Surge System Construction Management Services

---

Proposed Motion:

Move City Council award Professional Services Agreement No. WA1903.451 and WA1908.451, to Wilson Engineers, LLC, for the Arrowhead Water Production Facility Rehabilitation and Pecos Surface Water Treatment Plant Surge System Construction Management Services, in an amount not to exceed $623,308.

Background/Discussion:

This project is a continuation of the Public Works & Utilities Department's ongoing initiative to modernize and rehabilitate the City's older water production facilities and replace aging pipe infrastructure. The Arrowhead Water Production Facility (WPF), located at 426 N. Arrowhead Drive, was constructed in 1988 to support water needs in the City. Recent inspections have identified the need to replace the existing pumps and corroded pump cans and piping, improve the facility building, and upgrade the electrical system. In addition, approximately 2,200 feet of 12-inch pipe, from the Arrowhead WPF south to Chandler Boulevard, will be replaced due to age and poor condition. These improvements are necessary for the facility to reliably provide water service to the surrounding vicinity.

The Pecos Surface Water Treatment Plant (SWTP), located at 1475 East Pecos Road, was put into service in 1989. The 2018 Water, Wastewater, and Reclaimed Water Master Plan included the recommendation for installation of a surge suppression system at the Pecos SWTP to mitigate pressure fluctuations to the water distribution system. The water distribution system infrastructure is aging and more susceptible to main breaks due to these pressure fluctuations. Water main breaks caused by these pressure fluctuations are responsible for water loss and damage to surrounding infrastructure and personal property. This portion of the project will complete the installation of a surge tank and other necessary appurtenances at the Pecos SWTP.

The project scope of work consists contractor oversight, construction administration and inspection, schedule review, progress payments review, attendance at construction meetings, and project close-out. The contract completion time for both locations is 400 calendar days following Notice to Proceed.

A related Construction Contract with Achen-Gardner Construction, LLC, for the Arrowhead WPF Rehabilitation & Pecos SWTP Surge System, is also scheduled for this City Council meeting.

A related Professional Services Agreement with Wilson Engineers, LLC, for the Arrowhead WPF Rehabilitation Post Design Services, is also scheduled for this City Council meeting.

A related Professional Services Agreement with Black & Veatch, for the Pecos SWTP Surge system Post Design Services, is also scheduled for this City Council meeting.

Evaluation:

The selection process was conducted in accordance with City policy and procedure and State law. Staff recommends approval of this agreement with Wilson Engineers, LLC, based on qualifications, relevant firm experience, team experience, project understanding, and project approach.

Fiscal Impact

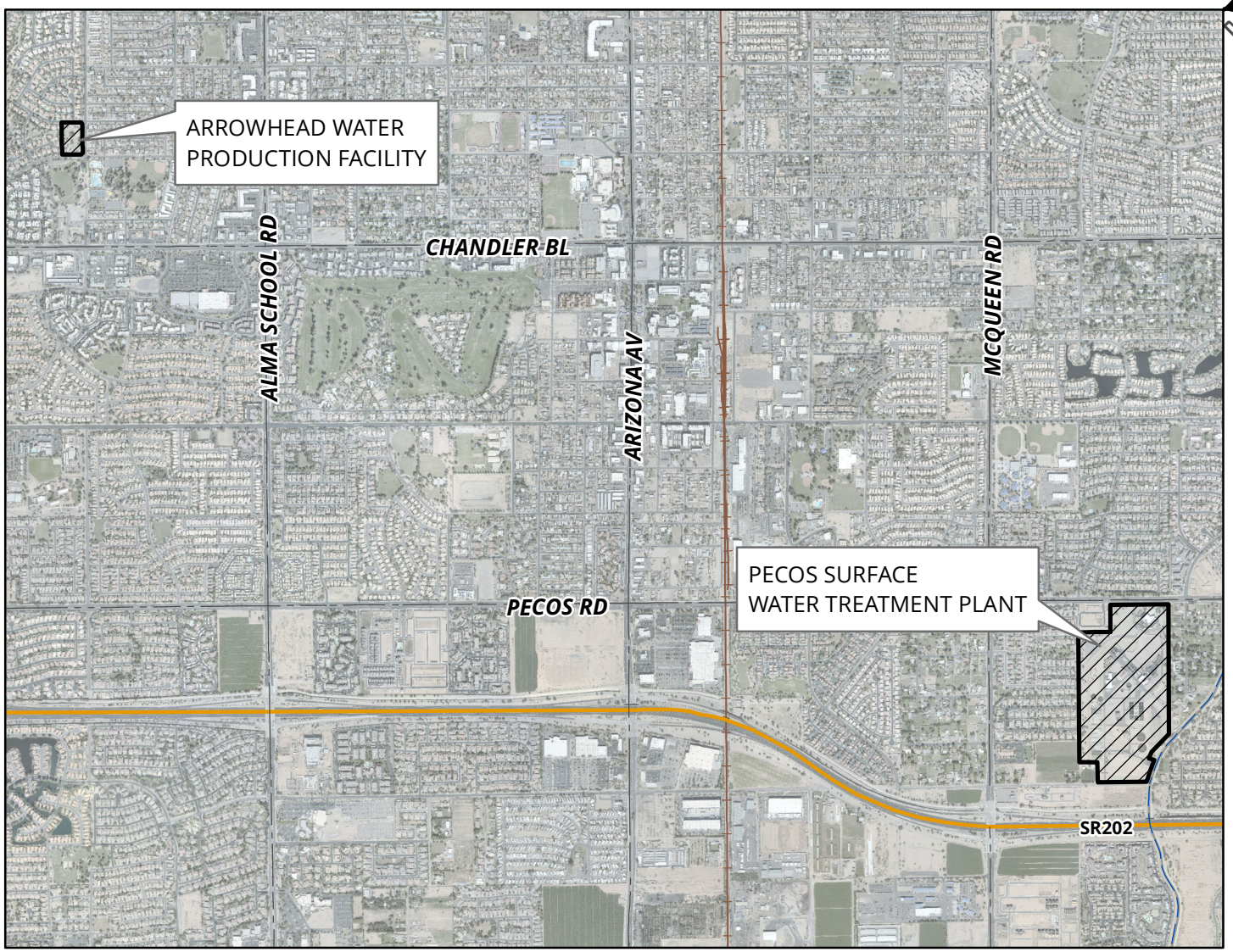
Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
601.3820.6714.6WA023	Water Bonds	Water Main Replacements	$26,840	Y
605.3820.6714.6WA023	Water Operating	Water Main Replacements	$35,491	Y
601.3820.6718.6WA210	Water Bonds	Water Treatment Plant Improvements	$105,962	Y
601.3820.6718.6WA230	Water Bonds	Water Production Facility Imprv	$455,015	Y

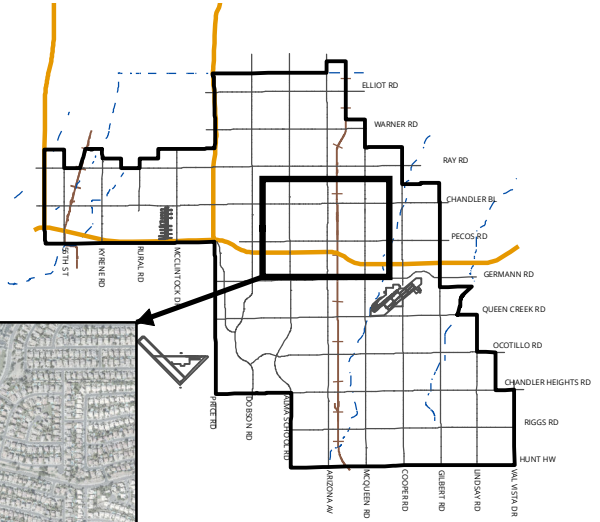
Attachments

Location Map

Agreement - Wilson Engineers

ARROWHEAD WATER PRODUCTION FACILITY IMPROVEMENTS AND PECOS SURFACE WATER TREATMENT PLANT SURGE SYSTEM CM SERVICES PROJECT NO. WA1903.451 AND WA1908.451





MEMO NO. CP21-113

PROJECT SITE

NTS

ChanGIS

F:\ENGINEER\GENSERV_ArcMap_Shared\Map Requests\Capital Projects\CP21-113 ARROWHEAD WATER PRODUCTION FACILITY REHAB & PECOS SURFACE WATER\CP21-113.mxd 3/24/2021 MARICELAH

PROFESSIONAL SERVICES AGREEMENT
Construction Management Services
ARROWHEAD WATER PRODUCTION FACILITY REHABILITATION & PECOS SURFACE WATER TREATMENT PLANT SURGE SYSTEM

Project No. WA1903.451 and WA1908.451

Council Date: April 22, 2021 Item No.

THIS AGREEMENT ("Agreement") is made and entered into on the _____ day of_____, 2021 ("Effective Date"), by and between City of Chandler, an Arizona municipal corporation, ("City"), and **Wilson Engineers, LLC**, an Arizona limited liability company, ("Consultant") (City and Consultant may individually be referred to as "Party" and collectively referred to as "Parties").

RECITALS

A. City proposes to engage Consultant to provide Construction Management Services for **ARROWHEAD WATER PRODUCTION FACILITY REHABILITATION & PECOS SURFACE WATER TREATMENT PLANT SURGE SYSTEM** project as more fully described in **Exhibit "A"**, which is attached to and made a part of this Agreement by this reference.

B. Consultant is ready, willing, and able to provide the services described in **Exhibit "A"** for the compensation and fees set forth and as described in **Exhibit "B"**, which is attached to and made a part of this Agreement by this reference.

C. City desires to contract with Consultant to provide these services under the terms and conditions set forth in this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the premises and the mutual promises contained in this Agreement, City and Consultant agree as follows:

SECTION I--CONSULTANT'S SERVICES

Consultant must perform the services described in **Exhibit "A"** to City's satisfaction within the terms and conditions of this Agreement and within the care and skill that a person who provides similar services in Chandler, Arizona exercises under similar conditions. All work or services furnished by Consultant under this Agreement must be performed in a skilled and workmanlike manner. All fixtures, furnishings, and equipment furnished by Consultant as

part of the work or services under this Agreement must be new, or the latest model, and of the most suitable grade and quality for the intended purpose of the work or service.

SECTION II--PERIOD OF SERVICE

Consultant must perform the services described in **Exhibit "A"** for the term of this Agreement. Unless amended in writing by the Parties, the Agreement term expires **400** calendar days after the Notice to Proceed (NTP) Date.

SECTION III--PAYMENT OF COMPENSATION AND FEES

Unless amended in writing by the Parties, Consultant's compensation and fees as more fully described in **Exhibit "B"** for performance of the services approved and accepted by City under this Agreement must not exceed **$623,308** for the full term of the Agreement. Consultant may not increase any compensation or fees under this Agreement without the City's prior written consent. Consultant must submit monthly requests for payment of services approved and accepted during the previous billing period and must include, as applicable, detailed invoices and receipts, a narrative description of the tasks accomplished during the billing period, a list of any deliverables submitted, and any subconsultant's or supplier's actual requests for payment plus similar narrative and listing of their work. Consultant must submit an Application and Certification for Payment Sheet with the monthly request for payment to: CapitalProjects.Payables@chandleraz.gov. Payment for those services negotiated as a lump sum will be made in accordance with the percentage of the work completed during the preceding billing period. Services negotiated as a not-to-exceed fee will be paid in accordance with the work effort expended on the service during the preceding month. All requests for payment must be submitted to City for review and approval. City will make payment for approved and accepted services within 30 calendar days of City's receipt of the request for payment. Consultant bears all responsibility and liability for any and all tax obligations that result from Consultant's performance under this Agreement.

SECTION IV--CITY'S OBLIGATIONS

As part of Consultant's services under this Agreement, City will provide furnished items, services, or obligations as detailed in **Exhibit "D"**.

SECTION V--GENERAL CONDITIONS

5.1 Notices. Unless otherwise provided herein, demands under this Agreement must be in writing and will be deemed to have been duly given and received either (a) on the date of service if personally served on the party to whom notice is to be given, or (b) on the third day after the date of the postmark of deposit by first class United States mail, registered or certified, postage prepaid and properly addressed as follows:

To City:	City of Chandler Public Works & Utilities Department Attn: CIP City Engineer P.O. Box 4008, Mail Stop 407 Chandler, AZ 85244-4008
With a Copy to:	Project Manager City of Chandler Public Works & Utilities Department P.O. Box 4008, Mail Stop 407 Chandler, AZ 85244-4008
To Consultant:	Mr. Phil Noonan Wilson Engineers, LLC 1620 W. Fountainhead Pkwy., Ste. 501 Tempe, AZ 85282

5.2 Records/Audit. Records of Consultant's direct personnel payroll, reimbursable expenses pertaining to this Agreement and records of accounts between City and Consultant must be kept on the basis of generally accepted accounting principles and must be made available to City and its auditors for up to three years following City's final acceptance of the services under this Agreement (this requirement is increased to five years if construction of this project is federally funded). City, its authorized representative, or any federal agency, reserves the right to audit Consultant's records to verify the accuracy and appropriateness of all cost and pricing data, including data used to negotiate this Agreement and any amendments. City reserves the right to decrease the total amount of Agreement price or payments made under this Agreement or request reimbursement from Consultant following final contract payment on this Agreement if, upon audit of Consultant's records, the audit discloses Consultant has provided false, misleading, or inaccurate cost and pricing data. Consultant will include a similar provision in all of its contracts with subconsultants who provide services under the Agreement to ensure that City, its authorized representative, or the appropriate federal agency, has access to the subconsultants' records to verify the accuracy of all cost and pricing data. City reserves the right to decrease Contract price or payments made on this Agreement or request reimbursement from Consultant following final payment on this Agreement if the above provision is not included in subconsultant agreements, and one or more subconsultants refuse to allow City to audit their records to verify the accuracy and appropriateness of all cost and pricing data. If, following an audit of this Agreement, the audit discloses Consultant has provided false, misleading, or inaccurate cost and pricing data, and the cost discrepancies exceed 1% of the total Agreement billings, Consultant will be liable for reimbursement of the reasonable, actual cost of the audit.

5.3 Alteration in Character of Work. Whenever an alteration in the character of work results in a substantial change in this Agreement, thereby materially increasing or decreasing the scope of services, cost of performance, or Project schedule, the work will be performed as directed by City. However, before any modified work is started, a written amendment must be approved and executed by City and Consultant. Such amendment must not be effective until approved by City. Additions to, modifications, or deletions from this Agreement as

provided herein may be made, and the compensation to be paid to Consultant may accordingly be adjusted by mutual agreement of the Parties. It is distinctly understood and agreed that no claim for extra services or materials furnished by Consultant will be allowed by City except as provided herein, nor must Consultant do any work or furnish any materials not covered by this Agreement unless such work is first authorized in writing. Any such work or materials furnished by Consultant without prior written authorization will be at Consultant's own risk, cost, and expense, and Consultant hereby agrees that without written authorization Consultant will make no claim for compensation for such work or materials furnished.

5.4 Termination. City and Consultant hereby agree to the full performance of the covenants contained herein, except that City reserves the right, at its discretion and without cause, to terminate or abandon any service provided for in this Agreement, or abandon any portion of the Project for which services have been performed by Consultant. In the event City abandons or suspends the services, or any part of the services as provided in this Agreement, City will notify Consultant in writing and immediately after receiving such notice, Consultant must discontinue advancing the work specified under this Agreement. Upon such termination, abandonment, or suspension, Consultant must deliver to City all drawings, plans, specifications, special provisions, estimates and other work entirely or partially completed, together with all unused materials supplied by City. Consultant must appraise the work Consultant has completed and submit Consultant's appraisal to City for evaluation. City may inspect Consultant's work to appraise the work completed. Consultant will receive compensation in full for services performed to the date of such termination. The fee will be paid in accordance with Section Ill of this Agreement, and as mutually agreed upon by Consultant and City. If there is no mutual agreement on payment, the final determination will be made in accordance with the "Disputes" provision in this Agreement. However, in no event may the fee exceed the fee set forth in Section Ill of this Agreement nor as amended in accordance with Section "Alteration in Character of Work." City will make the final payment within 60 days after Consultant has delivered the last of the partially completed items and the Parties agree on the final fee. If City is found to have improperly terminated the Agreement for cause or default, the termination will be converted to a termination for convenience in accordance with the provisions of this Agreement.

5.5 Indemnification. To the extent permitted by law, the Consultant ("lndemnitor") must indemnify, save and hold harmless City and its officers, officials, agents and employees ("lndemnitee") from any and all claims, actions, liabilities, damages, losses or expenses (including court costs, attorneys' fees and costs of claim processing, investigation and litigation) ("Claims") caused or alleged to be caused, in whole or in part, by the wrongful, negligent or willful acts, or errors or omissions of Consultant or any of its owners, officers, directors, agents, employees, or subconsultants in connection with this Agreement. This indemnity includes any claim or amount arising out of or recovered under workers' compensation law or on account of the failure of Consultant to conform to any federal, state or local law, statute, ordinance, rule, regulation or court decree. Consultant must indemnify lndemnitee from and against any and all Claims, except those arising solely from lndemnitee's own negligent or willful acts or omissions. Consultant is responsible for primary loss investigation, defense and judgment costs where this indemnification applies. In consideration of the award of this Agreement, Consultant agrees to waive all rights of

subrogation against Indemnitee for losses arising from or related to this Agreement. The obligations of Consultant under this provision survive the termination or expiration of this Agreement.

5.6 Insurance Requirements. Consultant must procure insurance under the terms and conditions and for the amounts of coverage set forth in **Exhibit "C"** against claims that may arise from or relate to performance of the work under this Agreement by Consultant and its agents, representatives, employees, and subconsultants. Consultant and any subconsultant must maintain this insurance until all of their obligations have been discharged, including any warranty periods under this Agreement. These insurance requirements are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement. City in no way warrants that the minimum limits stated in **Exhibit "C"** are sufficient to protect Consultant from liabilities that might arise out of the performance of the work under this Agreement by Consultant, Consultant's agents, representatives, employees, or subconsultants. Consultant is free to purchase such additional insurance as may be determined necessary.

5.7 Cooperation and Further Documentation. Consultant agrees to provide City such other duly executed documents as may be reasonably requested by City to implement the intent of this Agreement.

5.8 Successors and Assigns. City and Consultant each bind itself, its partners, successors, assigns, and legal representatives to the other party to this Agreement and to the partners, successors, assigns, and legal representatives of such other party in respect to all covenants of this Agreement. Neither City nor Consultant may assign, sublet, or transfer its interest in this Agreement without the written consent of the other party. In no event may any contractual relation be created between any third party and City.

5.9 Disputes. In any dispute arising out of an interpretation of this Agreement or the duties required not disposed of by agreement between Consultant and City, the final determination at the administrative level will be made by City Engineer.

5.10 Completeness and Accuracy of Consultant's Work. Consultant must be responsible for the completeness and accuracy of Consultant's services, data, and other work prepared or compiled under Consultant's obligation under this Agreement and must correct, at Consultant's expense, all willful or negligent errors, omissions, or acts that may be discovered. Correction of errors disclosed and determined to exist during any construction of the project on architectural or engineering drawings and specifications must be accomplished by Consultant. The cost of the design necessary to correct those errors attributable to Consultant and any damage incurred by City as a result of additional construction costs caused by such engineering or architectural errors will be chargeable to Consultant and will not be considered a cost of the Work. The fact that City has accepted or approved Consultant's work will in no way relieve Consultant of any of Consultant's responsibilities.

5.11 Reporting. Written monthly reports, along with updated work schedules, will be made by Consultant in the format prescribed by City. These reports will be delivered to City per schedule. When requested by City, Consultant will attend Council meetings and provide finished

documents including correspondence for Council action, supporting charts, graphs, drawings and colored slides of same.

5.12 Withholding Payment. City reserves the right to withhold funds from Consultant's payments up to the amount equal to the claims City may have against Consultant until such time that a settlement on those claims has been reached.

5.13 City's Right of Cancellation. The Parties acknowledge that this Agreement is subject to cancellation by City under the provisions of Section 38-511, Arizona Revised Statutes (A.R.S.).

5.14 Independent Consultant. For this Agreement Consultant constitutes an independent contractor. Any provisions in this Agreement that may appear to give City the right to direct Consultant as to the details of accomplishing the work or to exercise a measure of control over the work means that Consultant must follow the wishes of City as to the results of the work only. These results must comply with all applicable laws and ordinances.

5.15 Project Staffing. Prior to the start of any work under this Agreement, Consultant must submit to City detailed resumes of key personnel that will be involved in performing services prescribed in the Agreement. City hereby acknowledges its acceptance of such personnel to perform services under this Agreement. At any time hereafter that Consultant desires to change key personnel while performing under the Agreement, Consultant must submit the qualifications of the new personnel to City for prior approval. Key personnel include, but are not limited to, principals-in-charge, project manager, and project Consultant. Consultant will maintain an adequate and competent staff of qualified persons, as may be determined by City, throughout the performance of this Agreement to ensure acceptable and timely completion of the Scope of Services. If City objects, with reasonable cause, to any of Consultant's staff, Consultant must take prompt corrective action acceptable to City and, if required, remove such personnel from the Project and replace with new personnel agreed to by City.

5.16 Consultants or Subconsultants. Prior to beginning the work, Consultant must furnish City for approval the names of consultants or subconsultants to be used under this Agreement. Any subsequent changes are subject to City's written prior approval.

5.17 Force Majeure. If either party is delayed or prevented from the performance of any act required under this Agreement by reason of acts of God or other cause beyond the control and without fault of the Party (financial inability excepted), performance of that act may be excused, but only for the period of the delay, if the Party provides written notice to the other Party within ten days of such act. The time for performance of the act may be extended for a period equivalent to the period of delay from the date written notice is received by the other Party.

5.18 Compliance with Federal Laws. Consultant understands and acknowledges the applicability of the Americans with Disabilities Act, the Immigration Reform and Control Act of 1986 and the Drug Free Workplace Act of 1989 to it. Consultant agrees to comply with these laws in performing this Agreement and to permit City to verify such compliance.

5.19 No Israel Boycott. By entering into this Agreement, Consultant certifies that Consultant is not currently engaged in, and agrees for the duration of the Agreement, not to engage in a boycott of Israel as defined by state statute.

5.20 Legal Worker Requirements. A.R.S. § 41-4401 prohibits City from awarding a contract to any consultant who fails, or whose subconsultants fail, to comply with A.R.S. § 23-214(A). Therefore, Consultant agrees Consultant and each subconsultant it uses warrants their compliance with all federal immigration laws and regulations that relate to their employees and their compliance with § 23-214, subsection A. A breach of this warranty will be deemed a material breach of the Agreement and may be subject to penalties up to and including termination of the Agreement. City retains the legal right to inspect the papers of any Consultant's or subconsultant's employee who provides services under this Agreement to ensure that Consultant and subconsultants comply with the warranty under this provision.

5.21 Lawful Presence Requirement. A.R.S. §§ 1-501 and 1-502 prohibit City from awarding a contract to any natural person who cannot establish that such person is lawfully present in the United States. To establish lawful presence, a person must produce qualifying identification and sign a City-provided affidavit affirming that the identification provided is genuine. This requirement will be imposed at the time of contract award. This requirement does not apply to business organizations such as corporations, partnerships, or limited liability companies.

5.22 Covenant Against Contingent Fees. Consultant warrants that no person has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, and that no member of the Chandler City Council, or any City employee has any interest, financially, or otherwise, in Consultant's firm. For breach or violation of this warrant, City may annul this Agreement without liability or, at its discretion, to deduct from the Agreement price or consideration, the full amount of such commission, percentage, brokerage, or contingent fee.

5.23 Non-Waiver Provision. The failure of either Party to enforce any of the provisions of this Agreement or to require performance of the other Party of any of the provisions hereof must not be construed to be a waiver of such provisions, nor must it affect the validity of this Agreement or any part thereof, or the right of either Party to thereafter enforce each and every provision.

5.24 Disclosure of Information Adverse to City's Interests. To evaluate and avoid potential conflicts of interest, Consultant must provide written notice to City, as set forth in this Section, of any work or services performed by Consultant for third parties that may involve or be associated with any real property or personal property owned or leased by City. Such notice must be given 7 business days prior to commencement of the services by Consultant for a third party, or 7 business days prior to an adverse action as defined below. Written notice and disclosure must be sent in accordance with Section 6.7 above. An adverse action under this Agreement includes, but is not limited to: (a) using data as defined in the Agreement acquired in connection with this Agreement to assist a third party in pursuing administrative or judicial action against City; or (b) testifying or providing evidence on behalf

of any person in connection with an administrative or judicial action against City; or (c) using data to produce income for Consultant or its employees independently of performing the services under this Agreement, without the prior written consent of City. Consultant represents that except for those persons, entities, and projects identified to City, the services performed by Consultant under this Agreement are not expected to create an interest with any person, entity, or third party project that is or may be adverse to City's interests. Consultant's failure to provide a written notice and disclosure of the information as set forth in this Section constitute a material breach of this Agreement.

5.25 Data Confidentiality and Data Security. As used in the Agreement, "data" means all information, whether written or verbal, including plans, photographs, studies, investigations, audits, analyses, samples, reports, calculations, internal memos, meeting minutes, data field notes, work product, proposals, correspondence and any other similar documents or information prepared by, obtained by, or transmitted to Consultant or its subconsultants in the performance of this Agreement. The Parties agree that all data, regardless of form, including originals, images, and reproductions, prepared by, obtained by, or transmitted to Consultant or its subconsultants in connection with Consultant's or its subconsultant's performance of this Agreement is confidential and proprietary information belonging to City. Except as specifically provided in this Agreement, Consultant or its subconsultants must not divulge data to any third party without City's prior written consent. Consultant or its subconsultants must not use the data for any purposes except to perform the services required under this Agreement. These prohibitions do not apply to the following data provided to Consultant or its subconsultants have first given the required notice to City: (a) data which was known to Consultant or its subconsultants prior to its performance under this Consultant or its subconsultants by a third party, who to the best of Consultant's or its subconsultants' knowledge and belief, had the legal right to make such disclosure and Consultant or its subconsultants are not otherwise required to hold such data in confidence; or (c) data which is required to be disclosed by virtue of law, regulation, or court order, to which Consultant or its subconsultants are subject. In the event Consultant or its subconsultants are required or requested to disclose data to a third party, or any other information to which Consultant or its subconsultants became privy as a result of any other contract with City, Consultant must first notify City as set forth in this Section of the request or demand for the data. Consultant or its subconsultants must give City sufficient facts so that City can be given an opportunity to first give its consent or take such action that City may deem appropriate to protect such data or other information from disclosure. All data must continue to be subject to the confidentiality agreements of this Agreement. Consultant or its subconsultants assume all liability to maintain the confidentiality of the data in its possession and agrees to compensate City if any of the provisions of this Section are violated by Consultant, its employees, agents or subconsultants. Solely for the purposes of seeking injunctive relief, it is agreed that a breach of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. Consultant agrees that the requirements of this Section must be incorporated into all subagreements entered into by Consultant. A violation of this Section may result in immediate termination of this Agreement without notice.

5.26 Personal Identifying Information-Data Security. Personal identifying information, financial account information, or restricted City information, whether electronic format or

hard copy, must be secured and protected at all times by Consultant or its subconsultants. At a minimum, Consultant or its subconsultants must encrypt or password-protect electronic files. This includes data saved to laptop computers, computerized devices, or removable storage devices. When personal identifying information, financial account information, or restricted City information, regardless of its format, is no longer necessary, the information must be redacted or destroyed through appropriate and secure methods that ensure the information cannot be viewed, accessed, or reconstructed. In the event that data collected or obtained by Consultant or its subconsultants in connection with this Agreement is believed to have been compromised, Consultant or its subconsultants must immediately notify City contact. Consultant agrees to reimburse City for any costs incurred by City to investigate potential breaches of this data and, where applicable, the cost of notifying individuals who may be impacted by the breach. Consultant agrees that the requirements of this Section must be incorporated into all subcontracts entered into by Consultant. It is further agreed that a violation of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. A violation of this Section may result in immediate termination of this Agreement without notice. The obligations of Consultant or its subconsultants under this Section must survive the termination of this Agreement.

5.27 Jurisdiction and Venue. This Agreement is made under, and must be construed in accordance with and governed by the laws of the State of Arizona without regard to the conflicts or choice of law provisions thereof. Any action to enforce any provision of this Agreement or to obtain any remedy with respect hereto must be brought in the courts located in Maricopa County, Arizona, and for this purpose, each Party hereby expressly and irrevocably consents to the jurisdiction and venue of such court.

5.28 Survival. All warranties, representations, and indemnifications by Consultant must survive the completion or termination of this Agreement.

5.29 Modification. Except as expressly provided herein to the contrary, no supplement, modification, or amendment of any term of this Agreement will be deemed binding or effective unless in writing and signed by the Parties.

5.30 Severability. If any provision of this Agreement or the application to any person or circumstance may be invalid, illegal or unenforceable to any extent, the remainder of this Agreement and the application will not be affected and will be enforceable to the fullest extent permitted by law.

5.31 Integration. This Agreement contains the full agreement of the Parties. Any prior or contemporaneous written or oral agreement between the Parties regarding the subject matter is merged and superseded.

5.32 Time is of the Essence. Time of each of the terms, covenants, and conditions of this Agreement is hereby expressly made of the essence.

5.33 Date of Performance. If the date of performance of any obligation or the last day of any time period provided for should fall on a Saturday, Sunday, or holiday for City, the obligation will be due and owing, and the time period will expire, on the first day after which

is not a Saturday, Sunday or legal City holiday. Except as may otherwise be set forth in this Agreement, any performance provided for herein will be timely made if completed no later than 5:00 p.m. (Chandler time) on the day of performance.

5.34 Third Party Beneficiary. Nothing under this Agreement will be construed to give any rights or benefits in the Agreement to anyone other than City and Consultant, and all duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of City and Consultant and not for the benefit of any other party.

5.35 Conflict in Language. All work performed must conform to all applicable City of Chandler codes, ordinances, and requirements as outlined in this Agreement. If there is a conflict in interpretation between provisions in this Agreement and those in **Exhibit "A"**, the provisions in this Agreement prevail.

5.36 Document/Information Release. Documents and materials released to Consultant, which are identified by City as sensitive and confidential, are City's property. The document/material must be issued by and returned to City upon completion of the services under this Agreement. Consultant secondary distribution, disclosure, copying, or duplication in any manner is prohibited without City's prior written approval. The document/material must be kept secure at all times. This directive applies to all City documents, whether in photographic, printed, or electronic data format.

5.37 Exhibits. The following exhibits are made a part of this Agreement and are incorporated by reference:

Exhibit A - Scope of Services / Schedule
Exhibit B - Compensation and Fees
Exhibit C - Insurance Requirements
Exhibit D - Special Conditions
Exhibit E – Federal Requirements (if applicable)

5.38 Special Conditions. As part of the services Consultant provides under this Agreement, Consultant agrees to comply with and fully perform the special terms and conditions set forth in **Exhibit "D"**, which is attached to and made a part of this Agreement.

5.39 Non-Discrimination and Anti-Harassment Laws. Consultant must comply with all applicable City, state, and federal non-discrimination and anti-harassment laws, rules, and regulations.

5.40 Licenses and Permits. Beginning with the Effective Date and for the full term of this Agreement, Consultant must maintain all applicable City, state, and federal licenses and permits required to fully perform Consultant's services under this Agreement.

5.41 Warranties. Consultant must furnish a one-year warranty on all work and services performed under this Agreement. Consultant must furnish, or cause to be furnished, a two-year warranty on all fixtures, furnishings, and equipment furnished by Consultant, subconsultants or suppliers under this Agreement. Any defects in design, workmanship, or

materials that do not comply with this Agreement must be corrected by Consultant (including, but not limited to, all parts and labor) at Consultant's sole cost and expense. All written warranties and redlines for as-built conditions must be delivered to City on or before City's final acceptance of Consultant's services under this Agreement.

5.42 Cooperative Purchasing Agreement (S.A.V.E. – Strategic Alliance for Volume Expenditures). In addition to City of Chandler and with the approval of Consultant, this Agreement may be extended for use by other municipalities, school districts, and government agencies of the State. Any such usage by other entities must be in accordance with the ordinance, charter, or procurement rules and regulations of the respective political entity.

5.43 Budget Approval into Next Fiscal Year. This Agreement will commence on the Effective Date and continue in full force and effect until it is terminated or expires in accordance with the provisions of this Agreement. The Parties recognize that the continuation of this Agreement after the close of the City's fiscal year, which ends on June 30 of each year, is subject to the City Council's approval of a budget that includes an appropriation for this item as an expenditure. The City does not represent that this budget item will be actually adopted. This determination is solely made by the City Council.

SIGNATURE PAGE TO FOLLOW

This Agreement will be in full force and effect only when it has been approved and executed by the duly authorized City officials.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the Effective Date.

"CITY"
CITY OF CHANDLER

MAYOR

Recommended By:

Andrew Goh, P.E.
CIP City Engineer

APPROVED AS TO FORM:

City Attorney

ATTEST:

City Clerk Seal

"CONSULTANT"
Wilson Engineers, LLC

Signature 3/16/21
Date

Phil Noonan
Print Name

Principal
Title

Phil.Noonan@wilson-engineers.com
Signer Email Address

EXHIBIT "A"
SCOPE OF SERVICES/SCHEDULE

EXHIBIT A
SCOPE OF WORK
CONSTRUCTION MANAGEMENT SERVICES

Project Description

The project includes the rehabilitation of the Chandler Arrowhead Water Production Facility, an associated 16-inch diameter waterline that runs east along Carla Vista Drive and then south along Arrowhead Drive, and a surge tank addition at the Pecos WTP.

The Arrowhead Pump Water Production Facility rehabilitation includes removal and replacement of the existing vertical turbine pumps, the existing pump suction line, and associated pump cans, potential addition of a concrete vault deck or new vault grating, replacement of the pump discharge header, addition of a new electrical room, replacement of the existing MCC, addition of a new PLC and associated instrumentation conduits/cables, installation of new Variable Frequency Drives, installation of a new bathroom, removal and replacement of the existing generator, modifications to the existing roof structure with the addition of access hatches, replacement of the HVAC unit, new electrical conduits, and general building improvements.

The replacement of an existing 12-inch/16-inch diameter asbestos cement waterline is also part of this project. The Work includes the demolition and removal of approximately 2,100 linear feet of an existing asbestos cement pipe and the installation of new 16-inch diameter PVC pipe in the same alignment. A portion of the waterline will be in the Arrowhead Drive right-of-way alignment, and a portion will be in the Arrowhead Public Park.

The Pecos WTP work within this project includes the installation of a new surge tank along with associated components which include its concrete pad, control system and interface with SCADA. There are also check valves which require replacement.

For this project Wilson Engineers will be conducting the Construction Management Services for the Arrowhead Water Production Facility Modification, associated 16-inch diameter waterline, and overseeing the construction of the Pecos WTP Surge Tank.

Project Tasks

The Consultant will provide following Construction Management services which includes following tasks:

Task 1- PRE-CONSTRUCTION ASSISTANCE

A. Task 1.1 Preconstruction Assistance

i. Consultant will attend a pre-construction conference. At the conference, the Consultant will identify the services to be provided by Consultant and discuss coordination procedures. Consultant will prepare an agenda for this meeting and will prepare and distribute the meeting minutes.

ii. Consultant must attend one coordination meeting with the Public Outreach Consultant to review improvements and properties requiring specific outreach efforts.

2. CONSTRUCTION MANAGEMENT

A. Task 2.1 Weekly Construction Meetings

i. Wilson will conduct weekly construction meetings. Each meeting includes agenda and minutes; Request for Information (RFI); Shop Drawing; Request for Information (RFI); Field Directive (FD); Material Certification; and Allowance Logs. Consultant assumes 52 weekly meetings will be held.

B. Task 2.2 CPM Schedule

i. Consultant's opinions concerning various scheduling documents produced or used by the Contractor are for information and not controlling on the Contractor. It is Contractor's responsibility to continue to exercise it independent judgement concerning means, methods and sequences of construction it employs. The Contractor remains solely responsible for meeting contract time(s) identified in the construction documents.

ii. Review Progress Schedule: Consultant will review and critique the Contractor's progress schedule in accordance with the construction documents, Consultant will examine work sequence, durations, interim milestones, and other appropriate scheduling features in accordance the requirements of the construction documents. Consultant will prepare a summary of the baseline schedule review comments and will meet and discuss the schedule comments with the Contractor and the City. Consultant will provide recommendations for acceptance.

iii. Review Progress schedule updates: Consultant will review the Contractor's progress schedule updates to the construction schedule in accordance with the construction documents. Consultant will perform a review of progress accomplished during the period and compare to planned schedule and discuss significant discrepancies with the Contractor. Consultant and Contractor will establish, based on the data, the percent of Project completion. Consultant will meet with Contractor on monthly basis to review and update the schedule data. Based upon the schedule update, Consultant will recommend processing progress payments. Consultant assumes twelve (12) reviews of updated CPM schedule.

C. Task 2.3 Requests for Information (RFI's)

i. Consultant will receive, distribute and return all Contractor Requests for Information (RFI's); and prepare and maintain a submittal log of all RFI's. Consultant will also coordinate with sub consultants for the Arrowhead Water Production facility and other consultants (Black & Veatch for all associated RFI's related to the Pecos WTP Surge Tank addition, under a separate contract with the City). Consultant assumes a maximum of fifty (50) RFI responses.

D. Task 2.4 Shop Drawing Submittals

i. Consultant will receive, and distribute (or take other appropriate action in respect of) shop drawings, samples, test results, and other data which Contractor is required to submit. Consultant will maintain a submittal log showing dates of submittal, transmittal action to other sub-consultants, dates of return, and review action. Copies of the log shall be furnished to the City and the Contractor weekly.

ii. Consultant will coordinate with sub consultants for the Arrowhead Water Production facility, and other consultants (Black & Veatch for all associated shop drawings related to the Pecos WTP Surge Tank addition, under a separate contract with the City). Consultant assumes a maximum of a one hundred (100) submittals, with 50% requiring re-submittal and a second review, for a total of 150 submittals.

E. Task 2.5 Requests for Proposal (RFP)

i. Consultant will prepare Requests for Proposal (RFP) documents detailing requested additional work tasks; review and evaluate Contractor RFP responses

(cost deviations) with approval recommendations; and prepare and maintain a submittal log list of all RFP's. Consultant assumes preparation of ten (10) RFPs.

F. Task 2.6 Field Directives (FD's)

i. Consultant, without the City's prior approval, may authorize or direct minor changes in the Work which are consistent with the intent of the construction contract documents and which do not involve a change in Project cost, time for construction, Project scope, aesthetics, or approved design elements. Any such minor changes shall be implemented by written field order. Except as provided in this paragraph, Consultant shall not have authority to direct or authorize changes in the Work without the City's prior written approval; however, Consultant shall provide a copy of any written field order to the City.

ii. Consultant will prepare and submit change order requests explaining the merits for the change and a recommendation for the City's approval and acceptance.

iii. Consultant will negotiate an agreement with the Contractor as to scope of work and cost, time or both associated with the change in Work. The change order shall include a written justification for the cost of the Work. Consultant will administer and manage minor changes, change order requests, and change orders on behalf of the City. Change orders shall be prepared on a standard form provided by the City. Should a change order request be accepted by the City in the absence of an agreement with the Contractor as to cost, time, or both, Consultant will:

A) receive and maintain all documentation pertaining to the change order request required of the Contractor;

B) examine such documentation on the City's behalf;

C) take such other action as may be reasonably necessary or as the City may request; and

D) make a recommendation to the City concerning any appropriate adjustment in the construction cost and/or time, and prepare a change order for Contractor's acceptance and City approval.

iv. Changes and substitutions shall be limited to the scope of the Project as defined by the construction documents or additional work as may be requested by the City. Consultant will promptly consult with and advise the City concerning, and shall administer and manage, all change order requests and change orders.

v. Consultant will prepare, when requested by the City, required drawings, specifications and other supporting data regarding minor changes, change order requests, and change orders. Consultant must prepare Field Directive (FD) documents detailing requested additional work tasks; review and evaluate Contractor FD responses with approval recommendations; and prepare and maintain a submittal log list of all FD's. Consultant assumes ten (10) FD's.

G. Task 2.7 Contractor Payment Applications

i. Consultant will review, prepare comments, and reach agreement with the Contractor on the progress represented in the Contractor's schedule of values. The monthly schedule update, schedule of values, in combination with Consultant's field inspections, and the progress schedule shall be used by Consultant to determine the appropriateness of the Contractor's request for payment.

ii. Consultant, as an experienced and qualified professional, and on review of applications for payment and the accompanying data and schedules, determine the amounts owed to Contractor and recommend in writing, payments to Contractor in such amounts; such recommendations of payment will constitute a representation to City, based on such inspections and review, that;

A) the work has progressed to the point indicated;

B) to the best of Consultant's knowledge, information and belief, the quality of such work is in accordance with the construction documents (subject to an

evaluation of such work as a functioning Project upon Substantial Completion, to the results of any subsequent tests called for in the construction documents, and to any qualifications stated in the recommendation); and

C) payment of the amount recommended is due and owed to the Contractor.

iii. For unit price work, Consultant's recommendations for payment will be a determination of completed quantities of such work.

iv. Consultant assumes a maximum of fourteen (14) payment applications, with 2 reviews each.

H. Task 2.8 Public Outreach

i. Consultant shall retain a public outreach firm (MakPro Services) to assist the City during the construction work. Tasks will include: create and maintain project website; maintain a 24-hour bilingual project hotline to respond to inquiries, complaints and maintain a call log; public weekly email updates; public interactions with property owners as a liaison between property owners and the City; coordination meetings; project meetings; public meeting coordination; federal funds required partnering process (project team partnering meeting, maintaining status).

3. CONSTRUCTION INSPECTION

A. Task 3.1 Inspection Services

i. The Resident Project Representative (RPR) will maintain a presence at the Project site with sufficient frequency to be knowledgeable about the progress and quality of the work to:

A) Conduct on-site inspections of the work in progress to assist Consultant in determining if the work is proceeding in accordance with the construction documents and that completed work conforms to the construction documents.

B) Report to Consultant whenever it is believed that any work is unsatisfactory, faulty, or defective, or does not conform to the construction documents, or does not meet the requirements of inspections, tests or approval required to be made, or has been damaged prior to final payment; and advise Consultant when it is believed work should be corrected or rejected or should be uncovered for inspection, or requires special testing, inspection or approval.

C) Verify that tests, equipment, and systems start-up and operating and maintenance instructions are conducted as required by the construction documents and in presence of the required personnel, and that Contractor maintains adequate records thereof; inspect, record and report to Consultant appropriate details relative to the test procedures and start-ups. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the outcome of these inspections, and report to Consultant.

ii. The RPR will prepare daily inspection reports documenting Contractor construction activities and progress during field inspection visits; and perform intermittent erosion control inspections. Consultant assumes one inspector full time 40 hours per week for 12 months.

B. Task 3.2 Project Closeout

i. Following notice from the Contractor, The Consultant will conduct an inspection to determine if the Project or the work associated with interim milestones is substantially complete in accordance with the construction documents. If the Consultant considers the work substantially complete, the Consultant will deliver to the City and the Contractor the Certificate of Substantial Completion and the punch list, the date for completion of the punch list, and recommend the division of responsibilities between the City and the Contractor. If the work is not substantially complete, the process shall be repeated until the work is substantially complete.

ii. The Consultant will, upon completion of the punch list items as notified by the Contractor, make final inspection to determine if the finished work has been completed to the standard required by the construction documents, determine whether required inspections and approvals for permit compliance have been satisfactorily completed, and Contractor has fulfilled the obligations so that Consultant may recommend, in writing, final payment to Contractor and may give written notice to City and the Contractor that the work is acceptable, subject to any conditions therein expressed and in consultation with the City whether the work is finally complete. At or prior to the final inspection, the Consultant will request the Contractor prepare and furnish;

1) certification that all obligations for payment for labor, materials or equipment related to the work have been paid or otherwise satisfied;

2) certification that all insurance and bonds required of the Contractor beyond final payment is in effect and will not be canceled or allowed to expire without notice to the City;

3) the written consent of surety for final payment;

4) record document information is complete and submitted;

5) all keys, manuals, required spare parts, guaranties and warranties, and other documents necessary for close-out of the work; and

6) verification of permit close-out including the Certification of Occupancy.

If the work is not finally complete, the process shall be repeated until the work is finally complete. Promptly after the work is determined to be finally complete and the Consultant determines that the Contractor has properly submitted the items required for final inspection, the Consultant will determine whether the Contractor is entitled to final payment and, if so, will so certify to the City.

iii. The Consultant certification that the Contractor is entitled to final payment constitutes the Consultant representation to the City that;

1) the work complies with (a) the construction contract documents, (b) applicable building codes, rules or regulations of all governmental authorities having jurisdiction over the Project, and (c) applicable installation and workmanship standards;

2) the Contractor has submitted proper Final Completion close-out documents; and

3) the Contractor is entitled to final payment.

The Consultant will provide to the City, at the time it submits a signed final payment request from the Contractor, all Final Completion close-out documents.

iv. Consultant will not be responsible for the acts or omissions of any Contractor, or subcontractor, or any of the Contractor(s)' or subcontractor(s)' agents or employees or any other persons (except Consultant's own employees and agents) at the site(s) or otherwise performing any of the Contractor(s)' work;

4. UTILITY COORDINATION

A. Task 4.1 Utility Coordination

i. Consultant must complete Acceptance of Construction (AOC) application and all other necessary documents to obtain MCESD AOC approval.

5. MATERIALS TESTING

A. Task 5.1 Quality Control (QC) Test Program

i. Consultant must review and verify Contractor's Quality Control material test type and frequencies are consistent with City and MAG; review and evaluate

Contractor's QC test schedule and provide recommendations on acceptance; and review and evaluate all Contractor sampling, test, and inspection results for conformance with construction documents.

ii. The Consultant will provide material testing service for tests as required to be performed by the City in the construction contract documents. The Consultant will provide the services of a professional construction materials inspection and testing laboratory that meets ASTM E 329 requirements. Inspection and testing shall be coordinated with the construction schedule. Testing and inspection services shall include placement inspection and testing of compacted select fill and backfill, ordinary backfill, paving base, pavement subgrade, and subgrade courses; asphaltic concrete pavement inspection and field density tests and concrete testing and inspection. Samples for testing shall be collected from the construction site and delivered to the laboratory. The laboratory shall provide a construction materials technician (technicians) to perform the field construction materials inspection and field testing services herein outlined.

iii. Consultant will review laboratory reports and reports of inspection and testing activities describing the tests and inspections made and maintain files of this documentation to be turned over to the City. The laboratory shall itemize any changes in specifications or acceptance criteria authorized by the Consultant and report the actual condition of all items tested and inspected. The laboratory shall report directly to the Consultant's Resident Project Representative and shall receive direction with respect to work activities, duties, duration, reporting procedures, etc., from the Consultant's Resident Project Representative.

iv. The Consultant's laboratory (and its technician(s)) will inspect and test for the following:

1) Soils Testing: Select backfill, backfill and subgrade materials under and around structures, paved areas, pipe trenches, and duct bank/conduit, etc., for compaction to the appropriate percentage of the moisture-density specified for each material. Selection of areas to be tested shall be made by the Consultant. Placement of select backfill shall be periodically monitored by the technician for compliance with project materials quality specifications. Field moisture-density tests shall be conducted by the technician at the frequency directed by the Consultant. In-place density tests and sampling shall be conducted by the Technician on the compacted asphalt pavement at the frequency designated by the Consultant. Moisture-density relationships shall be determined in accordance with the moisture-density specifications specified for this Project, utilizing the appropriate method for each material type. Optimum moisture and maximum density remolded swell and plasticity index testing as required for each sample submitted. Soil sieve analyses shall be conducted prior to placement of select backfill, and embedment and all granular fill materials.

2) Concrete Placements: The laboratory's technician shall monitor the concrete materials, as delivered to the Project site, for compliance with the requirements of the Construction Contract Documents. These requirements include temperature, slump, air content, time of delivery and composition as delivered. The technician shall report any deviations from the Construction Document requirements to the Consultant's Resident Project Representative. Consultant's Representative will determine the acceptability of the products. The technician shall prepare and deliver (to the laboratory for testing) the concrete test cylinders in accordance with the Construction Contract Documents and appropriate American Concrete Institute (ACI) Standards.

Deliver to the laboratory, from the construction site, the concrete test cylinders prepared by the Technician. Provide test cylinder control system in accordance with the Laboratory's standard control procedure.

3) Testing of Hot Mix Asphaltic Concrete: Bitumen extraction, aggregate gradation, bitumen content, laboratory density and stability test shall be performed for paving operations.

4) Additional Testing: Additional testing services that may be required throughout the life of the construction period will be provided at the Consultant's request. Fees for these services will be invoiced through the Consultant to the City at the laboratory's standard unit rates in effect at the time these services are provided.

B. Task 5.2 Quality Assurance (QA) Test Program

i. Consultant must prepare and maintain a materials Quality Assurance plan per City and MAG.

ii. Consultant must coordinate with Contractor's testing representative to obtain required QA tests and sample; complete sampling and compaction testing of subgrade (including lime-stabilized subgrade base), aggregate base and asphalt concrete materials in new asphalt concrete pavement areas; complete sampling and compaction testing of subgrade, aggregate base (where required) and concrete for new curbs, gutters, sidewalks and concrete pavement and structures; and complete sampling and compaction testing of backfill for new irrigation, sewer, water, storm drain pipe, and dry utilities.

iii. Written reports of all testing results which identify the required data and identify conformance or non-conformance with the Construction Contract Document will be maintained by the Consultant and provided to the City at the completion of the Project. The Consultant will take appropriate action on all such testing and inspection reports, including acceptance, rejection, requiring additional testing or corrective work, or such other action the Consultant deems appropriate. The Consultant will promptly reject Work which does not conform to and comply with testing requirements.

6. RECORD DRAWINGS

A. **Task 6.1 Record Drawings** (Not Included with this Scope, Included with Post Design Services)

7. ALLOWANCES

A. Task 7.1 Start-up Assistance and MOPOs

i. The start-up process will include a planned, systematic approach to verify that facility systems operate as intended and there is an orderly transition from construction phase to routine operation. The start-up assistance will include four phases with estimated durations as follows:

ii. Start-up Plan: Consultant will review a start-up plan and procedures prepared by the Contractor with the City staff. The start-up plan will include identification of key milestone activities necessary for orderly start-up of the facilities. The milestone activities will include completion of any construction activities required for substantial completion, coordination of required Contractor maintenance activities, etc.

iii. The Consultant will assist the Contractor with the start-up and testing of new facilities. Following a sequentially coordinated initial start-up of the facility, the facility would be operated continuously. The Consultant will verify that, all mechanical equipment, associated hydraulic control devices, and conveyance components operate properly under actual operating conditions. This includes the verification that all hardwired electrical control interlocks and safeguards are functioning properly.

iv. The Consultant will maintain documentation of the areas of operational concern encountered during the manual start-up phase with a determination of whether the item of concern is a Contractor warranty issue or requires a design modification. The Consultant will monitor the documented concerns and promptly notify the Contractor of all warranty issues.

v. Design modifications will be promptly evaluated by the Consultant and recommendations shall be presented to the City for a determination of the necessity for implementation. The Consultant will complete the necessary check out of the instrumentation system components and initial loading of the control software simultaneously computer operation mode can be verified for each process

vi. There will be shutdowns associated with the new work that needs to be conducted within the vicinity of existing equipment etc. Coordination is required with the Contractor to keep shutdowns to a minimum. The Consultant shall review the Contractors proposals for any temporary conveyance facilities. For work within the areas of shutdowns, the Consultant shall review list of labor materials, estimation of time, and equipment necessary and written description of the work.

B. Task 7.2 Operations Manual

i. The Consultant will update the existing content that is in the current facility Operations Manual. The Consultant will update the current Operations Manual content to reflect modifications to existing facilities.

ii. Additions and modifications to the facility Operations Manual will cover new, or any modified and upgraded pump station and auxiliary systems included in the Project. New areas of the facility will be created as new sections of the Manual and will be completed in conjunction with the specific completion milestones of construction.

iii. Prior to submitting the final version of the Operations Manual and transferring to the City, the Consultant will conduct a detailed final validation and field verification process. Through this important quality control activity, the Consultant will verify that:

1) Content has been field-verified and checked at the installation.

2) Photographs are current and are reflective of well-maintained and clean conditions.

3) Relevant documentation, such as scanned documents, figures and drawings are appropriately categorized for insertion into the database.

4) Standard Operating Procedures are accurate and reflect actual "as-operated" conditions.

C. Task 7.3 PLC Programming and Startup Services

i. The Consultant will provide PLC Programming and Startup Services for the Arrowhead Water Production Facility (Jensen Systems). The scope of services will include installation of a PLC test program and witness at Factory Acceptance Testing (FAT), conduct SCADA interface testing, participate in I/O field point-to-point testing, configuration and set-up of Radio communication to the City SCADA system, and witness calibration checks and sign calibration reports.

ii. The scope of services includes demonstration of the operation of the PLC program, providing PLC program documentation and training City staff.

ASSUMPTIONS, CLARIFICATIONS, AND EXCLUSIONS

The extent and limitations of the duties, responsibilities, and authority of Consultant as assigned herein shall not be modified, except as Consultant may otherwise agree in writing. City's instructions to

Contractor(s) shall be issued through Consultant, who shall have authority to act on behalf of the City to the extent provided in this Scope of Services, except as otherwise provided in writing.

Consultant shall not be responsible for the means, methods, techniques, sequences, or procedures of construction selected by Contractor, unless otherwise specified in the construction documents or the safety precautions and programs incident to the work of Contractor. Consultant efforts shall be directed toward providing a greater degree of confidence for the City that the completed work of Contractor shall conform to the Contract Documents, but Consultant shall not be responsible for the failure of Contractor to perform the work in accordance with the construction documents.

The Consultant review shall only be for conformance with the design concept of the Project and compliance with the information given in the construction documents. Such review or other action shall not extend to means, methods, sequences, techniques, or procedures of construction selected by Contractor or to safety precautions and programs incident thereto. The Consultant shall receive and review (for general contents as required by the construction documents) maintenance and operating schedules and instructions, operation and maintenance manuals, guarantees, bonds, and certificates of inspection which are to be assembled by Contractor in accordance with the construction documents.

Consultant shall not be responsible for the acts or omissions of the Contractor, or subcontractor, or any of the Contractor's or subcontractor's agents or employees, or any other persons (except Consultant own employees and agents) at the site or otherwise performing any of the Contractor's work;

Limitations of Authority: Except upon written instructions, the Consultant:

1. will not authorize any deviation from the Contract Documents or approve any substitute materials or equipment;
2. will not undertake any of the responsibilities of Contractor, subcontractors or Contractor's superintendent, or expedite the work;
3. will not advise on or issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the Construction Documents;
4. will not advise on or issue directions as to safety precautions and programs in connection with the work; and
5. will not authorize City to occupy the Project in whole or in part.

Reimbursable costs allowance shall be utilized to reimburse for items such as reproduction, delivery, and mileage.

EXHIBIT "B"
COMPENSATION AND FEES

WILSON ENGINEERS

EXHIBIT "B"
CONSTRUCTION MANAGEMENT
SCOPE OF SERVICES
ARROWHEAD WPF AND PECOS WTP
FEE SCHEDULE

Task	Description	Cost
1	**PRE-CONSTRUCTION ASSISTANCE**	
1.1	Pre-Construction Assistance	$ 2,130.00
	SUBTOTAL TASK 1:	**$ 2,130.00**
2	**CONSTRUCTION MANAGEMENT**	
2.1	Weekly Construction Meetings	$ 69,920.00
2.2	CPM Schedule	$ 17,580.00
2.3	Requests for Information (RFI)	$ 6,970.00
2.4	Shop Drawing Submittals	$ 13,830.00
2.5	Requests for Proposal (RFP)	$ 8,200.00
2.6	Field Directive (FD)	$ 37,460.00
2.7	Contractor Payment Applications	$ 17,800.00
2.8	Public Outreach	$ 2,480.00
	SUBTOTAL TASK 2:	**$ 174,240.00**
3	**CONSTRUCTION INSPECTION**	
3.1	Inspection Services	$ 272,100.00
3.2	Landscape/Irrigation Inspection Services (IF APPLICABLE)	$ -
3.3	Project Closeout	$ 23,510.00
	SUBTOTAL TASK 3:	**$ 295,610.00**
4	**UTILITY COORDINATION**	
4.1	Utility Coordination	$ 2,710.00
	SUBTOTAL TASK 4:	**$ 2,710.00**
5	**MATERIALS TESTING**	
5.1	QC Test Program	$ 4,990.00
5.2	QA Test Program	$ 3,130.00
	SUBTOTAL TASK 5:	**$ 8,120.00**
6	**RECORD DRAWINGS**	
6.1	Record Drawings	$ -
	SUBTOTAL TASK 6:	**$ -**
7	**ALLOWANCES**	
7.1	Start-up and MOPO Services	$ 20,040.00
7.2	Operations Manual	$ 14,740.00
	SUBTOTAL TASK 7:	**$ 34,780.00**
SUBCONSULTANTS		
K&I Architects		$ 10,768.00
Heerup Engineering		$ 6,630.00
Jensen Systems		$ 23,850.00
RFI Consultants		$ 8,370.00
Materials Testing		$ 15,000.00
Mak Pro Consulting		$ 10,600.00
	SUBTOTAL SUBCONSULTANTS:	**$ 75,218.00**
ALLOWANCES		
Direct Expense Allowance		$ 500.00
Owner's Allowance		$ 30,000.00
	SUBTOTAL ALLOWANCES:	**$ 30,500.00**
	PROJECT TOTAL:	**$ 623,308.00**

WILSON ENGINEERS

EXHIBIT "B-2"
Hours and Rates

TASK DESCRIPTION	Principal	Sr. PM/Sr CM	Project Engineer	Electrical Engineer	Lead Inspector	Elec Inspector	Sr CADD Tech	Sr Admin	< PROJECT ROLE	TOTAL HOURS PER
	$ 205.00	$ 195.00	$ 145.00	$ 145.00	$ 135.00	$ 135.00	$ 100.00	$ 85.00	< HOURLY RATES	
1. Preconstruction Assistance	**0**	**4**	**0**	**0**	**8**	**2**	**0**	**0**		**14**
Preconstruction Assistance	0	4	0	0	8	2	0	0	*14*	
2. Construction Management	**0**	**168**	**124**	**40**	**484**	**124**	**40**	**372**		**1352**
Weekly Construction Meetings and Minutes	0	80	0	0	304	48	0	80	*512*	
Review CPM Schedule and Updates	0	32	0	0	56	28	0	0	*116*	
Prepare and Maintain RFI Log	0	2	0	0	16	0	0	52	*70*	
Prepare and Maintain Submittal Log	0	2	0	0	24	0	0	120	*146*	
Maintain RFP Submittal Log	0	8	0	0	24	0	0	40	*72*	
Prepare and Maintain Field Directives	0	16	116	40	8	24	40	40	*284*	
Review Monthly Pay Apps and Recommend	0	24	0	0	48	24	0	40	*136*	
Coord on Public Outreach and Attend Mtg	0	4	8	0	4	0	0	0	*16*	
3. Construction Inspection	**0**	**98**	**0**	**0**	**1520**	**508**	**0**	**32**		**2158**
Inspection Services	0	80	0	0	1440	460	0	0	*1980*	
Landscape Irrigation Services (if applicable)	0	0	0	0	0	0	0	0	*0*	
Project Closeout	0	18	0	0	80	48	0	32	*178*	
4. Utility Coordination	**0**	**2**	**16**	**0**	**0**	**0**	**0**	**0**		**18**
Preconstruction Assistance	0	2	16	0	0	0	0	0	*18*	
5. Materials Testing	**0**	**8**	**8**	**0**	**40**	**0**	**0**	**0**		**56**
QC Test Program	0	6	4	0	24	0	0	0	*34*	
Prepare and Maintain Materials QA Plan	0	2	4	0	16	0	0	0	*22*	
6. Record Drawings	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**		**0**
Record Drawings	0	0	0	0	0	0	0	0	*0*	
7. Allowances	**0**	**20**	**140**	**32**	**20**	**24**	**0**	**0**		**236**
Start up Assistance and MOPO	0	12	80	16	12	16	0	0	*136*	
Operations Manual	0	8	60	16	8	8	0	0	*100*	
8. Other Direct Costs										
9. Owner's Allowance										
TOTAL HOURS:	0	300	288	72	2072	658	40	404		**3834**

EXHIBIT "C"
INSURANCE REQUIREMENTS

1. General.

1.1 At the same time as execution of this Agreement, Consultant must furnish City a certificate of insurance on a standard insurance industry ACORD form. The ACORD form must be issued by an insurance company authorized to transact business in the State of Arizona possessing a current A.M. Best, Inc. rating of A-7, or better and legally authorized to do business in the State of Arizona with policies and forms satisfactory to City. Provided, however, the A.M. Best rating requirement will not be deemed to apply to required Workers' Compensation coverage.

1.2 Consultant and any of its subconsultants must procure and maintain, until all of their obligations have been discharged, including any warranty periods under this Agreement are satisfied, the insurances set forth below.

1.3 The insurance requirements set forth below are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement.

1.4 City in no way warrants that the minimum insurance limits contained in this Agreement are sufficient to protect Consultant from liabilities that might arise out of the performance of the Agreement services under this Agreement by Consultant, its agents, representatives, employees, subconsultants, and Consultant is free to purchase any additional insurance as may be determined necessary.

1.5 Failure to demand evidence of full compliance with the insurance requirements in this Agreement or failure to identify any insurance deficiency will not relieve Consultant from, nor will it be considered a waiver of its obligation to maintain the required insurance at all times during the performance of this Agreement.

1.6 Use of subconsultants: If any work is subcontracted in any way, Consultant must execute a written contract with subconsultant containing the same Indemnification Clause and Insurance Requirements as City requires of Consultant in this Agreement. Consultant is responsible for executing the Agreement with the subconsultant and obtaining Certificates of Insurance and verifying the insurance requirements.

2. Minimum Scope and Limits of Insurance. Consultant must provide coverage with limits of liability not less than those stated below.

2.1 *Professional Liability.* If the Agreement is the subject of any professional services or work performed by Consultant, or if Consultant engages in any professional services or work adjunct or residual to performing the work under this Agreement, Consultant must maintain Professional Liability insurance covering errors and omissions arising out of the work or services performed by Consultant, or anyone employed by Consultant, or anyone whose acts, mistakes, errors and omissions Consultant is legally liable, with a liability limit of $1,000,000 each claim and $2,000,000 all claims. In the event the Professional Liability

insurance policy is written on a "claims made" basis, coverage must extend for 3 years past completion and acceptance of the work or services, and Consultant, or its selected Design Professional will submit Certificates of Insurance as evidence the required coverage is in effect. The Design Professional must annually submit Certificates of Insurance citing that the applicable coverage is in force and contains the required provisions for a 3 year period.

2.2 *Commercial General Liability-Occurrence Form.* Consultant must maintain "occurrence" form Commercial General Liability insurance with a limit of not less than $2,000,000 for each occurrence, $4,000,000 aggregate. Said insurance must also include coverage for products and completed operations, independent contractors, personal injury and advertising injury. If any Excess insurance is utilized to fulfill the requirements of this paragraph, the Excess insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

2.3 *Automobile Liability-Any Auto or Owned, Hired and Non-Owned Vehicles*
Vehicle Liability: Consultant must maintain Business/Automobile Liability insurance with a limit of $1,000,000 each accident on Consultant owned, hired, and non-owned vehicles assigned to or used in the performance of Consultant's work or services under this Agreement. If any Excess or Umbrella insurance is utilized to fulfill the requirements of this paragraph, the Excess or Umbrella insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

2.4 *Workers Compensation and Employers Liability Insurance:* Consultant must maintain Workers Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Consultant employees engaged in the performance of work or services under this Agreement and must also maintain Employers' Liability insurance of not less than $1,000,000 for each accident and $1,000,000 disease for each employee.

3. Additional Policy Provisions Required.

3.1 *Self-Insured Retentions or Deductibles*. Any self-insured retentions and deductibles must be declared and approved by City. If not approved, City may require that the insurer reduce or eliminate any deductible or self-insured retentions with respect to City, its officers, officials, agents, employees, and volunteers.

3.1.1. Consultant's insurance must contain broad form contractual liability coverage.

3.1.2. Consultant's insurance coverage must be primary insurance with respect to City, its officers, officials, agents, and employees. Any insurance or self-insurance maintained by City, its officers, officials, agents, and employees will be in excess of the coverage provided by Consultant and must not contribute to it.

3.1.3. Consultant's insurance must apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

3.1.4. Coverage provided by Consultant must not be limited to the liability assumed under the indemnification provisions of this Agreement.

3.1.5. The policies must contain a severability of interest clause and waiver of subrogation against City, its officers, officials, agents, and employees, for losses arising from Work performed by Consultant for City.

3.1.6. Consultant, its successors and or assigns, are required to maintain Commercial General Liability insurance as specified in this Agreement for a minimum period of 3 years following completion and acceptance of the Work. Consultant must submit a Certificate of Insurance evidencing Commercial General Liability insurance during this 3 year period containing all the Agreement insurance requirements, including naming City of Chandler, its agents, representatives, officers, directors, officials and employees as Additional Insured as required.

3.1.7. If a Certificate of Insurance is submitted as verification of coverage, City will reasonably rely upon the Certificate of Insurance as evidence of coverage but this acceptance and reliance will not waive or alter in any way the insurance requirements or obligations of this Agreement.

3.2. *Insurance Cancellation During Term of Contract/Agreement.*

3.2.1. If any of the required policies expire during the life of this Agreement, Consultant must forward renewal or replacement Certificates to City within 10 days after the renewal date containing all the required insurance provisions.

3.2.2. Each insurance policy required by the insurance provisions of this Agreement must provide the required coverage and must not be suspended, voided or canceled except after thirty (30) days prior written notice has been given to City, except when cancellation is for non-payment of premium, then ten (10) days prior notice may be given. Such notice must be sent directly to Chandler Law-Risk Management Department, Post Office Box 4008, Mailstop 628, Chandler, Arizona 85225. If any insurance company refuses to provide the required notice, Consultant or its insurance broker must notify City of any cancellation, suspension, non-renewal of any insurance within seven (7) days of receipt of insurers' notification to that effect.

3.3 City as Additional Insured. The policies are to contain, or be endorsed to contain, the following provisions:

3.3.1. The Commercial General Liability and Automobile Liability policies are to contain, or be endorsed to contain, the following provisions: City, its officers, officials, agents, and employees are additional insureds with respect to liability arising out of activities performed by, or on behalf of, Consultant including City's general supervision of Consultant; Products and Completed operations of Consultant; and automobiles owned, leased, hired, or borrowed by Consultant.

3.3.2. City, its officers, officials, agents, and employees must be additional insureds to the full limits of liability purchased by Consultant even if those limits of liability are in excess of those required by this Agreement.

EXHIBIT "D"
SPECIAL CONDITIONS

Standard Details and Specifications. Consultant must be familiar with City's latest revision of the MAG Specifications and MAG Standard Details as amended by City. City's current amendment to the MAG Specifications, part of City's Unified Development Manual, may be found and downloaded from City's website at http://www.chandleraz.gov/udm.

City Ownership of Project Documents. All work products (electronically or manually generated) including, but not limited to: plans, specifications, cost estimates, field notes, tracings, studies, investigations, design analyses, original drawings, original mylars, Computer Aided Drafting and Design (CADD) file diskettes which reflect all final drawings, and other related documents which are prepared in the performance of this Agreement (collectively referred to as "Documents") are to be and remain the property of City and are to be delivered to the Project Manager before the final payment is made to Consultant. In the event these Documents are altered, modified or adapted without the written consent of Consultant, which consent Consultant must not unreasonably withhold, City agrees to hold Consultant harmless to the extent permitted by law from the legal liability arising out of City's alteration, modification or adaptation of the Documents.

Re-use of Documents. The parties agree the documents, drawings, specifications and designs, although the property of City, are prepared for this specific project and are not intended nor represented by Consultant to be suitable for re-use for any other project. Any re-use without written verification or adaptation by Consultant for the specific purpose intended will be at City's sole risk and without liability or legal exposure to Consultant.

Patent Fees and Royalties. Consultant must pay all license fees and royalties and assume all costs incidental to the use, in the performance of the work or the incorporation in the work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Agreement for use in the performance of the work and if, to the actual knowledge of City, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed by City in the Agreement. Consultant must defend, indemnify and hold harmless City and anyone directly or indirectly employed by City from and against all claims, damages, losses, and expenses (including attorneys' fees) arising out of any infringement of patent rights or copyrights incidental to the use in the performance of the work, or resulting from the incorporation in the work of any invention, design, process, product, or device not specified in the Agreement, and must defend all such claims in connection with any alleged infringement of such rights.

License to City for Reasonable Use. With this Agreement, Consultant and its subconsultants hereby grant a license to City, its agents, employees, and representatives for an indefinite period of time to reasonably use, make copies, and distribute as appropriate the Documents, works or deliverables developed or created as a result of the Project and this

Agreement. This license also includes the making of derivative works.

Documents to Bear Seal. Consultant and its subconsultants must endorse by professional seal all plans, works, and deliverables prepared by each for this Agreement as required by state law.

1. Contract Worker Access Controls, Badge and Key Access Requirements. A Contract Worker from Consultant's firm must not be allowed to begin work in any City facility without: (A) The prior completion and City's acceptance of the required background screening; and (8) when required, the Contract Worker's receipt of a City issued badge. A badge will be issued to a Contract Worker solely for access to City facility(s) to which the Contract Worker is assigned. Each Contract Worker who enters a City facility must use the badge issued to the Contract Worker.

2. Badges. After receipt of the badge application, the Contract Worker will proceed to the Badging Office for processing of the badge application and issuance of the badge. City will not process the badge application until the Contract Worker satisfies the required Background Screening (as defined herein). The Contract Worker must comply with all requirements and furnish all requested information as requested by the Badging Office. Any and all fees associated with security badging will be assessed in compliance with Chandler City Code §4-22.

3. Key Access Procedures. If the Contract Worker's services require keyed access to enter a City facility(s), a separate key issue/return form must be completed and submitted by Consultant for each key issued.

4. Stolen or Lost Badges or Keys. Consultant must report lost or stolen badges or keys to City immediately. A new badge application or key issue form must be completed and submitted along with payment of the applicable fees prior to issuance of a new badge or key.
5. Return of Badges or Keys. All badges and keys are the property of City and must be returned to City at the Badging Office within one (1) business day of when the Contract Worker's access to a City facility is no longer required to furnish the services under this Agreement. Consultant must collect a Contract Worker's badge and key(s) upon the termination of the Contract Worker's employment; when the Contract Worker's services are no longer required at the particular City facility(s); or upon termination, cancellation or expiration of this Agreement.

6. Consultant's default under this Section must include, but is not limited to the following: (1) Contract Worker gains access to a City facility(s) without the proper badge or key; (2) Contract Worker uses a badge or key of another to gain access to a City facility; (3) Contract Worker commences services under this Agreement without the proper badge, key or Background Screening; (4) Contract Worker or Consultant submits false information or negligently submits wrong information to City to obtain a badge, key or applicable Background Screening; or (5) Consultant fails to collect and timely return Contract Worker's badge or key upon termination of Contract Worker's employment,

reassignment of Contract Worker to another City facility or upon the expiration, cancellation or termination of this Agreement. Consultant acknowledges and agrees that the access control, badge and key requirements in this Section are necessary to preserve and protect public health, safety and welfare. Accordingly, Consultant agrees to properly cure any default under this Section within three (3) business days from the date notice of default is sent by City. The parties agree that Consultant's failure to properly cure any default under this Section must constitute a breach of this Section. In addition to any other remedy available to City at law or in equity, Consultant must be liable for and must pay to City the sum of one thousand dollars ($1,000.00) for each breach by Consultant of this Section. The parties further agree that the sum fixed above is reasonable and approximates the actual or anticipated loss to City at the time and making of this Agreement in the event that Consultant breaches this Section. Further, the parties expressly acknowledge and agree to the fixed sum set forth above because of the difficulty of proving City's actual damages in the event that Consultant breaches this Section. The parties further agree that three (3) breaches by Consultant of this Section arising out of any default within a consecutive period of three (3) months or three (3) breaches by Consultant of this Section arising out of the same default within a period of twelve (12) consecutive months will constitute a material breach of this Agreement by Consultant and City expressly reserves all of its rights, remedies and interests under this Agreement, at law and in equity including, but not limited to, termination of this Agreement.

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City Council Memorandum **Public Works & Utilities** **Memo No.** ST21-019

Date:	April 19, 2021
To:	Mayor and Council
Thru:	Joshua H. Wright, Acting City Manager Debra Stapleton, Assistant City Manager John Knudson, Public Works and Utilities Director
From:	Kevin Lair, Transportation Manager
Subject:	Purchase of Traffic Signal Maintenance Services

Proposed Motion:

Move City Council approve the purchase of traffic signal maintenance services from Roadway Electric, LLC, utilizing City of Mesa Contract No. 2017135, in an amount not to exceed $501,600, for the period of May 1, 2021, through April 30, 2022.

Background/Discussion:

The City's Transportation Division is responsible for the maintenance of 224 signalized intersections and over 29,500 streetlights. Although City staff manages the day-to-day maintenance of these assets, the rehabilitation of the underground infrastructure for the signals and the light emitting diode (LED) streetlight upgrades are completed by a contractor that offers specialized services for this type of work.

This contract will be used for the rehabilitation of existing underground infrastructure of approximately three intersections including installation of necessary conduit, junction boxes, and wiring. This contract will also be used for the upgrade of approximately 1,300 streetlights to LED that is included in the current year's budget. These LED streetlight replacements are estimated to save more than $42,000 in energy costs each year of operation.

Evaluation:

The City of Mesa competitively solicited and awarded a contract for traffic signal maintenance services. The City has a current Intergovernmental Agreement with the City of Mesa allowing for the cooperative use of their contracts.

Staff recommends cooperative use of this contract because it provides competitive pricing and Roadway Electric, LLC, has previously provided excellent service to the City. The term of this contract is valid from May 1, 2021, through April 30, 2022.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N

401.3310.6419.6ST705	General Government Capital Project	LED Street Light Upgrade/Conversion	$501,600	Y

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City Council Memorandum **Public Works & Utilities** **Memo No.** ST21-018

Date:	April 19, 2021
To:	Mayor and Council
Thru:	Joshua H. Wright, Acting City Manager Debra Stapleton, Assistant City Manager John Knudson, Public Works and Utilities Director
From:	Kevin Lair, Transportation Manager
Subject:	Purchase of Pole Painting Services

Proposed Motion:

Move City Council approve the purchase of pole painting services from OLS Restoration, Inc., utilizing City of Mesa Contract No. 2019012, in an amount not to exceed $120,000, for the period of May 1, 2021, through April 30, 2022.

Background/Discussion:

The City's Transportation Division is responsible for the maintenance of over 29,500 streetlights. Of those streetlights, approximately 14,500 (52%) are painted rather than galvanized. This contract will be used to repaint light poles located in arterial corridors and older subdivisions with streetlights that are more than 30 years old.

Evaluation:

The City of Mesa competitively solicited and awarded a contract for pole painting services. The City has a current Intergovernmental Agreement with the City of Mesa allowing for the cooperative use of their contracts. Staff recommends cooperative use of this contract because it provides competitive pricing and OLS Restoration, Inc., has previously provided excellent service to the City. The term of the City of Mesa contract is May 1, 2021, through April 30, 2022, with the option of two (2) one-year extensions.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
401.3310.6517.6ST051	General Government Capital Project	Streetlight Additions and Repairs	$120,000	Y

City Council Memorandum **Public Works & Utilities** **Memo No.** CP21-114

Date: April 19, 2021

To: Mayor and Council

Thru: Joshua H. Wright, Acting City Manager
Debra Stapleton, Assistant City Manager
John Knudson, Public Works and Utilities Director
Andrew Goh, Capital Projects Manager

From: Sandra Story, Engineering Project Manager

Subject: Professional Services Agreement No. WA1903.271, with Wilson Engineers, LLC, for the Arrowhead Water Production Facility Rehabilitation Post Design Services

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Proposed Motion:

Move City Council award Professional Services Agreement No. WA1903.271, to Wilson Engineers, LLC, for the Arrowhead Water Production Facility Rehabilitation Post Design Services, in an amount not to exceed $198,222.

Background/Discussion:

This project is a continuation of the Public Works & Utilities Department's ongoing initiative to modernize and rehabilitate the City's older water production facilities and replace aging pipe infrastructure. The Arrowhead Water Production Facility (WPF), located at 426 N. Arrowhead Drive, was constructed in 1988 to support water needs in the City. Recent inspections have identified the need to replace the existing pumps and corroded pump cans and piping, improve the facility building, and upgrade the electrical system. In addition, approximately 2,200 feet of 12-inch pipe, from the Arrowhead WPF south to Chandler Boulevard, will be replaced due to age and poor condition. These improvements are necessary for the facility to reliably provide water service to the surrounding vicinity.

This project scope of work includes design clarifications or modifications with the designer of record for seamless and continued coordination with utilities, other agencies, bidders, contractor, and construction management firms before and during construction of this project, as well as attendance at construction meetings, shop drawings, submittal reviews, environmental services, and preparation of final as-built drawings. The contract completion time is 400 calendar days following Notice to Proceed.

A related Construction Contract with Achen-Gardner Construction, LLC, for the Arrowhead WPF Rehabilitation and Pecos Surface Water Treatment Plant (SWTP) Surge System, is also scheduled for this City Council meeting.

A related Professional Services Agreement with Wilson Engineers, LLC, for the Arrowhead WPF Rehabilitation and Pecos SWTP Surge System Construction Management Services, is also scheduled for this City Council meeting.

A related Professional Services Agreement with Black & Veatch, for the Pecos SWTP Surge System

Post Design Services, is also scheduled for this City Council Meeting.

Evaluation:

The selection process was conducted in accordance with City policy and procedure and State law. This project is being performed under the On-Call Consultant Pre-Qualified List for Water and Wastewater Services. Staff recommends approval of this agreement with Wilson Engineers, LLC, based on qualifications, relevant firm experience, team experience, project understanding, and project approach.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
601.3820.6714.6WA023	Water Bonds	Water Main Replacements	$23,786	Y
601.3820.6814.6WA230	Water Bonds	Water Production Facility Imprv	$174,436	Y

Attachments

Location Map

Agreement - Wilson Engineers

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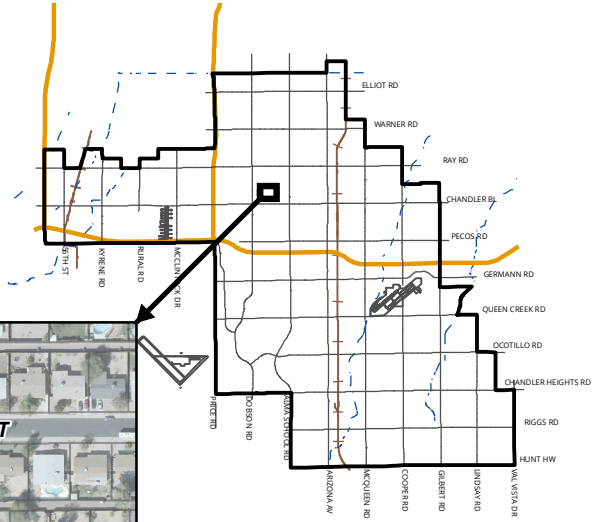
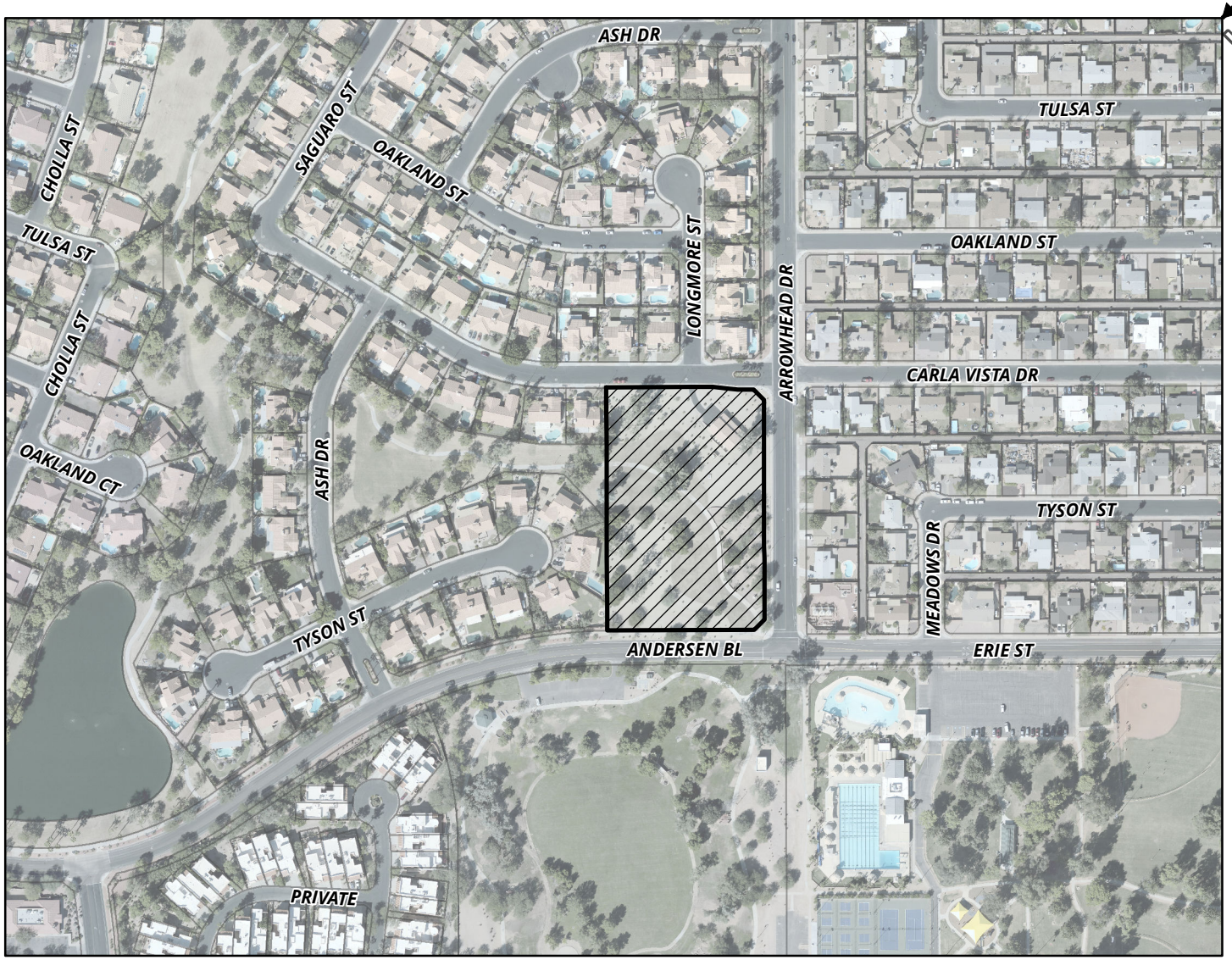
ARROWHEAD WATER PRODUCTION FACILITY IMPROVEMENTS POST DESIGN SERVICES PROJECT NO. WA1903.271





MEMO NO. CP21-114

PROJECT SITE

NTS

ChanGIS

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PROFESSIONAL SERVICES AGREEMENT
Post-Design Services
ARROWHEAD WATER PRODUCTION FACILITY REHABILITATION

Project No. WA1903.271

Council Date: April 22, 2021 Item No.

THIS AGREEMENT ("Agreement") is made and entered into on the _____ day of_____, 2021 ("Effective Date"), by and between City of Chandler, an Arizona municipal corporation, ("City"), and **Wilson Engineers, LLC**, an Arizona limited liability company, ("Consultant") (City and Consultant may individually be referred to as "Party" and collectively referred to as "Parties").

RECITALS

A. City proposes to engage Consultant to provide Post-Design Services for **ARROWHEAD WATER PRODUCTION FACILITY REHABILITATION** project as more fully described in **Exhibit "A"**, which is attached to and made a part of this Agreement by this reference.

B. Consultant is ready, willing, and able to provide the services described in **Exhibit "A"** for the compensation and fees set forth and as described in **Exhibit "B"**, which is attached to and made a part of this Agreement by this reference.

C. City desires to contract with Consultant to provide these services under the terms and conditions set forth in this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the premises and the mutual promises contained in this Agreement, City and Consultant agree as follows:

SECTION I--CONSULTANT'S SERVICES

Consultant must perform the services described in **Exhibit "A"** to City's satisfaction within the terms and conditions of this Agreement and within the care and skill that a person who provides similar services in Chandler, Arizona exercises under similar conditions. All work or services furnished by Consultant under this Agreement must be performed in a skilled and workmanlike manner. All fixtures, furnishings, and equipment furnished by Consultant as part of the work or services under this Agreement must be new, or the latest model, and of the most suitable grade and quality for the intended purpose of the work or service.

SECTION II--PERIOD OF SERVICE

Consultant must perform the services described in **Exhibit "A"** for the term of this Agreement. Unless amended in writing by the Parties, the Agreement term expires **400** calendar days after the Notice to Proceed (NTP) Date.

SECTION III--PAYMENT OF COMPENSATION AND FEES

Unless amended in writing by the Parties, Consultant's compensation and fees as more fully described in **Exhibit "B"** for performance of the services approved and accepted by City under this Agreement must not exceed **$198,222** for the full term of the Agreement. Consultant may not increase any compensation or fees under this Agreement without the City's prior written consent. Consultant must submit monthly requests for payment of services approved and accepted during the previous billing period and must include, as applicable, detailed invoices and receipts, a narrative description of the tasks accomplished during the billing period, a list of any deliverables submitted, and any subconsultant's or supplier's actual requests for payment plus similar narrative and listing of their work. Consultant must submit an Application and Certification for Payment Sheet with the monthly request for payment to: CapitalProjects.Payables@chandleraz.gov. Payment for those services negotiated as a lump sum will be made in accordance with the percentage of the work completed during the preceding billing period. Services negotiated as a not-to-exceed fee will be paid in accordance with the work effort expended on the service during the preceding month. All requests for payment must be submitted to City for review and approval. City will make payment for approved and accepted services within 30 calendar days of City's receipt of the request for payment. Consultant bears all responsibility and liability for any and all tax obligations that result from Consultant's performance under this Agreement.

SECTION IV--CITY'S OBLIGATIONS

As part of Consultant's services under this Agreement, City will provide furnished items, services, or obligations as detailed in **Exhibit "D"**.

SECTION V--GENERAL CONDITIONS

5.1 Notices. Unless otherwise provided herein, demands under this Agreement must be in writing and will be deemed to have been duly given and received either (a) on the date of service if personally served on the party to whom notice is to be given, or (b) on the third day after the date of the postmark of deposit by first class United States mail, registered or certified, postage prepaid and properly addressed as follows:

To City:	City of Chandler Public Works & Utilities Department Attn: CIP City Engineer P.O. Box 4008, Mail Stop 407 Chandler, AZ 85244-4008

With a Copy to:	Project Manager City of Chandler Public Works & Utilities Department P.O. Box 4008, Mail Stop 407 Chandler, AZ 85244-4008
To Consultant:	Mr. Phil Noonan Wilson Engineers, LLC 1620 W. Fountainhead Pkwy., Ste. 501 Tempe, AZ 85282

5.2 Records/Audit. Records of Consultant's direct personnel payroll, reimbursable expenses pertaining to this Agreement and records of accounts between City and Consultant must be kept on the basis of generally accepted accounting principles and must be made available to City and its auditors for up to three years following City's final acceptance of the services under this Agreement (this requirement is increased to five years if construction of this project is federally funded). City, its authorized representative, or any federal agency, reserves the right to audit Consultant's records to verify the accuracy and appropriateness of all cost and pricing data, including data used to negotiate this Agreement and any amendments. City reserves the right to decrease the total amount of Agreement price or payments made under this Agreement or request reimbursement from Consultant following final contract payment on this Agreement if, upon audit of Consultant's records, the audit discloses Consultant has provided false, misleading, or inaccurate cost and pricing data. Consultant will include a similar provision in all of its contracts with subconsultants who provide services under the Agreement to ensure that City, its authorized representative, or the appropriate federal agency, has access to the subconsultants' records to verify the accuracy of all cost and pricing data. City reserves the right to decrease Contract price or payments made on this Agreement or request reimbursement from Consultant following final payment on this Agreement if the above provision is not included in subconsultant agreements, and one or more subconsultants refuse to allow City to audit their records to verify the accuracy and appropriateness of all cost and pricing data. If, following an audit of this Agreement, the audit discloses Consultant has provided false, misleading, or inaccurate cost and pricing data, and the cost discrepancies exceed 1% of the total Agreement billings, Consultant will be liable for reimbursement of the reasonable, actual cost of the audit.

5.3 Alteration in Character of Work. Whenever an alteration in the character of work results in a substantial change in this Agreement, thereby materially increasing or decreasing the scope of services, cost of performance, or Project schedule, the work will be performed as directed by City. However, before any modified work is started, a written amendment must be approved and executed by City and Consultant. Such amendment must not be effective until approved by City. Additions to, modifications, or deletions from this Agreement as provided herein may be made, and the compensation to be paid to Consultant may accordingly be adjusted by mutual agreement of the Parties. It is distinctly understood and agreed that no claim for extra services or materials furnished by Consultant will be allowed by City except as provided herein, nor must Consultant do any work or furnish any materials not covered by this Agreement unless such work is first authorized in writing. Any

such work or materials furnished by Consultant without prior written authorization will be at Consultant's own risk, cost, and expense, and Consultant hereby agrees that without written authorization Consultant will make no claim for compensation for such work or materials furnished.

5.4 Termination. City and Consultant hereby agree to the full performance of the covenants contained herein, except that City reserves the right, at its discretion and without cause, to terminate or abandon any service provided for in this Agreement, or abandon any portion of the Project for which services have been performed by Consultant. In the event City abandons or suspends the services, or any part of the services as provided in this Agreement, City will notify Consultant in writing and immediately after receiving such notice, Consultant must discontinue advancing the work specified under this Agreement. Upon such termination, abandonment, or suspension, Consultant must deliver to City all drawings, plans, specifications, special provisions, estimates and other work entirely or partially completed, together with all unused materials supplied by City. Consultant must appraise the work Consultant has completed and submit Consultant's appraisal to City for evaluation. City may inspect Consultant's work to appraise the work completed. Consultant will receive compensation in full for services performed to the date of such termination. The fee will be paid in accordance with Section Ill of this Agreement, and as mutually agreed upon by Consultant and City. If there is no mutual agreement on payment, the final determination will be made in accordance with the "Disputes" provision in this Agreement. However, in no event may the fee exceed the fee set forth in Section Ill of this Agreement nor as amended in accordance with Section "Alteration in Character of Work." City will make the final payment within 60 days after Consultant has delivered the last of the partially completed items and the Parties agree on the final fee. If City is found to have improperly terminated the Agreement for cause or default, the termination will be converted to a termination for convenience in accordance with the provisions of this Agreement.

5.5 Indemnification. To the extent permitted by law, the Consultant ("lndemnitor") must indemnify, save and hold harmless City and its officers, officials, agents and employees ("lndemnitee") from any and all claims, actions, liabilities, damages, losses or expenses (including court costs, attorneys' fees and costs of claim processing, investigation and litigation) ("Claims") caused or alleged to be caused, in whole or in part, by the wrongful, negligent or willful acts, or errors or omissions of Consultant or any of its owners, officers, directors, agents, employees, or subconsultants in connection with this Agreement. This indemnity includes any claim or amount arising out of or recovered under workers' compensation law or on account of the failure of Consultant to conform to any federal, state or local law, statute, ordinance, rule, regulation or court decree. Consultant must indemnify lndemnitee from and against any and all Claims, except those arising solely from lndemnitee's own negligent or willful acts or omissions. Consultant is responsible for primary loss investigation, defense and judgment costs where this indemnification applies. In consideration of the award of this Agreement, Consultant agrees to waive all rights of subrogation against lndemnitee for losses arising from or related to this Agreement. The obligations of Consultant under this provision survive the termination or expiration of this Agreement.

5.6 Insurance Requirements. Consultant must procure insurance under the terms and

conditions and for the amounts of coverage set forth in **Exhibit "C"** against claims that may arise from or relate to performance of the work under this Agreement by Consultant and its agents, representatives, employees, and subconsultants. Consultant and any subconsultant must maintain this insurance until all of their obligations have been discharged, including any warranty periods under this Agreement. These insurance requirements are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement. City in no way warrants that the minimum limits stated in **Exhibit "C"** are sufficient to protect Consultant from liabilities that might arise out of the performance of the work under this Agreement by Consultant, Consultant's agents, representatives, employees, or subconsultants. Consultant is free to purchase such additional insurance as may be determined necessary.

5.7 Cooperation and Further Documentation. Consultant agrees to provide City such other duly executed documents as may be reasonably requested by City to implement the intent of this Agreement.

5.8 Successors and Assigns. City and Consultant each bind itself, its partners, successors, assigns, and legal representatives to the other party to this Agreement and to the partners, successors, assigns, and legal representatives of such other party in respect to all covenants of this Agreement. Neither City nor Consultant may assign, sublet, or transfer its interest in this Agreement without the written consent of the other party. In no event may any contractual relation be created between any third party and City.

5.9 Disputes. In any dispute arising out of an interpretation of this Agreement or the duties required not disposed of by agreement between Consultant and City, the final determination at the administrative level will be made by City Engineer.

5.10 Completeness and Accuracy of Consultant's Work. Consultant must be responsible for the completeness and accuracy of Consultant's services, data, and other work prepared or compiled under Consultant's obligation under this Agreement and must correct, at Consultant's expense, all willful or negligent errors, omissions, or acts that may be discovered. Correction of errors disclosed and determined to exist during any construction of the project on architectural or engineering drawings and specifications must be accomplished by Consultant. The cost of the design necessary to correct those errors attributable to Consultant and any damage incurred by City as a result of additional construction costs caused by such engineering or architectural errors will be chargeable to Consultant and will not be considered a cost of the Work. The fact that City has accepted or approved Consultant's work will in no way relieve Consultant of any of Consultant's responsibilities.

5.11 Reporting. Written monthly reports, along with updated work schedules, will be made by Consultant in the format prescribed by City. These reports will be delivered to City per schedule. When requested by City, Consultant will attend Council meetings and provide finished documents including correspondence for Council action, supporting charts, graphs, drawings and colored slides of same.

5.12 Withholding Payment. City reserves the right to withhold funds from Consultant's payments up to the amount equal to the claims City may have against Consultant until such

time that a settlement on those claims has been reached.

5.13 City's Right of Cancellation. The Parties acknowledge that this Agreement is subject to cancellation by City under the provisions of Section 38-511, Arizona Revised Statutes (A.R.S.).

5.14 Independent Consultant. For this Agreement Consultant constitutes an independent contractor. Any provisions in this Agreement that may appear to give City the right to direct Consultant as to the details of accomplishing the work or to exercise a measure of control over the work means that Consultant must follow the wishes of City as to the results of the work only. These results must comply with all applicable laws and ordinances.

5.15 Project Staffing. Prior to the start of any work under this Agreement, Consultant must submit to City detailed resumes of key personnel that will be involved in performing services prescribed in the Agreement. City hereby acknowledges its acceptance of such personnel to perform services under this Agreement. At any time hereafter that Consultant desires to change key personnel while performing under the Agreement, Consultant must submit the qualifications of the new personnel to City for prior approval. Key personnel include, but are not limited to, principals-in-charge, project manager, and project Consultant. Consultant will maintain an adequate and competent staff of qualified persons, as may be determined by City, throughout the performance of this Agreement to ensure acceptable and timely completion of the Scope of Services. If City objects, with reasonable cause, to any of Consultant's staff, Consultant must take prompt corrective action acceptable to City and, if required, remove such personnel from the Project and replace with new personnel agreed to by City.

5.16 Consultants or Subconsultants. Prior to beginning the work, Consultant must furnish City for approval the names of consultants or subconsultants to be used under this Agreement. Any subsequent changes are subject to City's written prior approval.

5.17 Force Majeure. If either party is delayed or prevented from the performance of any act required under this Agreement by reason of acts of God or other cause beyond the control and without fault of the Party (financial inability excepted), performance of that act may be excused, but only for the period of the delay, if the Party provides written notice to the other Party within ten days of such act. The time for performance of the act may be extended for a period equivalent to the period of delay from the date written notice is received by the other Party.

5.18 Compliance with Federal Laws. Consultant understands and acknowledges the applicability of the Americans with Disabilities Act, the Immigration Reform and Control Act of 1986 and the Drug Free Workplace Act of 1989 to it. Consultant agrees to comply with these laws in performing this Agreement and to permit City to verify such compliance.

5.19 No Israel Boycott. By entering into this Agreement, Consultant certifies that Consultant is not currently engaged in, and agrees for the duration of the Agreement, not to engage in a boycott of Israel as defined by state statute.

5.20 Legal Worker Requirements. A.R.S. § 41-4401 prohibits City from awarding a contract to

any consultant who fails, or whose subconsultants fail, to comply with A.R.S. § 23-214(A). Therefore, Consultant agrees Consultant and each subconsultant it uses warrants their compliance with all federal immigration laws and regulations that relate to their employees and their compliance with § 23-214, subsection A. A breach of this warranty will be deemed a material breach of the Agreement and may be subject to penalties up to and including termination of the Agreement. City retains the legal right to inspect the papers of any Consultant's or subconsultant's employee who provides services under this Agreement to ensure that Consultant and subconsultants comply with the warranty under this provision.

5.21 Lawful Presence Requirement. A.R.S. §§ 1-501 and 1-502 prohibit City from awarding a contract to any natural person who cannot establish that such person is lawfully present in the United States. To establish lawful presence, a person must produce qualifying identification and sign a City-provided affidavit affirming that the identification provided is genuine. This requirement will be imposed at the time of contract award. This requirement does not apply to business organizations such as corporations, partnerships, or limited liability companies.

5.22 Covenant Against Contingent Fees. Consultant warrants that no person has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, and that no member of the Chandler City Council, or any City employee has any interest, financially, or otherwise, in Consultant's firm. For breach or violation of this warrant, City may annul this Agreement without liability or, at its discretion, to deduct from the Agreement price or consideration, the full amount of such commission, percentage, brokerage, or contingent fee.

5.23 Non-Waiver Provision. The failure of either Party to enforce any of the provisions of this Agreement or to require performance of the other Party of any of the provisions hereof must not be construed to be a waiver of such provisions, nor must it affect the validity of this Agreement or any part thereof, or the right of either Party to thereafter enforce each and every provision.

5.24 Disclosure of Information Adverse to City's Interests. To evaluate and avoid potential conflicts of interest, Consultant must provide written notice to City, as set forth in this Section, of any work or services performed by Consultant for third parties that may involve or be associated with any real property or personal property owned or leased by City. Such notice must be given 7 business days prior to commencement of the services by Consultant for a third party, or 7 business days prior to an adverse action as defined below. Written notice and disclosure must be sent in accordance with Section 6.7 above. An adverse action under this Agreement includes, but is not limited to: (a) using data as defined in the Agreement acquired in connection with this Agreement to assist a third party in pursuing administrative or judicial action against City; or (b) testifying or providing evidence on behalf of any person in connection with an administrative or judicial action against City; or (c) using data to produce income for Consultant or its employees independently of performing the services under this Agreement, without the prior written consent of City. Consultant represents that except for those persons, entities, and projects identified to City, the services performed by Consultant under this Agreement are not expected to create an

interest with any person, entity, or third party project that is or may be adverse to City's interests. Consultant's failure to provide a written notice and disclosure of the information as set forth in this Section constitute a material breach of this Agreement.

5.25 Data Confidentiality and Data Security. As used in the Agreement, "data" means all information, whether written or verbal, including plans, photographs, studies, investigations, audits, analyses, samples, reports, calculations, internal memos, meeting minutes, data field notes, work product, proposals, correspondence and any other similar documents or information prepared by, obtained by, or transmitted to Consultant or its subconsultants in the performance of this Agreement. The Parties agree that all data, regardless of form, including originals, images, and reproductions, prepared by, obtained by, or transmitted to Consultant or its subconsultants in connection with Consultant's or its subconsultant's performance of this Agreement is confidential and proprietary information belonging to City. Except as specifically provided in this Agreement, Consultant or its subconsultants must not divulge data to any third party without City's prior written consent. Consultant or its subconsultants must not use the data for any purposes except to perform the services required under this Agreement. These prohibitions do not apply to the following data provided to Consultant or its subconsultants have first given the required notice to City: (a) data which was known to Consultant or its subconsultants prior to its performance under this Consultant or its subconsultants by a third party, who to the best of Consultant's or its subconsultants' knowledge and belief, had the legal right to make such disclosure and Consultant or its subconsultants are not otherwise required to hold such data in confidence; or (c) data which is required to be disclosed by virtue of law, regulation, or court order, to which Consultant or its subconsultants are subject. In the event Consultant or its subconsultants are required or requested to disclose data to a third party, or any other information to which Consultant or its subconsultants became privy as a result of any other contract with City, Consultant must first notify City as set forth in this Section of the request or demand for the data. Consultant or its subconsultants must give City sufficient facts so that City can be given an opportunity to first give its consent or take such action that City may deem appropriate to protect such data or other information from disclosure. All data must continue to be subject to the confidentiality agreements of this Agreement. Consultant or its subconsultants assume all liability to maintain the confidentiality of the data in its possession and agrees to compensate City if any of the provisions of this Section are violated by Consultant, its employees, agents or subconsultants. Solely for the purposes of seeking injunctive relief, it is agreed that a breach of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. Consultant agrees that the requirements of this Section must be incorporated into all subagreements entered into by Consultant. A violation of this Section may result in immediate termination of this Agreement without notice.

5.26 Personal Identifying Information-Data Security. Personal identifying information, financial account information, or restricted City information, whether electronic format or hard copy, must be secured and protected at all times by Consultant or its subconsultants. At a minimum, Consultant or its subconsultants must encrypt or password-protect electronic files. This includes data saved to laptop computers, computerized devices, or removable storage devices. When personal identifying information, financial account information, or restricted City information, regardless of its format, is no longer necessary,

the information must be redacted or destroyed through appropriate and secure methods that ensure the information cannot be viewed, accessed, or reconstructed. In the event that data collected or obtained by Consultant or its subconsultants in connection with this Agreement is believed to have been compromised, Consultant or its subconsultants must immediately notify City contact. Consultant agrees to reimburse City for any costs incurred by City to investigate potential breaches of this data and, where applicable, the cost of notifying individuals who may be impacted by the breach. Consultant agrees that the requirements of this Section must be incorporated into all subcontracts entered into by Consultant. It is further agreed that a violation of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. A violation of this Section may result in immediate termination of this Agreement without notice. The obligations of Consultant or its subconsultants under this Section must survive the termination of this Agreement.

5.27 Jurisdiction and Venue. This Agreement is made under, and must be construed in accordance with and governed by the laws of the State of Arizona without regard to the conflicts or choice of law provisions thereof. Any action to enforce any provision of this Agreement or to obtain any remedy with respect hereto must be brought in the courts located in Maricopa County, Arizona, and for this purpose, each Party hereby expressly and irrevocably consents to the jurisdiction and venue of such court.

5.28 Survival. All warranties, representations, and indemnifications by Consultant must survive the completion or termination of this Agreement.

5.29 Modification. Except as expressly provided herein to the contrary, no supplement, modification, or amendment of any term of this Agreement will be deemed binding or effective unless in writing and signed by the Parties.

5.30 Severability. If any provision of this Agreement or the application to any person or circumstance may be invalid, illegal or unenforceable to any extent, the remainder of this Agreement and the application will not be affected and will be enforceable to the fullest extent permitted by law.

5.31 Integration. This Agreement contains the full agreement of the Parties. Any prior or contemporaneous written or oral agreement between the Parties regarding the subject matter is merged and superseded.

5.32 Time is of the Essence. Time of each of the terms, covenants, and conditions of this Agreement is hereby expressly made of the essence.

5.33 Date of Performance. If the date of performance of any obligation or the last day of any time period provided for should fall on a Saturday, Sunday, or holiday for City, the obligation will be due and owing, and the time period will expire, on the first day after which is not a Saturday, Sunday or legal City holiday. Except as may otherwise be set forth in this Agreement, any performance provided for herein will be timely made if completed no later than 5:00 p.m. (Chandler time) on the day of performance.

5.34 Third Party Beneficiary. Nothing under this Agreement will be construed to give any

rights or benefits in the Agreement to anyone other than City and Consultant, and all duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of City and Consultant and not for the benefit of any other party.

5.35 Conflict in Language. All work performed must conform to all applicable City of Chandler codes, ordinances, and requirements as outlined in this Agreement. If there is a conflict in interpretation between provisions in this Agreement and those in **Exhibit "A"**, the provisions in this Agreement prevail.

5.36 Document/Information Release. Documents and materials released to Consultant, which are identified by City as sensitive and confidential, are City's property. The document/material must be issued by and returned to City upon completion of the services under this Agreement. Consultant secondary distribution, disclosure, copying, or duplication in any manner is prohibited without City's prior written approval. The document/material must be kept secure at all times. This directive applies to all City documents, whether in photographic, printed, or electronic data format.

5.37 Exhibits. The following exhibits are made a part of this Agreement and are incorporated by reference:

Exhibit A - Scope of Services / Schedule
Exhibit B - Compensation and Fees
Exhibit C - Insurance Requirements
Exhibit D - Special Conditions
Exhibit E – Federal Requirements (if applicable)

5.38 Special Conditions. As part of the services Consultant provides under this Agreement, Consultant agrees to comply with and fully perform the special terms and conditions set forth in **Exhibit "D"**, which is attached to and made a part of this Agreement.

5.39 Non-Discrimination and Anti-Harassment Laws. Consultant must comply with all applicable City, state, and federal non-discrimination and anti-harassment laws, rules, and regulations.

5.40 Licenses and Permits. Beginning with the Effective Date and for the full term of this Agreement, Consultant must maintain all applicable City, state, and federal licenses and permits required to fully perform Consultant's services under this Agreement.

5.41 Warranties. Consultant must furnish a one-year warranty on all work and services performed under this Agreement. Consultant must furnish, or cause to be furnished, a two-year warranty on all fixtures, furnishings, and equipment furnished by Consultant, subconsultants or suppliers under this Agreement. Any defects in design, workmanship, or materials that do not comply with this Agreement must be corrected by Consultant (including, but not limited to, all parts and labor) at Consultant's sole cost and expense. All written warranties and redlines for as-built conditions must be delivered to City on or before City's final acceptance of Consultant's services under this Agreement.

5.42 Cooperative Purchasing Agreement (S.A.V.E. – Strategic Alliance for Volume Expenditures). In addition to City of Chandler and with the approval of Consultant, this Agreement may be extended for use by other municipalities, school districts, and government agencies of the State. Any such usage by other entities must be in accordance with the ordinance, charter, or procurement rules and regulations of the respective political entity.

5.43 Budget Approval into Next Fiscal Year. This Agreement will commence on the Effective Date and continue in full force and effect until it is terminated or expires in accordance with the provisions of this Agreement. The Parties recognize that the continuation of this Agreement after the close of the City's fiscal year, which ends on June 30 of each year, is subject to the City Council's approval of a budget that includes an appropriation for this item as an expenditure. The City does not represent that this budget item will be actually adopted. This determination is solely made by the City Council.

SIGNATURE PAGE TO FOLLOW

This Agreement will be in full force and effect only when it has been approved and executed by the duly authorized City officials.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the Effective Date.

"CITY"
CITY OF CHANDLER

_____
MAYOR

Recommended By:

_____
Andrew Goh, P.E.
CIP City Engineer

APPROVED AS TO FORM:

_____
City Attorney

ATTEST:

_____
City Clerk Seal

"CONSULTANT"
Wilson Engineers, LLC

_____ 3/16/21
Signature Date

Phil Noonan
Print Name

Principal
Title

Phil.Noonan@wilson-engineers.com
Signer Email Address

EXHIBIT "A"
SCOPE OF SERVICES/SCHEDULE

EXHIBIT A
SCOPE OF WORK
ARROWHEAD WATER PRODUCTION FACILITY PROJECT
POST DESIGN SERVICES

Project Description

The project includes the rehabilitation of the Chandler Arrowhead Water Production Facility, an associated 16-inch diameter waterline that runs east along Carla Vista Drive and then south along Arrowhead Drive, and a surge tank addition at the Pecos WTP.

The Arrowhead Pump Water Production Facility rehabilitation includes removal and replacement of the existing vertical turbine pumps, the existing pump suction line, and associated pump cans, potential addition of a concrete vault deck or new vault grating, replacement of the pump discharge header, addition of a new electrical room, replacement of the existing MCC, addition of a new PLC and associated instrumentation conduits/cables, installation of new Variable Frequency Drives, installation of a new bathroom, removal and replacement of the existing generator, modifications to the existing roof structure with the addition of access hatches, replacement of the HVAC unit, new electrical conduits, and general building improvements.

The replacement of an existing 12-inch/16-inch diameter asbestos cement waterline is also part of this project. The Work includes the demolition and removal of approximately 2,100 linear feet of an existing asbestos cement pipe and the installation of new 16-inch diameter PVC pipe in the same alignment. A portion of the waterline will be in the Arrowhead Drive right-of-way alignment, and a portion will be in the Arrowhead Public Park.

The Pecos WTP work within this project includes the installation of a new surge tank along with associated components which include its concrete pad, control system and interface with SCADA. There are also check valves which require replacement.

For this project Wilson Engineers will be conducting the Construction Management Services for the Arrowhead Water Production Facility Modification, associated 16-inch diameter waterline, and overseeing the construction of the Pecos WTP Surge Tank.

Project Tasks

The Scope of Services describes construction engineering services to be provided by Wilson Engineers, LLC. (Consultant) for the City of Chandler (City). These construction engineering services are related to the post design services for the Arrowhead Water Production Facility Project.

The Consultant shall provide post-design phase construction-related services including attending pre-construction meetings, attending construction meetings, reviewing and responding to Requests for Information, reviewing shop drawing submittals, and preparing record drawings. Post-design phase efforts will specifically consist of the following tasks:

Task 1 – Pre-Construction Assistance
Task 2 – Engineering Design Services During Construction
Task 3 – Record Drawings

The level of effort associated with these services is proposed in Exhibit B.

Task 1- PRE-CONSTRUCTION ASSISTANCE

A. Task 1.1 – Pre-construction assistance

i. The Consultant will attend the pre-construction conference. At the conference, the role of each entity will be discussed along with appropriate coordination procedures. The preparation of meeting agenda and meeting minutes is part of a separate scope of services. The Resident Project Representative (RPR) will conduct the meeting.

ii. Consultant must attend one coordination meeting with the Public Outreach Consultant to review improvements and properties requiring specific outreach efforts.

Task 2 - ENGINEERING DESIGN SERVICES DURING CONSTRUCTION

B. Task 2.1 Attend Construction Meetings

i. Consultant must attend weekly construction meetings. Each meeting includes agenda and minutes; Request for Information (RFI); Shop Drawing; Request for Information (RFI); Field Directive (FD); Material Certification; and Allowance Logs. Consultant assumes a total of 52 weekly meetings will be held.

B. Task 2.2 Respond to Requests for Information (RFI's)

ii. Consultant will issue necessary interpretations and clarifications of the construction documents; have authority, as City's representative, to require special inspection or testing of the work; act as initial interpreter of the requirements of the construction documents and judge the acceptability of the work thereunder, and make decisions on all claims of City and Contractor(s) relating to the acceptability of the work or the interpretation of the requirements of the construction documents pertaining to the execution and progress of the work. Consultant will render interpretations or decisions in good faith and in accordance with the requirements of the construction documents.

iii. Consultant will respond to the City's representative and/or Contractor to clarify and/or interpret technical or design-related questions. Consultant will respond to issues raised during construction regarding interpretation and clarification of the contractual administrative and technical requirements of the construction documents. Consultant will serve as the City's advisor in resolution of these issues.

iv. Consultant will prepare and maintain a submittal log of all RFI's. Consultant assumes a maximum of 80 RFI responses for the Arrowhead WPF and Pipeline portion and ten (10) RFIs for the Pecos WTP Surge System. Consultant will coordinate with all sub consultants and B&V (under contract with the City).

C. Task 2.3 Shop Drawing Submittals

v. Consultant will receive, review, evaluate, and distribute (or take other appropriate action in respect of) shop drawings, samples, test results, and other data which Contractor is required to submit. Consultant review shall be for conformance with the design concept of the Project and compliance with the information given in the construction documents. Such review or other action shall not extend to means, methods, sequences, techniques, or procedures of construction selected by Contractor(s), or to safety precautions and programs associated thereto. Consultant will receive and review (for general contents as required by the construction

documents) maintenance and operating schedules and instructions, operation and maintenance manuals, guarantees, and certificates of inspection, which are to be assembled by Contractor(s) in accordance with the construction documents.

vi. Consultant will maintain a submittal log showing dates of submittal, transmittal action to other sub-consultants, dates of return, and review action. Copies of the log shall be furnished to the City and the Contractor weekly. Consultant will promptly and in accordance with Project schedule requirements, review and approve, reject or take other appropriate action on the Contractor's request for substitutions. Consultant will not approve any proposed substitution unless such substitution conforms to the Project design concept and the construction documents including the contract price.

vii. Task effort is based on receiving an estimated total of 75 shop drawing submittals with 30% of the shop drawings requiring second review for the Arrowhead WPF and the pipeline and 20 shop drawing submittals for the Pecos Surge system. The Consultant will coordinate with sub consultants and B&V (under a separate contract with the City). The Consultant will not review Pecos Surge system shop drawings, however, will coordinate review process.

Task 3 - RECORD DRAWINGS

D. Task 3.1 Record Drawings

viii. The Consultant will prepare a set of record drawings showing those changes made during construction. Record drawing information shall be based on marked-up prints, drawings, and other data furnished by Contractor(s) to Engineer.

ix. The Consultant will provide resident engineer stamp/certification on record drawings cover sheet, as well as ensure that all required signatures are present on the cover sheet.

x. The Consultant will provide and deliver record drawings in mylar, paper and digital pdf format to the City as required for as-built submittal process to the City Project Manager.

EXHIBIT "B"
COMPENSATION AND FEES

WILSON ENGINEERS

EXHIBIT "B"
POST DESIGN
SCOPE OF SERVICES
ARROWHEAD WPF AND PECOS WTP
FEE SCHEDULE

Task	Description	Cost
1	**PRE-CONSTRUCTION ASSISTANCE**	
1.1	Pre-Construction Assistance	$ 970.00
	SUBTOTAL TASK 1:	**$ 970.00**
2	**CONSTRUCTION MANAGEMENT**	
2.1	Weekly Construction Meetings	$ 25,780.00
2.2	Requests for Information (RFI)	$ 42,240.00
2.3	Shop Drawing Submittals	$ 84,360.00
	SUBTOTAL TASK 2:	**$ 152,380.00**
3	**RECORD DRAWINGS**	
3.1	Record Drawings	$ 23,810.00
	SUBTOTAL TASK 3:	**$ 23,810.00**
SUBCONSULTANTS		
K&I Architects		$ 7,608.00
RFI Consultants		$ 744.00
Heerup Engineering		$ 2,210.00
	SUBTOTAL SUBCONSULTANTS:	**$ 10,562.00**
ALLOWANCES		
Direct Expense Allowance		$ 500.00
Owner's Allowance		$ 10,000.00
	SUBTOTAL ALLOWANCES:	**$ 10,500.00**
	PROJECT TOTAL:	**$ 198,222.00**

WILSON ENGINEERS

EXHIBIT "B-2"
Hours and Rates

TASK DESCRIPTION	Principal	Sr. PM/Sr. CM	Project Engineer	Electrical Engineer	Sr CADD Technicians	Senior Admin	< PROJECT ROLE	TOTAL HOURS PER
	$ 205.00	$ 195.00	$ 145.00	$ 145.00	$ 100.00	$ 85.00	< HOURLY RATES	
1. Pre-Construction Assistance	**0**	**2**	**4**	**0**	**0**	**0**		**6**
Attend Pre-construction Meeting	0	2	4	0	0	0	*6*	
2. Construction Management	**0**	**104**	**528**	**292**	**64**	**80**		**1068**
Weekly Construction Meeting	0	40	100	24	0	0	*164*	
Request for Information	0	24	120	88	40	40	*312*	
Shop Drawing Submittals	0	40	308	180	24	40	*592*	
3. Record Drawings	**0**	**0**	**54**	**20**	**124**	**8**		**206**
Transfer of Redlines to Mylar	0	0	48	20	120	0	*188*	
Provide Certifications on Cover	0	0	4	0	4	4	*12*	
Deliver to City	0	0	2	0	0	4	*6*	
6. Other Direct Costs								
6. Owners Allowance								
TOTAL HOURS:	0	106	586	312	188	88		**1280**

EXHIBIT "C"
INSURANCE REQUIREMENTS

1. General.

1.1 At the same time as execution of this Agreement, Consultant must furnish City a certificate of insurance on a standard insurance industry ACORD form. The ACORD form must be issued by an insurance company authorized to transact business in the State of Arizona possessing a current A.M. Best, Inc. rating of A-7, or better and legally authorized to do business in the State of Arizona with policies and forms satisfactory to City. Provided, however, the A.M. Best rating requirement will not be deemed to apply to required Workers' Compensation coverage.

1.2 Consultant and any of its subconsultants must procure and maintain, until all of their obligations have been discharged, including any warranty periods under this Agreement are satisfied, the insurances set forth below.

1.3 The insurance requirements set forth below are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement.

1.4 City in no way warrants that the minimum insurance limits contained in this Agreement are sufficient to protect Consultant from liabilities that might arise out of the performance of the Agreement services under this Agreement by Consultant, its agents, representatives, employees, subconsultants, and Consultant is free to purchase any additional insurance as may be determined necessary.

1.5 Failure to demand evidence of full compliance with the insurance requirements in this Agreement or failure to identify any insurance deficiency will not relieve Consultant from, nor will it be considered a waiver of its obligation to maintain the required insurance at all times during the performance of this Agreement.

1.6 Use of subconsultants: If any work is subcontracted in any way, Consultant must execute a written contract with subconsultant containing the same Indemnification Clause and Insurance Requirements as City requires of Consultant in this Agreement. Consultant is responsible for executing the Agreement with the subconsultant and obtaining Certificates of Insurance and verifying the insurance requirements.

2. Minimum Scope and Limits of Insurance. Consultant must provide coverage with limits of liability not less than those stated below.

2.1 *Professional Liability.* If the Agreement is the subject of any professional services or work performed by Consultant, or if Consultant engages in any professional services or work adjunct or residual to performing the work under this Agreement, Consultant must maintain Professional Liability insurance covering errors and omissions arising out of the work or services performed by Consultant, or anyone employed by Consultant, or anyone whose acts, mistakes, errors and omissions Consultant is legally liable, with a liability limit of $1,000,000 each claim and $2,000,000 all claims. In the event the Professional Liability

insurance policy is written on a "claims made" basis, coverage must extend for 3 years past completion and acceptance of the work or services, and Consultant, or its selected Design Professional will submit Certificates of Insurance as evidence the required coverage is in effect. The Design Professional must annually submit Certificates of Insurance citing that the applicable coverage is in force and contains the required provisions for a 3 year period.

2.2 *Commercial General Liability-Occurrence Form.* Consultant must maintain "occurrence" form Commercial General Liability insurance with a limit of not less than $2,000,000 for each occurrence, $4,000,000 aggregate. Said insurance must also include coverage for products and completed operations, independent contractors, personal injury and advertising injury. If any Excess insurance is utilized to fulfill the requirements of this paragraph, the Excess insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

2.3 *Automobile Liability-Any Auto or Owned, Hired and Non-Owned Vehicles*
Vehicle Liability: Consultant must maintain Business/Automobile Liability insurance with a limit of $1,000,000 each accident on Consultant owned, hired, and non-owned vehicles assigned to or used in the performance of Consultant's work or services under this Agreement. If any Excess or Umbrella insurance is utilized to fulfill the requirements of this paragraph, the Excess or Umbrella insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

2.4 *Workers Compensation and Employers Liability Insurance:* Consultant must maintain Workers Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Consultant employees engaged in the performance of work or services under this Agreement and must also maintain Employers' Liability insurance of not less than $1,000,000 for each accident and $1,000,000 disease for each employee.

3. Additional Policy Provisions Required.

3.1 *Self-Insured Retentions or Deductibles*. Any self-insured retentions and deductibles must be declared and approved by City. If not approved, City may require that the insurer reduce or eliminate any deductible or self-insured retentions with respect to City, its officers, officials, agents, employees, and volunteers.

3.1.1. Consultant's insurance must contain broad form contractual liability coverage.

3.1.2. Consultant's insurance coverage must be primary insurance with respect to City, its officers, officials, agents, and employees. Any insurance or self-insurance maintained by City, its officers, officials, agents, and employees will be in excess of the coverage provided by Consultant and must not contribute to it.

3.1.3. Consultant's insurance must apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

3.1.4. Coverage provided by Consultant must not be limited to the liability assumed under the indemnification provisions of this Agreement.

3.1.5. The policies must contain a severability of interest clause and waiver of subrogation against City, its officers, officials, agents, and employees, for losses arising from Work performed by Consultant for City.

3.1.6. Consultant, its successors and or assigns, are required to maintain Commercial General Liability insurance as specified in this Agreement for a minimum period of 3 years following completion and acceptance of the Work. Consultant must submit a Certificate of Insurance evidencing Commercial General Liability insurance during this 3 year period containing all the Agreement insurance requirements, including naming City of Chandler, its agents, representatives, officers, directors, officials and employees as Additional Insured as required.

3.1.7. If a Certificate of Insurance is submitted as verification of coverage, City will reasonably rely upon the Certificate of Insurance as evidence of coverage but this acceptance and reliance will not waive or alter in any way the insurance requirements or obligations of this Agreement.

3.2. *Insurance Cancellation During Term of Contract/Agreement.*

3.2.1. If any of the required policies expire during the life of this Agreement, Consultant must forward renewal or replacement Certificates to City within 10 days after the renewal date containing all the required insurance provisions.

3.2.2. Each insurance policy required by the insurance provisions of this Agreement must provide the required coverage and must not be suspended, voided or canceled except after thirty (30) days prior written notice has been given to City, except when cancellation is for non-payment of premium, then ten (10) days prior notice may be given. Such notice must be sent directly to Chandler Law-Risk Management Department, Post Office Box 4008, Mailstop 628, Chandler, Arizona 85225. If any insurance company refuses to provide the required notice, Consultant or its insurance broker must notify City of any cancellation, suspension, non-renewal of any insurance within seven (7) days of receipt of insurers' notification to that effect.

3.3 City as Additional Insured. The policies are to contain, or be endorsed to contain, the following provisions:

3.3.1. The Commercial General Liability and Automobile Liability policies are to contain, or be endorsed to contain, the following provisions: City, its officers, officials, agents, and employees are additional insureds with respect to liability arising out of activities performed by, or on behalf of, Consultant including City's general supervision of Consultant; Products and Completed operations of Consultant; and automobiles owned, leased, hired, or borrowed by Consultant.

3.3.2. City, its officers, officials, agents, and employees must be additional insureds to the full limits of liability purchased by Consultant even if those limits of liability are in excess of those required by this Agreement.

EXHIBIT "D"
SPECIAL CONDITIONS

Standard Details and Specifications. Consultant must be familiar with City's latest revision of the MAG Specifications and MAG Standard Details as amended by City. City's current amendment to the MAG Specifications, part of City's Unified Development Manual, may be found and downloaded from City's website at http://www.chandleraz.gov/udm.

City Ownership of Project Documents. All work products (electronically or manually generated) including, but not limited to: plans, specifications, cost estimates, field notes, tracings, studies, investigations, design analyses, original drawings, original mylars, Computer Aided Drafting and Design (CADD) file diskettes which reflect all final drawings, and other related documents which are prepared in the performance of this Agreement (collectively referred to as "Documents") are to be and remain the property of City and are to be delivered to the Project Manager before the final payment is made to Consultant. In the event these Documents are altered, modified or adapted without the written consent of Consultant, which consent Consultant must not unreasonably withhold, City agrees to hold Consultant harmless to the extent permitted by law from the legal liability arising out of City's alteration, modification or adaptation of the Documents.

Re-use of Documents. The parties agree the documents, drawings, specifications and designs, although the property of City, are prepared for this specific project and are not intended nor represented by Consultant to be suitable for re-use for any other project. Any re-use without written verification or adaptation by Consultant for the specific purpose intended will be at City's sole risk and without liability or legal exposure to Consultant.

Patent Fees and Royalties. Consultant must pay all license fees and royalties and assume all costs incidental to the use, in the performance of the work or the incorporation in the work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Agreement for use in the performance of the work and if, to the actual knowledge of City, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed by City in the Agreement. Consultant must defend, indemnify and hold harmless City and anyone directly or indirectly employed by City from and against all claims, damages, losses, and expenses (including attorneys' fees) arising out of any infringement of patent rights or copyrights incidental to the use in the performance of the work, or resulting from the incorporation in the work of any invention, design, process, product, or device not specified in the Agreement, and must defend all such claims in connection with any alleged infringement of such rights.

License to City for Reasonable Use. With this Agreement, Consultant and its subconsultants hereby grant a license to City, its agents, employees, and representatives for an indefinite period of time to reasonably use, make copies, and distribute as appropriate the Documents, works or deliverables developed or created as a result of the Project and this

Agreement. This license also includes the making of derivative works.

Documents to Bear Seal. Consultant and its subconsultants must endorse by professional seal all plans, works, and deliverables prepared by each for this Agreement as required by state law.

1. Contract Worker Access Controls, Badge and Key Access Requirements. A Contract Worker from Consultant's firm must not be allowed to begin work in any City facility without: (A) The prior completion and City's acceptance of the required background screening; and (8) when required, the Contract Worker's receipt of a City issued badge. A badge will be issued to a Contract Worker solely for access to City facility(s) to which the Contract Worker is assigned. Each Contract Worker who enters a City facility must use the badge issued to the Contract Worker.

2. Badges. After receipt of the badge application, the Contract Worker will proceed to the Badging Office for processing of the badge application and issuance of the badge. City will not process the badge application until the Contract Worker satisfies the required Background Screening (as defined herein). The Contract Worker must comply with all requirements and furnish all requested information as requested by the Badging Office. Any and all fees associated with security badging will be assessed in compliance with Chandler City Code §4-22.

3. Key Access Procedures. If the Contract Worker's services require keyed access to enter a City facility(s), a separate key issue/return form must be completed and submitted by Consultant for each key issued.

4. Stolen or Lost Badges or Keys. Consultant must report lost or stolen badges or keys to City immediately. A new badge application or key issue form must be completed and submitted along with payment of the applicable fees prior to issuance of a new badge or key.
5. Return of Badges or Keys. All badges and keys are the property of City and must be returned to City at the Badging Office within one (1) business day of when the Contract Worker's access to a City facility is no longer required to furnish the services under this Agreement. Consultant must collect a Contract Worker's badge and key(s) upon the termination of the Contract Worker's employment; when the Contract Worker's services are no longer required at the particular City facility(s); or upon termination, cancellation or expiration of this Agreement.

6. Consultant's default under this Section must include, but is not limited to the following: (1) Contract Worker gains access to a City facility(s) without the proper badge or key; (2) Contract Worker uses a badge or key of another to gain access to a City facility; (3) Contract Worker commences services under this Agreement without the proper badge, key or Background Screening; (4) Contract Worker or Consultant submits false information or negligently submits wrong information to City to obtain a badge, key or applicable Background Screening; or (5) Consultant fails to collect and timely return Contract Worker's badge or key upon termination of Contract Worker's employment,

reassignment of Contract Worker to another City facility or upon the expiration, cancellation or termination of this Agreement. Consultant acknowledges and agrees that the access control, badge and key requirements in this Section are necessary to preserve and protect public health, safety and welfare. Accordingly, Consultant agrees to properly cure any default under this Section within three (3) business days from the date notice of default is sent by City. The parties agree that Consultant's failure to properly cure any default under this Section must constitute a breach of this Section. In addition to any other remedy available to City at law or in equity, Consultant must be liable for and must pay to City the sum of one thousand dollars ($1,000.00) for each breach by Consultant of this Section. The parties further agree that the sum fixed above is reasonable and approximates the actual or anticipated loss to City at the time and making of this Agreement in the event that Consultant breaches this Section. Further, the parties expressly acknowledge and agree to the fixed sum set forth above because of the difficulty of proving City's actual damages in the event that Consultant breaches this Section. The parties further agree that three (3) breaches by Consultant of this Section arising out of any default within a consecutive period of three (3) months or three (3) breaches by Consultant of this Section arising out of the same default within a period of twelve (12) consecutive months will constitute a material breach of this Agreement by Consultant and City expressly reserves all of its rights, remedies and interests under this Agreement, at law and in equity including, but not limited to, termination of this Agreement.

CHANDLER arizona
Community of Innovation

City Council Memorandum **Public Works & Utilities** **Memo No.** CP21-115

Date: April 19, 2021

To: Mayor and Council

Thru: Joshua H. Wright, Acting City Manager
Debra Stapleton, Assistant City Manager
John Knudson, Public Works and Utilities Director
Andrew Goh, Capital Projects Manager

From: Sandra Story, Engineering Project Manager

Subject: Professional Services Agreement No. WA1908.271, with Black & Veatch Corporation, for the Pecos Surface Water Treatment Plant Surge System Post Design Services

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Proposed Motion:

Move City Council award Professional Services Agreement No. WA1908.271, to Black & Veatch Corporation, for the Pecos Surface Water Treatment Plant Surge System Post Design Services, in an amount not to exceed $104,890.

Background/Discussion:

This project is a continuation of the Public Works & Utilities Department's ongoing initiative to modernize and rehabilitate the City's older water production facilities and replace aging pipe infrastructure. The Pecos Surface Water Treatment Plant (SWTP), located at 1475 East Pecos Road, was put into service in 1989. The 2018 Water, Wastewater, and Reclaimed Water Master Plan included the recommendation for installation of a surge suppression system at the Pecos SWTP to mitigate pressure fluctuations to the water distribution system. The water distribution system infrastructure is aging and more susceptible to main breaks due to these pressure fluctuations. Water main breaks caused by these pressure fluctuations are responsible for water loss and damage to surrounding infrastructure and personal property. This portion of the project will complete the installation of a surge tank and other necessary appurtenances at the Pecos SWTP.

This project scope of work includes design clarifications or modifications with the designer of record for seamless and continued coordination with utilities, other agencies, bidders, contractor, and construction management firm before and during construction of this project, as well as attendance at construction meetings, shop drawings, submittal reviews, environmental services, and preparation of final as-built drawings. The contract completion time is 400 calendar days following Notice to Proceed.

A related Construction Contract with Achen-Gardner Construction, LLC, for the Arrowhead Water Production Facility (WPF) Rehabilitation and Pecos SWTP Surge System, is also scheduled for this City Council meeting.

A related Professional Services Agreement with Wilson Engineers, LLC, for the Arrowhead WPF Rehabilitation and Pecos SWTP Surge System Construction Management Services, is also scheduled for this City Council meeting.

A related Professional Services Agreement with Wilson Engineers, LLC, for the Arrowhead WPF Rehabilitation Post Design Services, is also scheduled for this City Council meeting.

Evaluation:

The selection process was conducted in accordance with City policy and procedure and State law. This project is being performed under the On-Call Consultant Pre-Qualified List for Water and Wastewater Services. Staff recommends approval of this agreement with Black & Veatch Corporation based on qualifications, relevant firm experience, team experience, project understanding, and project approach.

Fiscal Impact

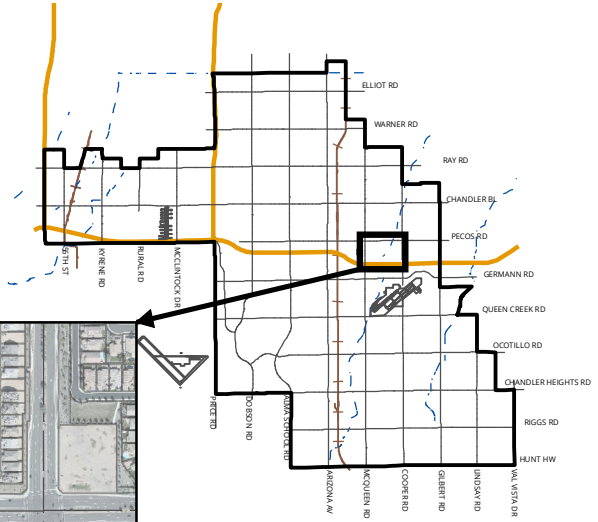
Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
601.3820.6718.6WA210	Water Bonds	Water Treatment Plant Imprv	$104,890	Y

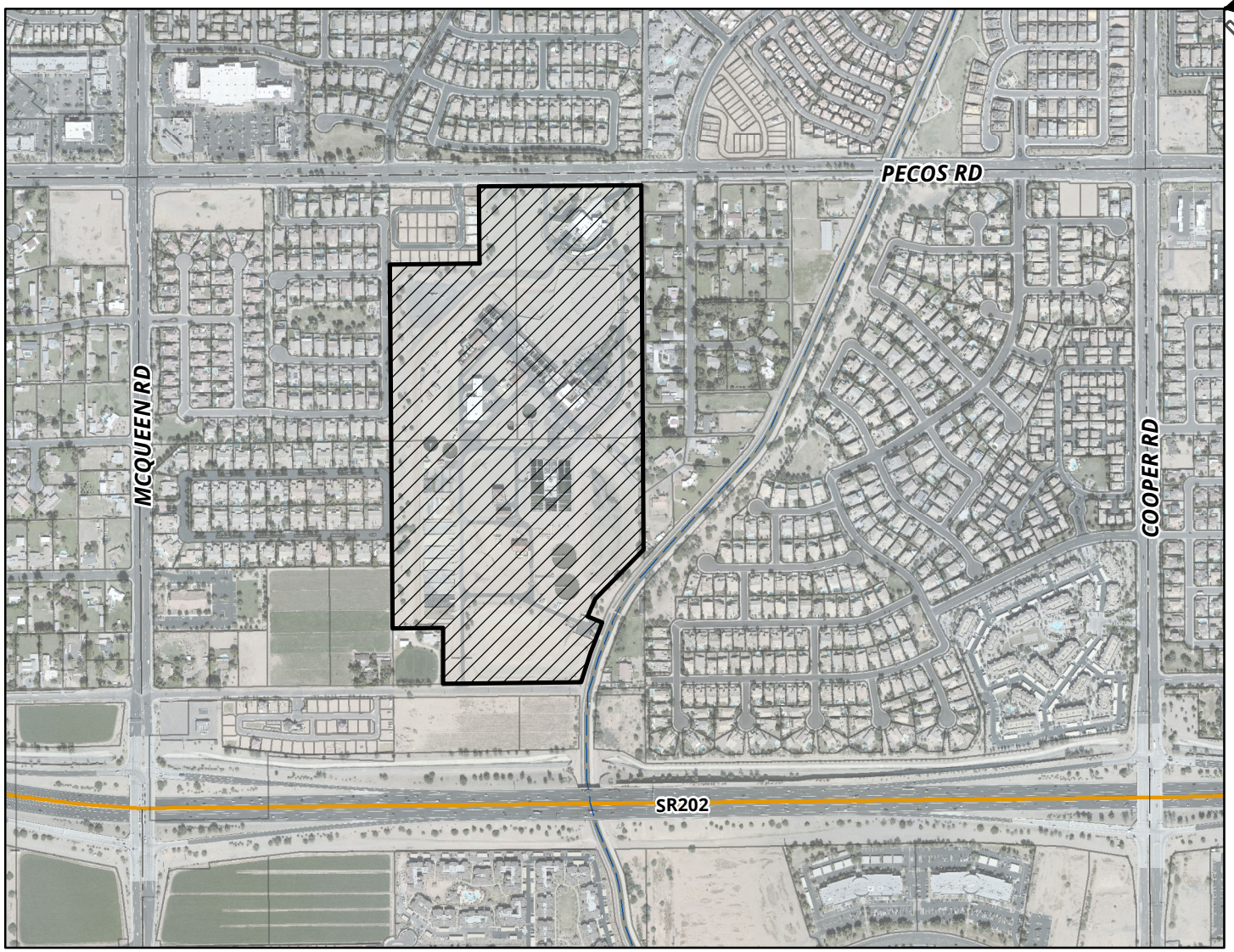
Attachments

Location Map
Agreement - Black & Veatch

CHANDLER
arizona

PECOS SURFACE WATER TREATMENT
PLANT SURGE SYSTEM POST DESIGN SERVICES
PROJECT NO. WA1908.271





MEMO NO. CP21-115

PROJECT SITE

NTS

ChanGIS

F:\ENGINEER\GENSERV_ArcMap_Shared\Map Requests\Capital Projects\CP21-115 PECOS SURFACE WATER TREATMENT PLANT SURGE SYSTEM POST DESIGN SERVICES\CP21-115.mxd 3/29/2021 MARICELAH

PROFESSIONAL SERVICES AGREEMENT
Post-Design Services
PECOS SURFACE WATER TREATMENT PLANT SURGE SYSTEM

Project No. WA1908.271

Council Date: April 22, 2021 Item No.

THIS AGREEMENT ("Agreement") is made and entered into on the _____ day of_____, 2021 ("Effective Date"), by and between City of Chandler, an Arizona municipal corporation, ("City"), and **Black & Veatch Corporation**, a Delaware corporation, ("Consultant") (City and Consultant may individually be referred to as "Party" and collectively referred to as "Parties").

RECITALS

A. City proposes to engage Consultant to provide Post-Design Services for **PECOS SURFACE WATER TREATMENT PLANT SURGE SYSTEM** project as more fully described in **Exhibit "A"**, which is attached to and made a part of this Agreement by this reference.

B. Consultant is ready, willing, and able to provide the services described in **Exhibit "A"** for the compensation and fees set forth and as described in **Exhibit "B"**, which is attached to and made a part of this Agreement by this reference.

C. City desires to contract with Consultant to provide these services under the terms and conditions set forth in this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the premises and the mutual promises contained in this Agreement, City and Consultant agree as follows:

SECTION I--CONSULTANT'S SERVICES

Consultant must perform the services described in **Exhibit "A"** to City's satisfaction within the terms and conditions of this Agreement and within the care and skill that a person who provides similar services in Chandler, Arizona exercises under similar conditions. All work or services furnished by Consultant under this Agreement must be performed in a skilled and workmanlike manner. All fixtures, furnishings, and equipment furnished by Consultant as part of the work or services under this Agreement must be new, or the latest model, and of the most suitable grade and quality for the intended purpose of the work or service.

SECTION II--PERIOD OF SERVICE

Consultant must perform the services described in **Exhibit "A"** for the term of this Agreement. Unless amended in writing by the Parties, the Agreement term expires **400** calendar days after the Notice to Proceed (NTP) Date.

SECTION III--PAYMENT OF COMPENSATION AND FEES

Unless amended in writing by the Parties, Consultant's compensation and fees as more fully described in **Exhibit "B"** for performance of the services approved and accepted by City under this Agreement must not exceed **$104,890** for the full term of the Agreement. Consultant may not increase any compensation or fees under this Agreement without the City's prior written consent. Consultant must submit monthly requests for payment of services approved and accepted during the previous billing period and must include, as applicable, detailed invoices and receipts, a narrative description of the tasks accomplished during the billing period, a list of any deliverables submitted, and any subconsultant's or supplier's actual requests for payment plus similar narrative and listing of their work. Consultant must submit an Application and Certification for Payment Sheet with the monthly request for payment to: CapitalProjects.Payables@chandleraz.gov. Payment for those services negotiated as a lump sum will be made in accordance with the percentage of the work completed during the preceding billing period. Services negotiated as a not-to-exceed fee will be paid in accordance with the work effort expended on the service during the preceding month. All requests for payment must be submitted to City for review and approval. City will make payment for approved and accepted services within 30 calendar days of City's receipt of the request for payment. Consultant bears all responsibility and liability for any and all tax obligations that result from Consultant's performance under this Agreement.

SECTION IV--CITY'S OBLIGATIONS

As part of Consultant's services under this Agreement, City will provide furnished items, services, or obligations as detailed in **Exhibit "D"**.

SECTION V--GENERAL CONDITIONS

5.1 Notices. Unless otherwise provided herein, demands under this Agreement must be in writing and will be deemed to have been duly given and received either (a) on the date of service if personally served on the party to whom notice is to be given, or (b) on the third day after the date of the postmark of deposit by first class United States mail, registered or certified, postage prepaid and properly addressed as follows:

To City:	City of Chandler Public Works & Utilities Department Attn: CIP City Engineer P.O. Box 4008, Mail Stop 407 Chandler, AZ 85244-4008

With a Copy to:	Project Manager City of Chandler Public Works & Utilities Department P.O. Box 4008, Mail Stop 407 Chandler, AZ 85244-4008
To Consultant:	Mr. Mike Caruso Black & Veatch Corporation 2231 E. Camelback Rd., Ste. 250 Phoenix, AZ 85016

5.2 Records/Audit. Records of Consultant's direct personnel payroll, reimbursable expenses pertaining to this Agreement and records of accounts between City and Consultant must be kept on the basis of generally accepted accounting principles and must be made available to City and its auditors for up to three years following City's final acceptance of the services under this Agreement (this requirement is increased to five years if construction of this project is federally funded). City, its authorized representative, or any federal agency, reserves the right to audit Consultant's records to verify the accuracy and appropriateness of all cost and pricing data, including data used to negotiate this Agreement and any amendments. City reserves the right to decrease the total amount of Agreement price or payments made under this Agreement or request reimbursement from Consultant following final contract payment on this Agreement if, upon audit of Consultant's records, the audit discloses Consultant has provided false, misleading, or inaccurate cost and pricing data. Consultant will include a similar provision in all of its contracts with subconsultants who provide services under the Agreement to ensure that City, its authorized representative, or the appropriate federal agency, has access to the subconsultants' records to verify the accuracy of all cost and pricing data. City reserves the right to decrease Contract price or payments made on this Agreement or request reimbursement from Consultant following final payment on this Agreement if the above provision is not included in subconsultant agreements, and one or more subconsultants refuse to allow City to audit their records to verify the accuracy and appropriateness of all cost and pricing data. If, following an audit of this Agreement, the audit discloses Consultant has provided false, misleading, or inaccurate cost and pricing data, and the cost discrepancies exceed 1% of the total Agreement billings, Consultant will be liable for reimbursement of the reasonable, actual cost of the audit.

5.3 Alteration in Character of Work. Whenever an alteration in the character of work results in a substantial change in this Agreement, thereby materially increasing or decreasing the scope of services, cost of performance, or Project schedule, the work will be performed as directed by City. However, before any modified work is started, a written amendment must be approved and executed by City and Consultant. Such amendment must not be effective until approved by City. Additions to, modifications, or deletions from this Agreement as provided herein may be made, and the compensation to be paid to Consultant may accordingly be adjusted by mutual agreement of the Parties. It is distinctly understood and agreed that no claim for extra services or materials furnished by Consultant will be allowed by City except as provided herein, nor must Consultant do any work or furnish any materials not covered by this Agreement unless such work is first authorized in writing. Any

such work or materials furnished by Consultant without prior written authorization will be at Consultant's own risk, cost, and expense, and Consultant hereby agrees that without written authorization Consultant will make no claim for compensation for such work or materials furnished.

5.4 Termination. City and Consultant hereby agree to the full performance of the covenants contained herein, except that City reserves the right, at its discretion and without cause, to terminate or abandon any service provided for in this Agreement, or abandon any portion of the Project for which services have been performed by Consultant. In the event City abandons or suspends the services, or any part of the services as provided in this Agreement, City will notify Consultant in writing and immediately after receiving such notice, Consultant must discontinue advancing the work specified under this Agreement. Upon such termination, abandonment, or suspension, Consultant must deliver to City all drawings, plans, specifications, special provisions, estimates and other work entirely or partially completed, together with all unused materials supplied by City. Consultant must appraise the work Consultant has completed and submit Consultant's appraisal to City for evaluation. City may inspect Consultant's work to appraise the work completed. Consultant will receive compensation in full for services performed to the date of such termination. The fee will be paid in accordance with Section lll of this Agreement, and as mutually agreed upon by Consultant and City. If there is no mutual agreement on payment, the final determination will be made in accordance with the "Disputes" provision in this Agreement. However, in no event may the fee exceed the fee set forth in Section lll of this Agreement nor as amended in accordance with Section "Alteration in Character of Work." City will make the final payment within 60 days after Consultant has delivered the last of the partially completed items and the Parties agree on the final fee. If City is found to have improperly terminated the Agreement for cause or default, the termination will be converted to a termination for convenience in accordance with the provisions of this Agreement.

5.5 Indemnification. To the extent permitted by law, the Consultant ("lndemnitor") must indemnify, save and hold harmless City and its officers, officials, agents and employees ("lndemnitee") from any and all claims, actions, liabilities, damages, losses or expenses (including court costs, attorneys' fees and costs of claim processing, investigation and litigation) ("Claims") caused or alleged to be caused, in whole or in part, by the wrongful, negligent or willful acts, or errors or omissions of Consultant or any of its owners, officers, directors, agents, employees, or subconsultants in connection with this Agreement. This indemnity includes any claim or amount arising out of or recovered under workers' compensation law or on account of the failure of Consultant to conform to any federal, state or local law, statute, ordinance, rule, regulation or court decree. Consultant must indemnify lndemnitee from and against any and all Claims, except those arising solely from lndemnitee's own negligent or willful acts or omissions. Consultant is responsible for primary loss investigation, defense and judgment costs where this indemnification applies. In consideration of the award of this Agreement, Consultant agrees to waive all rights of subrogation against lndemnitee for losses arising from or related to this Agreement. The obligations of Consultant under this provision survive the termination or expiration of this Agreement.

5.6 Insurance Requirements. Consultant must procure insurance under the terms and

conditions and for the amounts of coverage set forth in **Exhibit "C"** against claims that may arise from or relate to performance of the work under this Agreement by Consultant and its agents, representatives, employees, and subconsultants. Consultant and any subconsultant must maintain this insurance until all of their obligations have been discharged, including any warranty periods under this Agreement. These insurance requirements are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement. City in no way warrants that the minimum limits stated in **Exhibit "C"** are sufficient to protect Consultant from liabilities that might arise out of the performance of the work under this Agreement by Consultant, Consultant's agents, representatives, employees, or subconsultants. Consultant is free to purchase such additional insurance as may be determined necessary.

5.7 Cooperation and Further Documentation. Consultant agrees to provide City such other duly executed documents as may be reasonably requested by City to implement the intent of this Agreement.

5.8 Successors and Assigns. City and Consultant each bind itself, its partners, successors, assigns, and legal representatives to the other party to this Agreement and to the partners, successors, assigns, and legal representatives of such other party in respect to all covenants of this Agreement. Neither City nor Consultant may assign, sublet, or transfer its interest in this Agreement without the written consent of the other party. In no event may any contractual relation be created between any third party and City.

5.9 Disputes. In any dispute arising out of an interpretation of this Agreement or the duties required not disposed of by agreement between Consultant and City, the final determination at the administrative level will be made by City Engineer.

5.10 Completeness and Accuracy of Consultant's Work. Consultant must be responsible for the completeness and accuracy of Consultant's services, data, and other work prepared or compiled under Consultant's obligation under this Agreement and must correct, at Consultant's expense, all willful or negligent errors, omissions, or acts that may be discovered. Correction of errors disclosed and determined to exist during any construction of the project on architectural or engineering drawings and specifications must be accomplished by Consultant. The cost of the design necessary to correct those errors attributable to Consultant and any damage incurred by City as a result of additional construction costs caused by such engineering or architectural errors will be chargeable to Consultant and will not be considered a cost of the Work. The fact that City has accepted or approved Consultant's work will in no way relieve Consultant of any of Consultant's responsibilities.

5.11 Reporting. Written monthly reports, along with updated work schedules, will be made by Consultant in the format prescribed by City. These reports will be delivered to City per schedule. When requested by City, Consultant will attend Council meetings and provide finished documents including correspondence for Council action, supporting charts, graphs, drawings and colored slides of same.

5.12 Withholding Payment. City reserves the right to withhold funds from Consultant's payments up to the amount equal to the claims City may have against Consultant until such

time that a settlement on those claims has been reached.

5.13 City's Right of Cancellation. The Parties acknowledge that this Agreement is subject to cancellation by City under the provisions of Section 38-511, Arizona Revised Statutes (A.R.S.).

5.14 Independent Consultant. For this Agreement Consultant constitutes an independent contractor. Any provisions in this Agreement that may appear to give City the right to direct Consultant as to the details of accomplishing the work or to exercise a measure of control over the work means that Consultant must follow the wishes of City as to the results of the work only. These results must comply with all applicable laws and ordinances.

5.15 Project Staffing. Prior to the start of any work under this Agreement, Consultant must submit to City detailed resumes of key personnel that will be involved in performing services prescribed in the Agreement. City hereby acknowledges its acceptance of such personnel to perform services under this Agreement. At any time hereafter that Consultant desires to change key personnel while performing under the Agreement, Consultant must submit the qualifications of the new personnel to City for prior approval. Key personnel include, but are not limited to, principals-in-charge, project manager, and project Consultant. Consultant will maintain an adequate and competent staff of qualified persons, as may be determined by City, throughout the performance of this Agreement to ensure acceptable and timely completion of the Scope of Services. If City objects, with reasonable cause, to any of Consultant's staff, Consultant must take prompt corrective action acceptable to City and, if required, remove such personnel from the Project and replace with new personnel agreed to by City.

5.16 Consultants or Subconsultants. Prior to beginning the work, Consultant must furnish City for approval the names of consultants or subconsultants to be used under this Agreement. Any subsequent changes are subject to City's written prior approval.

5.17 Force Majeure. If either party is delayed or prevented from the performance of any act required under this Agreement by reason of acts of God or other cause beyond the control and without fault of the Party (financial inability excepted), performance of that act may be excused, but only for the period of the delay, if the Party provides written notice to the other Party within ten days of such act. The time for performance of the act may be extended for a period equivalent to the period of delay from the date written notice is received by the other Party.

5.18 Compliance with Federal Laws. Consultant understands and acknowledges the applicability of the Americans with Disabilities Act, the Immigration Reform and Control Act of 1986 and the Drug Free Workplace Act of 1989 to it. Consultant agrees to comply with these laws in performing this Agreement and to permit City to verify such compliance.

5.19 No Israel Boycott. By entering into this Agreement, Consultant certifies that Consultant is not currently engaged in, and agrees for the duration of the Agreement, not to engage in a boycott of Israel as defined by state statute.

5.20 Legal Worker Requirements. A.R.S. § 41-4401 prohibits City from awarding a contract to

any consultant who fails, or whose subconsultants fail, to comply with A.R.S. § 23-214(A). Therefore, Consultant agrees Consultant and each subconsultant it uses warrants their compliance with all federal immigration laws and regulations that relate to their employees and their compliance with § 23-214, subsection A. A breach of this warranty will be deemed a material breach of the Agreement and may be subject to penalties up to and including termination of the Agreement. City retains the legal right to inspect the papers of any Consultant's or subconsultant's employee who provides services under this Agreement to ensure that Consultant and subconsultants comply with the warranty under this provision.

5.21 Lawful Presence Requirement. A.R.S. §§ 1-501 and 1-502 prohibit City from awarding a contract to any natural person who cannot establish that such person is lawfully present in the United States. To establish lawful presence, a person must produce qualifying identification and sign a City-provided affidavit affirming that the identification provided is genuine. This requirement will be imposed at the time of contract award. This requirement does not apply to business organizations such as corporations, partnerships, or limited liability companies.

5.22 Covenant Against Contingent Fees. Consultant warrants that no person has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, and that no member of the Chandler City Council, or any City employee has any interest, financially, or otherwise, in Consultant's firm. For breach or violation of this warrant, City may annul this Agreement without liability or, at its discretion, to deduct from the Agreement price or consideration, the full amount of such commission, percentage, brokerage, or contingent fee.

5.23 Non-Waiver Provision. The failure of either Party to enforce any of the provisions of this Agreement or to require performance of the other Party of any of the provisions hereof must not be construed to be a waiver of such provisions, nor must it affect the validity of this Agreement or any part thereof, or the right of either Party to thereafter enforce each and every provision.

5.24 Disclosure of Information Adverse to City's Interests. To evaluate and avoid potential conflicts of interest, Consultant must provide written notice to City, as set forth in this Section, of any work or services performed by Consultant for third parties that may involve or be associated with any real property or personal property owned or leased by City. Such notice must be given 7 business days prior to commencement of the services by Consultant for a third party, or 7 business days prior to an adverse action as defined below. Written notice and disclosure must be sent in accordance with Section 6.7 above. An adverse action under this Agreement includes, but is not limited to: (a) using data as defined in the Agreement acquired in connection with this Agreement to assist a third party in pursuing administrative or judicial action against City; or (b) testifying or providing evidence on behalf of any person in connection with an administrative or judicial action against City; or (c) using data to produce income for Consultant or its employees independently of performing the services under this Agreement, without the prior written consent of City. Consultant represents that except for those persons, entities, and projects identified to City, the services performed by Consultant under this Agreement are not expected to create an

interest with any person, entity, or third party project that is or may be adverse to City's interests. Consultant's failure to provide a written notice and disclosure of the information as set forth in this Section constitute a material breach of this Agreement.

5.25 Data Confidentiality and Data Security. As used in the Agreement, "data" means all information, whether written or verbal, including plans, photographs, studies, investigations, audits, analyses, samples, reports, calculations, internal memos, meeting minutes, data field notes, work product, proposals, correspondence and any other similar documents or information prepared by, obtained by, or transmitted to Consultant or its subconsultants in the performance of this Agreement. The Parties agree that all data, regardless of form, including originals, images, and reproductions, prepared by, obtained by, or transmitted to Consultant or its subconsultants in connection with Consultant's or its subconsultant's performance of this Agreement is confidential and proprietary information belonging to City. Except as specifically provided in this Agreement, Consultant or its subconsultants must not divulge data to any third party without City's prior written consent. Consultant or its subconsultants must not use the data for any purposes except to perform the services required under this Agreement. These prohibitions do not apply to the following data provided to Consultant or its subconsultants have first given the required notice to City: (a) data which was known to Consultant or its subconsultants prior to its performance under this Consultant or its subconsultants by a third party, who to the best of Consultant's or its subconsultants' knowledge and belief, had the legal right to make such disclosure and Consultant or its subconsultants are not otherwise required to hold such data in confidence; or (c) data which is required to be disclosed by virtue of law, regulation, or court order, to which Consultant or its subconsultants are subject. In the event Consultant or its subconsultants are required or requested to disclose data to a third party, or any other information to which Consultant or its subconsultants became privy as a result of any other contract with City, Consultant must first notify City as set forth in this Section of the request or demand for the data. Consultant or its subconsultants must give City sufficient facts so that City can be given an opportunity to first give its consent or take such action that City may deem appropriate to protect such data or other information from disclosure. All data must continue to be subject to the confidentiality agreements of this Agreement. Consultant or its subconsultants assume all liability to maintain the confidentiality of the data in its possession and agrees to compensate City if any of the provisions of this Section are violated by Consultant, its employees, agents or subconsultants. Solely for the purposes of seeking injunctive relief, it is agreed that a breach of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. Consultant agrees that the requirements of this Section must be incorporated into all subagreements entered into by Consultant. A violation of this Section may result in immediate termination of this Agreement without notice.

5.26 Personal Identifying Information-Data Security. Personal identifying information, financial account information, or restricted City information, whether electronic format or hard copy, must be secured and protected at all times by Consultant or its subconsultants. At a minimum, Consultant or its subconsultants must encrypt or password-protect electronic files. This includes data saved to laptop computers, computerized devices, or removable storage devices. When personal identifying information, financial account information, or restricted City information, regardless of its format, is no longer necessary,

the information must be redacted or destroyed through appropriate and secure methods that ensure the information cannot be viewed, accessed, or reconstructed. In the event that data collected or obtained by Consultant or its subconsultants in connection with this Agreement is believed to have been compromised, Consultant or its subconsultants must immediately notify City contact. Consultant agrees to reimburse City for any costs incurred by City to investigate potential breaches of this data and, where applicable, the cost of notifying individuals who may be impacted by the breach. Consultant agrees that the requirements of this Section must be incorporated into all subcontracts entered into by Consultant. It is further agreed that a violation of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. A violation of this Section may result in immediate termination of this Agreement without notice. The obligations of Consultant or its subconsultants under this Section must survive the termination of this Agreement.

5.27 Jurisdiction and Venue. This Agreement is made under, and must be construed in accordance with and governed by the laws of the State of Arizona without regard to the conflicts or choice of law provisions thereof. Any action to enforce any provision of this Agreement or to obtain any remedy with respect hereto must be brought in the courts located in Maricopa County, Arizona, and for this purpose, each Party hereby expressly and irrevocably consents to the jurisdiction and venue of such court.

5.28 Survival. All warranties, representations, and indemnifications by Consultant must survive the completion or termination of this Agreement.

5.29 Modification. Except as expressly provided herein to the contrary, no supplement, modification, or amendment of any term of this Agreement will be deemed binding or effective unless in writing and signed by the Parties.

5.30 Severability. If any provision of this Agreement or the application to any person or circumstance may be invalid, illegal or unenforceable to any extent, the remainder of this Agreement and the application will not be affected and will be enforceable to the fullest extent permitted by law.

5.31 Integration. This Agreement contains the full agreement of the Parties. Any prior or contemporaneous written or oral agreement between the Parties regarding the subject matter is merged and superseded.

5.32 Time is of the Essence. Time of each of the terms, covenants, and conditions of this Agreement is hereby expressly made of the essence.

5.33 Date of Performance. If the date of performance of any obligation or the last day of any time period provided for should fall on a Saturday, Sunday, or holiday for City, the obligation will be due and owing, and the time period will expire, on the first day after which is not a Saturday, Sunday or legal City holiday. Except as may otherwise be set forth in this Agreement, any performance provided for herein will be timely made if completed no later than 5:00 p.m. (Chandler time) on the day of performance.

5.34 Third Party Beneficiary. Nothing under this Agreement will be construed to give any

rights or benefits in the Agreement to anyone other than City and Consultant, and all duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of City and Consultant and not for the benefit of any other party.

5.35 Conflict in Language. All work performed must conform to all applicable City of Chandler codes, ordinances, and requirements as outlined in this Agreement. If there is a conflict in interpretation between provisions in this Agreement and those in **Exhibit "A"**, the provisions in this Agreement prevail.

5.36 Document/Information Release. Documents and materials released to Consultant, which are identified by City as sensitive and confidential, are City's property. The document/material must be issued by and returned to City upon completion of the services under this Agreement. Consultant secondary distribution, disclosure, copying, or duplication in any manner is prohibited without City's prior written approval. The document/material must be kept secure at all times. This directive applies to all City documents, whether in photographic, printed, or electronic data format.

5.37 Exhibits. The following exhibits are made a part of this Agreement and are incorporated by reference:

Exhibit A - Scope of Services / Schedule
Exhibit B - Compensation and Fees
Exhibit C - Insurance Requirements
Exhibit D - Special Conditions
Exhibit E – Federal Requirements (if applicable)

5.38 Special Conditions. As part of the services Consultant provides under this Agreement, Consultant agrees to comply with and fully perform the special terms and conditions set forth in **Exhibit "D"**, which is attached to and made a part of this Agreement.

5.39 Non-Discrimination and Anti-Harassment Laws. Consultant must comply with all applicable City, state, and federal non-discrimination and anti-harassment laws, rules, and regulations.

5.40 Licenses and Permits. Beginning with the Effective Date and for the full term of this Agreement, Consultant must maintain all applicable City, state, and federal licenses and permits required to fully perform Consultant's services under this Agreement.

5.41 Warranties. Consultant must furnish a one-year warranty on all work and services performed under this Agreement. Consultant must furnish, or cause to be furnished, a two-year warranty on all fixtures, furnishings, and equipment furnished by Consultant, subconsultants or suppliers under this Agreement. Any defects in design, workmanship, or materials that do not comply with this Agreement must be corrected by Consultant (including, but not limited to, all parts and labor) at Consultant's sole cost and expense. All written warranties and redlines for as-built conditions must be delivered to City on or before City's final acceptance of Consultant's services under this Agreement.

5.42 Cooperative Purchasing Agreement (S.A.V.E. – Strategic Alliance for Volume Expenditures). In addition to City of Chandler and with the approval of Consultant, this Agreement may be extended for use by other municipalities, school districts, and government agencies of the State. Any such usage by other entities must be in accordance with the ordinance, charter, or procurement rules and regulations of the respective political entity.

5.43 Budget Approval into Next Fiscal Year. This Agreement will commence on the Effective Date and continue in full force and effect until it is terminated or expires in accordance with the provisions of this Agreement. The Parties recognize that the continuation of this Agreement after the close of the City's fiscal year, which ends on June 30 of each year, is subject to the City Council's approval of a budget that includes an appropriation for this item as an expenditure. The City does not represent that this budget item will be actually adopted. This determination is solely made by the City Council.

SIGNATURE PAGE TO FOLLOW

This Agreement will be in full force and effect only when it has been approved and executed by the duly authorized City officials.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the Effective Date.

"CITY"
CITY OF CHANDLER

_____
MAYOR

Recommended By:

_____
Andrew Goh, P.E.
CIP City Engineer

APPROVED AS TO FORM:

_____
City Attorney

ATTEST:

_____
City Clerk Seal

"CONSULTANT"
Black & Veatch Corporation

Signature 3/16/2021
Date

Lisa Jackson, P.E.
Print Name

Associate Vice President
Title

JacksonLA@bv.com
Signer Email Address

EXHIBIT "A"
SCOPE OF SERVICES/SCHEDULE

BLACK & VEATCH

EXHIBIT "A"

POST DESIGN
SCOPE OF SERVICES

Project Description

Post Design services for Pecos WTP Surge System Improvements Project, June 1, 2021 to May 1, 2022. Services include pre-construction assistance and Engineering or Architectural Design Services during Construction to address issues and/or specialized technical products regarding the **designer of record**; and preparation of as-built record drawings.

Major project elements are based on the January 2020 Pecos SWTP Surge System drawings and specifications and include:

- Surge System installation, including surge tank, associated appurtenances, solenoid and electrical control panels
- New FWPS#1, Pumps #1 & #3 tiling disc check valves and modification of pumps #2 & #4 existing tilting disc check valves with slow closing mechanisms
- Grading improvements / retaining wall modifications

Since the original drawings were issued in August 2019, the City has contracted to install below-grade piping modifications during the winter 2019/2020 plant shutdown and self-performed a portion of the work including Demolition of FWPS#1, Pump#4 RVSS and new AFD installation. The City has also installed a previously purchased tilting disc swing check valve and installed it along with new piping for pump #4. Record drawings will include this City-installed equipment associated with the original design set.

Project Tasks

1. PRE-CONSTRUCTION ASSISTANCE

A. Task 1.1 Preconstruction Assistance

i. Consultant will attend the pre-construction meeting.

2. Engineering or Architectural Design Services During Construction

A. Task 2.1 Attend Construction Meetings, as needed

i. Consultant will attend construction meetings, as needed. Consultant assumes attendance of twenty (20) bi-weekly construction meetings. See Exhibit A-1 Task 201 for additional details.

B. Task 2.2 Respond to Requests for Information (RFI's), as needed

i. Consultant will review, evaluate, and respond to any Contractor Requests for Information (RFI's) forwarded by the CM Firm for design review. Consultant assumes a maximum of ten (10) RFI responses. See Exhibit A-1 Task 202 for additional details.

C. Task 2.3 Respond to Shop Drawing Submittals, as needed

i. Consultant will review, evaluate, and respond to any Contractor Shop Drawing submittals forwarded by the CM Firm for design review. Consultant assumes

a maximum of thirty-five (35) reviews. See Exhibit A-1 Task 203 for additional details.

D. Task 2.4 Allowance / Change Order Reviews, as needed

i. Consultant will review, evaluate, and respond to any Contractor Allowance or Change Order requests forwarded by the CM Firm for review. Consultant assumes a maximum of four (4) reviews. See Exhibit A-1 Task 204 for additional details.

E. Task 2.5 Checkout, Functional Testing, Startup & Commissioning, as needed

i. Consultant will assist with the oversight or review of any Contractor Field Calibration, Loop Checkout, Alarming, Functional Testing, and Substantial & Final Completion requests forwarded by the CM Firm. See Exhibit A-1 Task 205 for additional details.

F. Task 2.6 Project Management, as needed

i. Consultant will provide overall Project Management to ensure Consultant's project team supports the project and provides monthly invoices to the City's Project Manager. See Exhibit A-1 Task 206 for additional details.

3. RECORD DRAWINGS

A. Task 3.1 Record Drawings

i. Transfer red-line comments to City's construction plans to create record drawings.

ii. Provide resident engineer and/or architect and/or landscape architect stamp/certification on record drawings cover sheet. Ensure all required signatures on the cover sheet.

iii. Provide and deliver record drawings in paper and digital pdf format to the City as required for as-built submittal process at city permit counter and with MCESD.

iv. See Exhibit A-1 Task 301 for additional details.

ASSUMPTIONS, CLARIFICATIONS, AND EXCLUSIONS

1. Application fees for City reviews and permits will be paid by CITY.
2. The Owner's Allowance will only be utilized with prior written approval from the City representative.

EXHIBIT A-1

CITY OF CHANDLER PECOS SWTP SURGE SYSTEM – ENGINEERING SERVICES DURING CONSTRUCTION

SCOPE OF SERVICES

PROJECT DESCRIPTION

The following Scope of Work describes the construction phase services to be performed by Black & Veatch (CONSULTANT) and on the City of Chandler (City) Pecos Water Treatment Plant (Pecos SWTP) Surge System Project.

Major project elements are based on the January 2020 Pecos SWTP Surge System drawings and specifications and include:

- Surge System installation, including surge tank, associated appurtenances, solenoid and electrical control panels
- New FWPS#1, Pumps #1 & #3 tiling disc check valves and modification of pumps #2 & #4 existing tilting disc check valves with slow closing mechanisms
- Grading improvements / retaining wall modifications

Since the original drawings were issued in August 2019, the City has contracted to install below-grade piping modifications during the winter 2019/2020 plant shutdown and self-performed a portion of the work including Demolition of FWPS#1, Pump#4 RVSS and new AFD installation. The City has also installed a previously purchased tilting disc swing check valve and installed it along with new piping for pump #4. Record drawings will include this City-installed equipment associated with the original design set.

SCOPE

This scope of these services includes engineering services during construction. City's Program Manager / Construction Manager (PM/CM) will lead primary inspection work and be supplemented as noted herein.

PHASE 100 TASKS: PRE-CONSTRUCTION ASSISTANCE

Task 101 – Pre-Construction Assistance. CONSULTANT will attend the pre-construction meeting.

PHASE 200 TASKS: ENGINEERING SERVICES DURING CONSTRUCTION

CONSULTANT will perform services during the construction phase of the project. Specific services to be performed by CONSULTANT are as follows:

Task 201 – Attend Construction Meetings & Site Observations. The CONSULTANT will coordinate with the PM/CM and the Contractor to witness key tasks and other duties and responsibilities, including the following:

a. Attend construction coordination meetings on site or virtually with Contractor, Electrical subcontractor, I&C subcontractor (if different than Electrical subcontractor), City representative, and PM/CM anticipated to be bi-weekly through final completion (assumed 40 weeks). The coordination meetings will be the forum to discuss project progress, schedule, shop drawings and submittals, technical issues, programming schedule, and shop drawings. Typical participants include Project Manager, Civil Engineer, Electrical or I&C Engineer / Technician, and Senior Inspector. Additional meeting attendance as required by the PM/CM can be performed as a supplemental service.
b. Participate in onsite observations of the general progress of the work to assist CONSULTANT and PM/CM in determining if the work is proceeding in accordance with the Construction Contract Documents, including instrumentation, remote I/O panels, and control panels including installation, operation and documentation prior to on-site start-up services.
c. Communicate to the PM/CM and document observed defects or deficiencies in the Contractor's work relating to compliance with the contract drawings, specifications, and design intent.
d. Advise PM/CM of the commencement of any work requiring a shop drawing or sample submission if the submission has not been accepted by CONSULTANT.
e. Review and provide suggestions to the PM/CM regarding the Contractors' construction sequence plans for all construction work undertaken simultaneously.
f. When notified by the PM/CM, visually inspect materials, equipment, and supplies delivered to the worksite. Reject materials, equipment, and supplies that do not conform to the construction contract documents. These inspections are exclusive of special inspection activities performed by others.
g. Assist PM/CM in interpretation of results of onsite materials testing services during construction.
h. Observe field tests of equipment, structures, and piping, as well as review of Contractor’s written verification that equipment installation and manufacturer startup services have been provided prior to testing and start-up (manufacturer’s certificates of proper installation and operation). review the resulting reports, and comment to PM/CM as appropriate. The Contractor is responsible for providing the PM/CM all documentation required for start-up, performance testing, commissioning and field testing as specified in the Contractor Documents and Specifications.
i. Initiate appropriate communication(s) with PM/CM regarding matters relating to Contractor’s failure to address contractual requirements, if noted.

j. Review point-to-point wiring interconnect drawings, loop diagrams, equipment field wiring diagrams, panel schematics, and calibration reports prior to start-up, commissioning and field testing.
k. Coordinate with regulatory and approving agencies and utilities having jurisdiction at the conclusion of construction to close out obtained permits as included herein. Any fees associated with City permits will be paid directly by the City. Fees associated with County permits will be paid by the CONSULTANT and reimbursed by the City.
l. Participate in a preconstruction conference including a discussion of the Contractor's schedules, schedule coordination and responsibilities, procedures for transmittal and review of the Contractor's submittals, Special Inspections Program, quality control and QC verification, critical work sequencing, change orders, record documents, and the Contractor's responsibilities for safety and first aid.
m. Review Contractor's training plan and instruction materials for compliance with Construction Contract Documents and provide comments to the PM/CM. The PM/CM will coordinate, schedule, and monitor manufacturer training presentations with City personnel to confirm it meets City requirements and is consistent with approved submittals.
n. Review certificates of inspections, tests, and related approvals submitted by the Contractor as required by laws, rules, regulations, ordinances, codes, orders, or the Contract Documents (but only to verify that their content complies with the requirements of, and the results certified indicate compliance with, the construction contract documents). This service is limited to a review of items submitted by the Contractor and does not extend to a determination of whether the Contractor has complied with all legal requirements. This is exclusive of items contained in the program of special inspections reviewed or verified by others.
o. Review special inspection test reports, special inspection reports and related documents submitted by the Inspectors as required by the Special Inspections Program (but only to verify that their content complies with the requirements of 01450 Structural Tests and Special Inspections).

Task 202 – Issue Interpretations and Clarifications (RFIs). The CONSULTANT will issue necessary interpretations and clarifications of the Construction Contract Documents; act as initial interpreter of the requirements of the Construction Contract Documents, and make decisions on City, PM/CM, and the Contractor questions relating to the acceptability of the work or the interpretation of the requirements of the Construction Contract Documents pertaining to the execution and progress of the work.

The CONSULTANT will respond in writing to PM/CM and/or the Contractor to clarify and/or interpret technical or design related questions. The CONSULTANT will respond to issues raised during construction regarding interpretation and clarification of the technical requirements of the Construction Contract Documents. The CONSULTANT will serve as City's advisor in resolution of these issues.

A total of up to ten (10) RFIs are estimated. If additional RFIs are received, they will be reviewed as a supplemental service.

Task 203 – Submittal Review. CONSULTANT will coordinate with PM/CM to review the schedule of shop drawings submissions, drawings, submittal documents, equipment operation and maintenance manuals, Contractor's quality control documentation and other data submitted by the Contractor as required by the construction contract documents. The CONSULTANT will receive, review, evaluate, and distribute (or take other appropriate action in respect of) shop drawings, samples, test results, and other data which Contractor is required to submit with the PM/CM.

The CONSULTANT will not provide positive recommendation of any proposed substitution unless such substitution deemed to conforms to the Project design concept and the Construction Contract Documents including the Contract Price. Final approval of substitutions shall be at the discretion of the City's Project Manager.

Manufacturer's O&M manuals received from the PM/CM will be reviewed for inclusion of information in conformance with technical specifications section 01300.

It is assumed the Contractor will provide the PM/CM and CONSULTANT with the specified hardcopies, if desired by the City, and bookmarked pdf format "character recognition" (OCR scanning) copies of approved O&M manuals per specification section 01300. Bookmarks shall be provided for each tab in the electronic copy.

Submittal and substitution review efforts are based upon a maximum of two (2) reviews per submittal and that no more than fifty percent (50%) of the total number of first submittals will require two (2) reviews. Reviews of a total of up to 35 shop drawing and O&M manual submittals, including resubmittals and submittals have been assumed by the CONSULTANT. If additional shop drawings are received beyond the assumed number of submittals, they will be reviewed as a supplemental service.

Task 204 – Allowance / Change Order Reviews. Review the Contractor's documentation and assist the PM/CM with administering the processing of allowances requests and change orders, including applications for extension of construction time. CONSULTANT together with its Resident Project Representative will:

- Review documentation
- Prepare any additional documentation required
- Review applications for extension of construction time
- Submit recommendations to PM/CM and City Project Manager for concurrence
- Assist PM/CM and City in negotiations with Contractor to obtain a fair price for the work

Work related to unusually complex or unreasonably out of scope or numerous change orders are considered a Supplemental Service. CONSULTANT's input as described above on up to four (4) allowance / change order requests have been assumed. If additional allowance / change orders are identified, they will be reviewed as a supplemental service.

Task 205 – Checkout, Functional Testing, Startup & Commissioning. CONSULTANT will assistance PM/CM for direct oversight or review of information provided by PM/CM for review for field calibration, loop checkout, alarming, functional testing, substantial completion, and final completion.

Field Calibration, Loop Checkout, and Alarming. CONSULTANT assist PM/CM to verify the Contractor's field calibrations are coordinated with control system programming. CONSULTANT will review witness loop checkout testing reports to verify successful completion by the Contractor. All Foxboro distributed control system (DCS) programming, configuration associated with the new surge system will be performed by the City.

CONSULTANT will meet with the City programmer to interpret surge system control descriptions and develop a list of additional alarms to be added to the existing alarm notification software and new Historian tags associated with FWPS #1, Pump #4 and the surge system as part of this project. City personnel will add any new alarms or tags identified. No updates to the existing reporting software or reporting are anticipated.

Functional Testing. Functional Testing services will be provided for startup of the surge system.

1. CONSULTANT will contact MCESD for consultation to confirm expectations for the plan of operation and MCESD acceptance of testing. Prepare summary report of findings and submit to City via email.
2. Review Contractor's submittal via PM/CM for functional testing, facilitate and participate in functional testing and functional testing planning meetings with the City and provide input on the Contractor's Functional Testing and Functional Acceptance testing plans as defined in Section 01650 of the Technical Specifications.
3. Witness Functional Testing for the new surge system. The purpose of this test is to prove the surge system is properly installed and able to be controlled locally. CONSULTANT will observe the testing, review the report summary by the Contractor reporting the results of the testing, and coordinate with the PM/CM to notify the Contractor of any items that need to be corrected.
4. Prepare letter report of equipment functional testing findings and submit via PM/CM to City and directly to MCESD.

City, as the responsible authority in charge, will perform all necessary water quality testing, data submittals, and coordination with MCESD during this time. Operator training in addition to that provided by the vendors associated with the surge system is not anticipated or included but can be added as a supplemental service.

Substantial & Final Completion. The CONSULTANT will support the PM/CM to prepare a punch list of work items that need to be completed. At the end of the successful Process

Checkout and initial operation of the surge system, provided that all of the other contractual and permitting requirements have been met, the Contractor will be given a letter of Conditional Substantial Completion by the PM/CM.

CONSULTANT will provide support during the surge system's initial 30-day operational period and participate in final punch list verification meeting to support PM/CM in issuing the letter of Final Completion.

Task 206 – Project Management. CONSULTANT will provide prepare and submit monthly invoices to City's project manager. Status reports will be prepared and submitted along with each monthly invoice. The status reports will identify what work has been performed during the billing period and the completion status of major tasks as described herein.

PHASE 300 TASKS: RECORD DRAWINGS

Task 301 – Conformed to Construction Record Drawings. At the completion of construction, the CONSULTANT will review and incorporate construction as-built redline drawings as provided by the PM/CM and Contractor into Conformed to Construction Record drawings. Contractor will provide via the PM/CM a paper and electronic pdf copy of their construction as-built redline drawings and specifications. Upon completion of the construction, CONSULTANT will finalize transfer of Contractor mark-ups to permanent record digital files. Conformed to Construction Record documents will be prepared based upon the information compiled and furnished by the Contractor.

The CONSULTANT will submit one (1) full size and one (1) half size bond hard copy of the Conformed to Construction Record drawings, one (1) pdf copy, and one (1) copy of the 2D Auto-Cad, version 2018 or later, Conformed to Construction drawings in native file and PDF format to City via PM/CM. Contractor redlined specifications will be provided for record. Thirty-seven (37) drawings are anticipated to be updated and include City-installed equipment (manual butterfly and tilting disc check valves, piping, and AFD).

CONSULTANT will coordinate with City Building Safety and MCESD to provide conformed to construction record drawings and other documents to certify completion of construction for permit close-out. Any fees incurred for permit close-out will be reimbursed by the City.

Schedule

Following dates are estimated based on a construction schedule of 40 weeks:

Contractor's NTP date:	June 1, 2021
Contractor's substantial completion date:	February 5, 2022
Contractor's final completion date:	March 5, 2022
CONSULTANT's final completion date:	May 1, 2022

Budget

See Exhibit B for detailed Level of Effort.

Supplemental Services

Any additional work requested by City that is not included in this draft scope of services will be treated as supplemental services. The scope and fee associated with these additional supplemental services shall be agreed upon by City and the Engineer before the work is performed and includes, but is not limited to, the following:

- Additional submittal review beyond that described herein
- RFI responses beyond that described herein
- Allowance / change order review beyond that described herein
- Additional meeting attendance beyond that described herein
- Special inspection services
- PLC/SCADA/AFD programming
- Update or creation of EOM sections associated with the surge system
- Collection of additional asset management information for new assets
- Operator training for the surge system supplemental to that provided by the vendor / supplier

EXHIBIT "B"
COMPENSATION AND FEES

BLACK & VEATCH

EXHIBIT "B"
PECOS WTP SURGE SYSTEM POST DESIGN
ENGINEERING SERVICES DURING CONSTRUCTION
FEE SCHEDULE

Task	Description	Cost
1	**PRE-CONSTRUCTION ASSISTANCE**	
1.1	Pre-Construction Assistance	$ 520.00
	SUBTOTAL TASK 1:	**$ 520.00**
2	**CONSTRUCTION MANAGEMENT**	
2.1	Construction Meetings	$ 14,590.00
2.2	Requests for Information (RFI)	$ 7,730.00
2.3	Submittal Review	$ 18,610.00
2.4	Allowance / Change Order Review	$ 6,230.00
2.5	Checkout, Functional Testing, Startup & Commissioning	$ 13,540.00
2.6	Project Management	$ 8,250.00
	SUBTOTAL TASK 2:	**$ 68,950.00**
3	**RECORD DRAWINGS**	
3.1	Record Drawings	$ 17,420.00
	SUBTOTAL TASK 3:	**$ 17,420.00**
SUBCONSULTANTS		
(none)		$ -
	SUBTOTAL SUBCONSULTANTS:	**$ -**
ALLOWANCES		
Direct Expense Allowance		$ 3,000.00
Owner's Allowance		$ 15,000.00
	SUBTOTAL ALLOWANCES:	**$ 18,000.00**
	PROJECT TOTAL:	**$ 104,890.00**

Notes:

1. Expenses include delivery such as courier, Fed Express / UPS, travel costs, including meals, lodging, and travel mileage at IRS approved rates, reproduction (printing, reproduction of deliverables).
2. The level of effort estimate is based on data currently provided by the City. Unforseen conditions which require additional Engineer / subconsultant services will be considered as supplemental services that will be performed following scopes of services and level of effort negotiations as required and approval by the City.

BLACK & VEATCH

City of Chandler
Pecos SWTP Surge System ESDC
Detailed Level of Effort
Exhibit B-1

Owner: City of Chandler
Project: Pecos SWTP Surge System ESDC

PHASE/Task (Billing Rate, $$,Hr.)	PHASE	Project Director $255.00	Project Manager $220.00	Civil Engineer $130.00	Sr. Specialist / QA/QC $220.00	Sr. Inspector $190.00	Sr. Structural Engineer $185.00	Structural Engineer $135.00	Mechanical Engineer $135.00	Sr. Electrical Engineer $185.00	Electrical Engineer $135.00	Sr. Electrical Technician $120.00	Sr. I&C Engineer $185.00	I&C Engineer $135.00	I&C Technician $125.00	Sr. BIM Technician $140.00	BIM Technician $120.00	Project Controls Specialist $155.00	Admin $100.00	SUBTOTAL, hours	SUBTOTAL, Billings $	SUBTOTAL, EXPENSES	SUBTOTAL, SUBS	TOTAL Billings
WORK BREAKDOWN STRUCTURE	**PHASE**																							
Pre-Construction Assistance	0100																							
Pre-Construction Assistance	0101	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	520	-	-	520
Engineering Services During Construction	0200																							
Attend Construction Meetings & Site Observatic	0201	-	16	20	-	20	6	-	-	-	4	4	-	4	16	-	-	-	-	90	14,590	-	-	14,590
Issue Interpretations & Clarifications (RFIs)	0202	-	4	20	1	4	2	6	4	2	4	-	2	2	-	-	-	-	-	51	7,730	-	-	7,730
Submittal Review	0203	-	4	40	2	4	4	8	20	4	20	-	4	18	-	-	-	-	2	130	18,610	-	-	18,610
Allowance / Change Order Review	0204	-	4	16	1	4	-	-	4	2	4	-	2	2	-	-	-	-	2	41	6,230	-	-	6,230
Checkout, Functional Testing, Startup & Comm	0205	-	4	12	-	24	-	-	4	4	4	12	4	4	16	-	-	-	-	88	13,540	-	-	13,540
Project Management	0206	2	12	16	-	-	-	-	-	-	-	-	-	-	-	-	-	4	24	58	8,250	-	-	8,250
Record Drawings	0300																							
Conformed to Construction Record Drawings	0301	-	4	24	-	2	2	4	2	-	4	4	-	4	4	10	60	-	12	136	17,420	3,000	-	20,420
Total, Hours		**2**	**48**	**152**	**4**	**58**	**14**	**18**	**34**	**12**	**40**	**20**	**12**	**34**	**36**	**10**	**60**	**4**	**40**	**598**				
Total, Billings		**$ 510**	**$ 10,560**	**$ 19,760**	**$ 880**	**$ 11,020**	**$ 2,590**	**$ 2,430**	**$ 4,590**	**$ 2,220**	**$ 5,400**	**$ 2,400**	**$ 2,220**	**$ 4,590**	**$ 4,500**	**$ 1,400**	**$ 7,200**	**$ 620**	**$ 4,000**		**$ 86,890**	**$ 3,000**	**$ -**	**89,890**

Owner's Allowance - Supplemental Services	**15,000**
Total, with Allowance	**104,890**

EXHIBIT "C"
INSURANCE REQUIREMENTS

1. General.

1.1 At the same time as execution of this Agreement, Consultant must furnish City a certificate of insurance on a standard insurance industry ACORD form. The ACORD form must be issued by an insurance company authorized to transact business in the State of Arizona possessing a current A.M. Best, Inc. rating of A-7, or better and legally authorized to do business in the State of Arizona with policies and forms satisfactory to City. Provided, however, the A.M. Best rating requirement will not be deemed to apply to required Workers' Compensation coverage.

1.2 Consultant and any of its subconsultants must procure and maintain, until all of their obligations have been discharged, including any warranty periods under this Agreement are satisfied, the insurances set forth below.

1.3 The insurance requirements set forth below are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement.

1.4 City in no way warrants that the minimum insurance limits contained in this Agreement are sufficient to protect Consultant from liabilities that might arise out of the performance of the Agreement services under this Agreement by Consultant, its agents, representatives, employees, subconsultants, and Consultant is free to purchase any additional insurance as may be determined necessary.

1.5 Failure to demand evidence of full compliance with the insurance requirements in this Agreement or failure to identify any insurance deficiency will not relieve Consultant from, nor will it be considered a waiver of its obligation to maintain the required insurance at all times during the performance of this Agreement.

1.6 Use of subconsultants: If any work is subcontracted in any way, Consultant must execute a written contract with subconsultant containing the same Indemnification Clause and Insurance Requirements as City requires of Consultant in this Agreement. Consultant is responsible for executing the Agreement with the subconsultant and obtaining Certificates of Insurance and verifying the insurance requirements.

2. Minimum Scope and Limits of Insurance. Consultant must provide coverage with limits of liability not less than those stated below.

2.1 *Professional Liability.* If the Agreement is the subject of any professional services or work performed by Consultant, or if Consultant engages in any professional services or work adjunct or residual to performing the work under this Agreement, Consultant must maintain Professional Liability insurance covering errors and omissions arising out of the work or services performed by Consultant, or anyone employed by Consultant, or anyone whose acts, mistakes, errors and omissions Consultant is legally liable, with a liability limit of $1,000,000 each claim and $2,000,000 all claims. In the event the Professional Liability

insurance policy is written on a "claims made" basis, coverage must extend for 3 years past completion and acceptance of the work or services, and Consultant, or its selected Design Professional will submit Certificates of Insurance as evidence the required coverage is in effect. The Design Professional must annually submit Certificates of Insurance citing that the applicable coverage is in force and contains the required provisions for a 3 year period.

2.2 *Commercial General Liability-Occurrence Form.* Consultant must maintain "occurrence" form Commercial General Liability insurance with a limit of not less than $2,000,000 for each occurrence, $4,000,000 aggregate. Said insurance must also include coverage for products and completed operations, independent contractors, personal injury and advertising injury. If any Excess insurance is utilized to fulfill the requirements of this paragraph, the Excess insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

2.3 *Automobile Liability-Any Auto or Owned, Hired and Non-Owned Vehicles*
Vehicle Liability: Consultant must maintain Business/Automobile Liability insurance with a limit of $1,000,000 each accident on Consultant owned, hired, and non-owned vehicles assigned to or used in the performance of Consultant's work or services under this Agreement. If any Excess or Umbrella insurance is utilized to fulfill the requirements of this paragraph, the Excess or Umbrella insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

2.4 *Workers Compensation and Employers Liability Insurance:* Consultant must maintain Workers Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Consultant employees engaged in the performance of work or services under this Agreement and must also maintain Employers' Liability insurance of not less than $1,000,000 for each accident and $1,000,000 disease for each employee.

3. Additional Policy Provisions Required.

3.1 *Self-Insured Retentions or Deductibles*. Any self-insured retentions and deductibles must be declared and approved by City. If not approved, City may require that the insurer reduce or eliminate any deductible or self-insured retentions with respect to City, its officers, officials, agents, employees, and volunteers.

3.1.1. Consultant's insurance must contain broad form contractual liability coverage.

3.1.2. Consultant's insurance coverage must be primary insurance with respect to City, its officers, officials, agents, and employees. Any insurance or self-insurance maintained by City, its officers, officials, agents, and employees will be in excess of the coverage provided by Consultant and must not contribute to it.

3.1.3. Consultant's insurance must apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

3.1.4. Coverage provided by Consultant must not be limited to the liability assumed under the indemnification provisions of this Agreement.

3.1.5. The policies must contain a severability of interest clause and waiver of subrogation against City, its officers, officials, agents, and employees, for losses arising from Work performed by Consultant for City.

3.1.6. Consultant, its successors and or assigns, are required to maintain Commercial General Liability insurance as specified in this Agreement for a minimum period of 3 years following completion and acceptance of the Work. Consultant must submit a Certificate of Insurance evidencing Commercial General Liability insurance during this 3 year period containing all the Agreement insurance requirements, including naming City of Chandler, its agents, representatives, officers, directors, officials and employees as Additional Insured as required.

3.1.7. If a Certificate of Insurance is submitted as verification of coverage, City will reasonably rely upon the Certificate of Insurance as evidence of coverage but this acceptance and reliance will not waive or alter in any way the insurance requirements or obligations of this Agreement.

3.2. *Insurance Cancellation During Term of Contract/Agreement.*

3.2.1. If any of the required policies expire during the life of this Agreement, Consultant must forward renewal or replacement Certificates to City within 10 days after the renewal date containing all the required insurance provisions.

3.2.2. Each insurance policy required by the insurance provisions of this Agreement must provide the required coverage and must not be suspended, voided or canceled except after thirty (30) days prior written notice has been given to City, except when cancellation is for non-payment of premium, then ten (10) days prior notice may be given. Such notice must be sent directly to Chandler Law-Risk Management Department, Post Office Box 4008, Mailstop 628, Chandler, Arizona 85225. If any insurance company refuses to provide the required notice, Consultant or its insurance broker must notify City of any cancellation, suspension, non-renewal of any insurance within seven (7) days of receipt of insurers' notification to that effect.

3.3 City as Additional Insured. The policies are to contain, or be endorsed to contain, the following provisions:

3.3.1. The Commercial General Liability and Automobile Liability policies are to contain, or be endorsed to contain, the following provisions: City, its officers, officials, agents, and employees are additional insureds with respect to liability arising out of activities performed by, or on behalf of, Consultant including City's general supervision of Consultant; Products and Completed operations of Consultant; and automobiles owned, leased, hired, or borrowed by Consultant.

3.3.2. City, its officers, officials, agents, and employees must be additional insureds to the full limits of liability purchased by Consultant even if those limits of liability are in excess of those required by this Agreement.

EXHIBIT "D"
SPECIAL CONDITIONS

Standard Details and Specifications. Consultant must be familiar with City's latest revision of the MAG Specifications and MAG Standard Details as amended by City. City's current amendment to the MAG Specifications, part of City's Unified Development Manual, may be found and downloaded from City's website at http://www.chandleraz.gov/udm.

City Ownership of Project Documents. All work products (electronically or manually generated) including, but not limited to: plans, specifications, cost estimates, field notes, tracings, studies, investigations, design analyses, original drawings, original mylars, Computer Aided Drafting and Design (CADD) file diskettes which reflect all final drawings, and other related documents which are prepared in the performance of this Agreement (collectively referred to as "Documents") are to be and remain the property of City and are to be delivered to the Project Manager before the final payment is made to Consultant. In the event these Documents are altered, modified or adapted without the written consent of Consultant, which consent Consultant must not unreasonably withhold, City agrees to hold Consultant harmless to the extent permitted by law from the legal liability arising out of City's alteration, modification or adaptation of the Documents.

Re-use of Documents. The parties agree the documents, drawings, specifications and designs, although the property of City, are prepared for this specific project and are not intended nor represented by Consultant to be suitable for re-use for any other project. Any re-use without written verification or adaptation by Consultant for the specific purpose intended will be at City's sole risk and without liability or legal exposure to Consultant.

Patent Fees and Royalties. Consultant must pay all license fees and royalties and assume all costs incidental to the use, in the performance of the work or the incorporation in the work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Agreement for use in the performance of the work and if, to the actual knowledge of City, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed by City in the Agreement. Consultant must defend, indemnify and hold harmless City and anyone directly or indirectly employed by City from and against all claims, damages, losses, and expenses (including attorneys' fees) arising out of any infringement of patent rights or copyrights incidental to the use in the performance of the work, or resulting from the incorporation in the work of any invention, design, process, product, or device not specified in the Agreement, and must defend all such claims in connection with any alleged infringement of such rights.

License to City for Reasonable Use. With this Agreement, Consultant and its subconsultants hereby grant a license to City, its agents, employees, and representatives for an indefinite period of time to reasonably use, make copies, and distribute as appropriate the Documents, works or deliverables developed or created as a result of the Project and this

Agreement. This license also includes the making of derivative works.

Documents to Bear Seal. Consultant and its subconsultants must endorse by professional seal all plans, works, and deliverables prepared by each for this Agreement as required by state law.

1. Contract Worker Access Controls, Badge and Key Access Requirements. A Contract Worker from Consultant's firm must not be allowed to begin work in any City facility without: (A) The prior completion and City's acceptance of the required background screening; and (8) when required, the Contract Worker's receipt of a City issued badge. A badge will be issued to a Contract Worker solely for access to City facility(s) to which the Contract Worker is assigned. Each Contract Worker who enters a City facility must use the badge issued to the Contract Worker.

2. Badges. After receipt of the badge application, the Contract Worker will proceed to the Badging Office for processing of the badge application and issuance of the badge. City will not process the badge application until the Contract Worker satisfies the required Background Screening (as defined herein). The Contract Worker must comply with all requirements and furnish all requested information as requested by the Badging Office. Any and all fees associated with security badging will be assessed in compliance with Chandler City Code §4-22.

3. Key Access Procedures. If the Contract Worker's services require keyed access to enter a City facility(s), a separate key issue/return form must be completed and submitted by Consultant for each key issued.

4. Stolen or Lost Badges or Keys. Consultant must report lost or stolen badges or keys to City immediately. A new badge application or key issue form must be completed and submitted along with payment of the applicable fees prior to issuance of a new badge or key.
5. Return of Badges or Keys. All badges and keys are the property of City and must be returned to City at the Badging Office within one (1) business day of when the Contract Worker's access to a City facility is no longer required to furnish the services under this Agreement. Consultant must collect a Contract Worker's badge and key(s) upon the termination of the Contract Worker's employment; when the Contract Worker's services are no longer required at the particular City facility(s); or upon termination, cancellation or expiration of this Agreement.

6. Consultant's default under this Section must include, but is not limited to the following: (1) Contract Worker gains access to a City facility(s) without the proper badge or key; (2) Contract Worker uses a badge or key of another to gain access to a City facility; (3) Contract Worker commences services under this Agreement without the proper badge, key or Background Screening; (4) Contract Worker or Consultant submits false information or negligently submits wrong information to City to obtain a badge, key or applicable Background Screening; or (5) Consultant fails to collect and timely return Contract Worker's badge or key upon termination of Contract Worker's employment,

reassignment of Contract Worker to another City facility or upon the expiration, cancellation or termination of this Agreement. Consultant acknowledges and agrees that the access control, badge and key requirements in this Section are necessary to preserve and protect public health, safety and welfare. Accordingly, Consultant agrees to properly cure any default under this Section within three (3) business days from the date notice of default is sent by City. The parties agree that Consultant's failure to properly cure any default under this Section must constitute a breach of this Section. In addition to any other remedy available to City at law or in equity, Consultant must be liable for and must pay to City the sum of one thousand dollars ($1,000.00) for each breach by Consultant of this Section. The parties further agree that the sum fixed above is reasonable and approximates the actual or anticipated loss to City at the time and making of this Agreement in the event that Consultant breaches this Section. Further, the parties expressly acknowledge and agree to the fixed sum set forth above because of the difficulty of proving City's actual damages in the event that Consultant breaches this Section. The parties further agree that three (3) breaches by Consultant of this Section arising out of any default within a consecutive period of three (3) months or three (3) breaches by Consultant of this Section arising out of the same default within a period of twelve (12) consecutive months will constitute a material breach of this Agreement by Consultant and City expressly reserves all of its rights, remedies and interests under this Agreement, at law and in equity including, but not limited to, termination of this Agreement.

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 11/1/2021 | 10/28/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER: Lockton Companies 444 W. 47th Street, Suite 900 Kansas City MO 64112-1906 (816) 960-9000	CONTACT NAME: PHONE (A/C, No, Ext): FAX (A/C, No): E-MAIL ADDRESS:
INSURED 1482177 BLACK & VEATCH CORPORATION 11401 LAMAR OVERLAND PARK KS 66211 CARUSO, MICHAEL E.	INSURER A : Zurich American Insurance Company — NAIC # 16535 INSURER B : Lexington Insurance Company — NAIC # 19437 INSURER C : INSURER D : INSURER E : INSURER F :

COVERAGES **CERTIFICATE NUMBER:** 17033445 **REVISION NUMBER:** XXXXXXX

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY	Y	Y	GLO 4641358	11/1/2020	11/1/2021	EACH OCCURRENCE	$ 2,000,000
A	CLAIMS-MADE X OCCUR			GLO 1365630	11/1/2020	11/1/2021	DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 100,000
							MED EXP (Any one person)	$ 10,000
							PERSONAL & ADV INJURY	$ 2,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 4,000,000
	X POLICY PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$ 4,000,000
	OTHER:							$
A	AUTOMOBILE LIABILITY	Y	Y	BAP 4641355 (AOS)	11/1/2020	11/1/2021	COMBINED SINGLE LIMIT (Ea accident)	$ 2,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$ XXXXXXX
	X OWNED AUTOS ONLY; SCHEDULED AUTOS						BODILY INJURY (Per accident)	$ XXXXXXX
	X HIRED AUTOS ONLY; X NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$ XXXXXXX
								$ XXXXXXX
	UMBRELLA LIAB OCCUR			NOT APPLICABLE			EACH OCCURRENCE	$ XXXXXXX
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$ XXXXXXX
	DED RETENTION $							$ XXXXXXX
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	N/A	Y	WC 4641353 (AOS)	11/1/2020	11/1/2021	X PER STATUTE OTH-ER	
A	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N: N			WC 4641354 (ID, MA, WI)	11/1/2020	11/1/2021	E.L. EACH ACCIDENT	$ 1,000,000
A	(Mandatory in NH)			WC 1365632	11/1/2020	11/1/2021	E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
A	If yes, describe under DESCRIPTION OF OPERATIONS below			WC 1365631 (NE)	11/1/2020	11/1/2021	E.L. DISEASE - POLICY LIMIT	$ 1,000,000
B	PROFESSIONAL LIABILITY	N	N	026030198	11/1/2020	11/1/2021	$10,000,000 PER CLAIM $10,000,000 ANNUAL AGGREGATE	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

PROJECT NAME: WA1908.271 PECOS ROAD WTP SURGE SYSTEM; PROJECT NUMBER: 400886.1; PROJECT MANAGER: CARUSO, MICHAEL E.; CITY OF CHANDLER IS INCLUDED AS AN ADDITIONAL INSURED ON THE GENERAL AND AUTO POLICIES. WAIVER OF SUBROGATION IN FAVOR OF THE ADDITIONAL INSURED ON THE GENERAL, AUTO, AND WOKRER'S COMPENSATION POLICIES. SEVERABILITY OF INTEREST IS INCLUDED.

CERTIFICATE HOLDER

17033445
CITY OF CHANDLER
PO BOX 4008, MAIL STOP 407
CHANDLER AZ 85244-4008

CANCELLATION See Attachments

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Joseph M Agnello

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POLICY NUMBER: GLO 4641358, GLO 1365630
COMMERCIAL GENERAL LIABILITY
CG 20 10 04 13

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - OWNERS, LESSEES OR CONTRACTORS - SCHEDULED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:
COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s)	Location(s) Of Covered Operations
AS REQUIRED BY WRITTEN CONTRACT	AS REQUIRED BY WRITTEN CONTRACT
Information required to complete this Schedule if not shown above will be shown in the Declarations.	

A. **Section** II - **Who Is An Insured** is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or

2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

C. With respect to the insurance afforded to these additional insureds, the following is added to Section III -Limits Of Insurance:

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or

2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Units of Insurance shown in the Declarations.

Attachment Code: D560353 Master ID: 1482177, Certificate ID: 17033445

BLACK & VEATCH CORPORATION

Waiver Of Subrogation (Blanket) Endorsement

Policy No.	Eff.Date of Pol.	Exp. Date of Pol.	Eff. Date of End.	Producer	Add'l. Prem	Return Prem.
GLO 4641358	11/1/2020	11/1/2021	11/1/2020			
GLO 1365630	11/1/2020	11/1/2021	11/1/2020			

This endorsement modifies the insurance provided under the following:

Commercial General Liability Coverage Part

The following is added to the **Transfer Of Rights Of Recovery Against Others To Us Condition:**

If you are required by a written contract or agreement, which is executed before a loss, to waive your rights of recovery from others, we agree to waive our rights of recovery. This waiver of rights shall not be construed to be a waiver with respect to any other operations in which the insured has no contractual interest.

POLICY NUMBER: BAP 4641355 (AOS)

COMMERCIAL AUTO
CA 20 48 02 99

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

DESIGNATED INSURED

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE
GARAGE COVERAGE FORM
MOTOR CARRIER COVERAGE FORM
TRUCKERS COVERAGE FORM

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by this endorsement.

This endorsement indentifies person(s) or organization(s) who are "insureds" under the Who Is An Insured Provision of the Coverage Form. This endorsement does not alter coverage provided in the Coverage Form.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement Effective:11/1/2020
Named Insured: BLACK & VEATCH CORPORATION

SCHEDULE

Name of Person(s) or Organization(s): AS REQUIRED PER WRITTEN CONTRACT

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to the endorsement.)

Each person or organization shown in the Schedule is an "insured" for Liability Coverage, but only to the extent that person or organization qualifies as an "insured" under the Who Is An Insured Provision contained in **Section II** of the Coverage Form.

BLACK & VEACH CORPORATION

Waiver of Transfer Of Rights Of Recovery Against Others To Us

Policy No.	Eff.Date of Pol.	Exp. Date of Pol.	Eff. Date of End.	Producer No.	Add'l. Prem	Return Prem.
BAP 4641355 (AOS)	11/1/2020	11/1/2021	11/1/2020			

This endorsement is issued by the company named in the Declarations. It changes the policy on the effective date listed above at the hour stated in the Declarations.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

Named Insured: BLACK & VEATCH CORPORATION

Address (including ZIP code): 11401 LAMAR OVERLAND PARK KS 66211

This endorsement modifies insurance provided under the:

Business Auto Coverage Form
Truckers Coverage Form
Garage Coverage Form
Motor Carrier Coverage Form

SCHEDULE

Name of the Person or Organization:
AS REQUIRED BY WRITTEN CONTRACT

We waive any right of recovery we amy have against the designated person or organization shown in the schedule because of payments we make for injury or damage caused by an "accident" or "loss" resulting from the ownership, maintenance, or use of a covered "auto" for which a Waiver of Subrogation is required in conjunction with work performed by you for the designated person or organization. The waiver applies only to the designated person or organization shown in the schedule.

Black & Veatch Corporation

WC 00 03 13

WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. (This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.)

This agreement shall not operate directly or indirectly to benefit anyone not named in the Schedule.

Schedule

AS REQUIRED PER WRITTEN CONTRACT

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.
(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)

Effective Policy No. WC 4641353 (AOS), WC 4641354 (ID, MA, WI), WC 1365632, WC 1365631 (NE)

Insured: BLACK & VEATCH CORPORATION

Effective Date: 11/1/2020

Notification to Others of Cancellation, Nonrenewal or Reduction of Insurance

Policy number: GLO 4641358, GLO 1365630
Policy Period: 11/1/2020 - 11/1/2021

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY. This endorsement modifies insurance provided under the:
Commercial General Liability Coverage Part
Liquor Liability Coverage Part
Products/Completed Operations Liability Coverage Part
A. If we cancel or non-renew this Coverage Part(s) by written notice to the first Named Insured for any reason other than nonpayment of premium, we will mail or deliver a copy of such written notice of cancellation or non-renewal:
1. To the name and address corresponding to each person or organization shown in the Schedule below; and
2. At least 10 days prior to the effective date of the cancellation or non-renewal, as advised in our notice to the first Named Insured, or the longer number of days notice if indicated in the Schedule below.
B. If we cancel this Coverage Part(s) by written notice to the first Named Insured for nonpayment of premium, we will mail or deliver a copy of such written notice of cancellation to the name and address corresponding to each person or organization shown in the Schedule below at least 10 days prior to the effective date of such cancellation.
C. If coverage afforded by this Coverage Part(s) is reduced or restricted, except for any reduction of Limits of Insurance due to payment of claims, we will mail or deliver notice of such reduction or restriction:
1. To the name and address corresponding to each person or organization shown in the Schedule below; and
2. At least 10 days prior to the effective date of the reduction or restriction, or the longer number of days notice if indicated in the Schedule below.
D. If notice as described in Paragraphs A., B. or C. of this endorsement is mailed, proof of mailing will be sufficient proof of such notice.

SCHEDULE
Name and Address of Other Person(s) / Organization(s): Number of Days Notice:
CITY OF CHANDLER

PO BOX 4008, MAIL STOP 407

CHANDLER AZ 85244-4008

30 Days

All other terms and conditions of this policy remain unchanged.

U-GL-1447-A CW (05/10)

Notification to Others of Cancellation, Nonrenewal or Reduction of Insurance

Policy number: BAP 4641355 (AOS)
Policy Period: 11/1/2020 - 11/1/2021

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.
This endorsement modifies insurance provided under the:
Commercial Automobile Coverage Part

A. If we cancel or non-renew this Coverage Part by written notice to the first Named Insured for any reason other than nonpayment of premium, we will mail or deliver a copy of such written notice of cancellation or non-renewal:
1. To the name and address corresponding to each person or organization shown in the Schedule below; and
2. At least 10 days prior to the effective date of the cancellation or non-renewal, as advised in our notice to the first Named Insured, or the longer number of days notice if indicated in the Schedule below.
B. If we cancel this Coverage Part by written notice to the first Named Insured for nonpayment of premium, we will mail or deliver a copy of such written notice of cancellation to the name and address corresponding to each person or organization shown in the Schedule below at least 10 days prior to the effective date of such cancellation.
C. If coverage afforded by this Coverage Part is reduced or restricted, except for any reduction of Limits of Insurance due to payment of claims, we will mail or deliver notice of such reduction or restriction:
1. To the name and address corresponding to each person or organization shown in the Schedule below; and
2. At least 10 days prior to the effective date of the reduction or restriction, or the longer number of days notice if indicated in the Schedule below.
D. If notice as described in Paragraphs A., B. or C. of this endorsement is mailed, proof of mailing will be sufficient proof of such notice.

SCHEDULE

Name and Address of Other Person(s) /
Organization(s): Number of Days Notice:

CITY OF CHANDLER

PO BOX 4008, MAIL STOP 407

CHANDLER AZ 85244-4008

30 Days

All other terms and conditions of this policy remain unchanged.

U-CA-811-A CW (05/10)

WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE POLICY WC 99 06 34

NOTIFICATION TO OTHERS OF CANCELLATION, NONRENEWAL OR REDUCTION OF INSURANCE ENDORSEMENT

This endorsement is used to add following to Part Six of the policy.

Policy number: WC 4641353 (AOS), WC 4641354 (ID, MA, WI), WC 1365632, WC 1365631 (NE)
Policy period: 11/1/2020 TO 11/1/2021

PART SIX CONDITIONS
A. If we cancel or non-renew this policy by written notice to you for any reason other than nonpayment of premium, we will mail or deliver a copy of such written notice of cancellation or non-renewal to the name and address corresponding to each person or organization shown in the Schedule below. Notification to such person or organization will be provided at least 10 days prior to the effective date of the cancellation or non-renewal, as advised in our notice to you, or the longer number of days notice if indicated in the Schedule below.
B. If we cancel this policy by written notice to you for nonpayment of premium, we will mail or deliver a copy of such written notice of cancellation to the name and address corresponding to each person or organization shown in the Schedule below at least 10 days prior to the effective date of such cancellation.
C. If coverage afforded by this policy is reduced or restricted, except for any reduction of Limits of Liability due to payment of claims, we will mail or deliver notice of such reduction or restriction to the name and address corresponding to each person or organization shown in the Schedule below. Notification to such person or organization will be provided at least 10 days prior to the effective date of the reduction or restriction, or the longer number of days notice if indicated in the Schedule below.
D. If notice as described in Paragraphs A., B. or C. of this endorsement is mailed, proof of mailing will be sufficient proof of such notice.

Schedule

Name and Address of Other Person (s) / Organization (s)

AS REQUIRED PER WRITTEN CONTRACT.

Number of Days Notice:
30 Days

All other terms and conditions of this policy remain unchanged.
This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

WC 99 06 34
(Ed. 05-10)

ENDORSEMENT # 033
This endorsement, effective 12:01 AM 11/01/2019
Forms a part of policy no.: 026030198
Issued to: BVH, INC
By: LEXINGTON INSURANCE COMPANY

NOTICE OF CANCELLATION TO CERTIFICATE HOLDERS ENDORSEMENT

Except respect cancellation non-payment premium (10 day notice cancellation), the Insurer shall give 30day notice cancellation the Certificate Holder(s) set forth herein, provided that:

The First Named Insured is required by contract give notice cancellation the Certificate Holder, and Prior the Insurer sending notice cancellation the First Named Insured the First Named Insured shall provide the Insurer in writing, either directly or through the First Named Insured broker record, the name each person or organization requiring notice cancellation and the corresponding address such person or the employee responsible receipt of notice of cancellation on behalf of such organization.

Notice cancellation be sent in accordance the terms and conditions the policy, except that the Insurer may provide written notice individually or collectively the Certificate Holders by email at the current email address given by the First Named Insured Proof sending the notice of cancellation by email shall be sufficient proof of notice. Any failure provide notice cancellation the Certificate Holder due inaccurate or incomplete information provided by the First Named Insured shall remain the sole responsibility the First Named Insured

The following definitions apply to this endorsement:
1. First Named Insured means the Named Insured shown in Item 1. of Declarations.
2. Insurer means the insurance company shown in the header on the Declarations.
All other terms and conditions of the policy remain the same.

LEXDOC021
LX0404

Additional Insured-Owners, Lessees or Contractors (Primary Insurance)

Policy No.	Eff.Date of Pol.	Exp. Date of Pol.	Eff. Date of End.	Producer	Add'l. Prem	Return Prem.
GLO 4641358	11/1/2020	11/1/2021	11/1/2020			
GLO 1365630	11/1/2020	11/1/2021	11/1/2020			

This endorsement modifies the insurance provided under the following:

Commercial General Liability Coverage Form

SCHEDULE

Name of the Person or Organization:

AS REQUIRED BY WRITTEN CONTRACT

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

SECTION II - WHO IS AN INSURED is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of your ongoing operations performed for that insured.

The insurance provided by this endorsement is primary insurance and we will not seek contribution from any other insurance available to the person or organization shown in the Schedule unless the other insurance is provided by a contractor other than you for the same operation and job location. Then we will share with that other insurance by the method described in paragraph 4.c. of SECTION IV -- COMMERCIAL GENERAL LIABILITY CONDITIONS.

BAP 4641355 (AOS)

COMMERCIAL AUTO
CA 04 49 11 16

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

PRIMARY AND NONCONTRIBUTORY – OTHER INSURANCE CONDITION

This endorsement modifies insurance provided under the following:

AUTO DEALERS COVERAGE FORM
BUSINESS AUTO COVERAGE FORM
MOTOR CARRIER COVERAGE FORM

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by the endorsement.

A. The following is added to the Other Insurance Condition in the Business Auto Coverage Form and the Other Insurance – Primary And Excess Insurance Provisions in the Motor Carrier Coverage Form and supersedes any provision to the contrary:
This Coverage Form's Covered Autos Liability Coverage is primary to and will not seek contribution from any other insurance available to an "insured" under your policy provided that:
1. Such "insured" is a Named Insured under such other insurance; and
2. You have agreed in writing in a contract or agreement that this insurance would be primary and would not seek contribution from any other insurance available to such "insured".

B. The following is added to the Other Insurance Condition in the Auto Dealers Coverage Form and supersedes any provision to the contrary:
This Coverage Form's Covered Autos Liability Coverage and General Liability Coverages are primary to and will not seek contribution from any other insurance available to an "insured" under your policy provided that:
1. Such "insured" is a Named Insured under such other insurance; and
2. You have agreed in writing in a contract or agreement that this insurance would be primary and would not seek contribution from any other insurance available to such "insured".

CHANDLER arizona
Community of Innovation

City Council Memorandum **Public Works & Utilities** **Memo No.** CP21-132

Date: April 19, 2021

To: Mayor and Council

Thru: Joshua H. Wright, Acting City Manager
Debra Stapleton, Assistant City Manager
John Knudson, Public Works and Utilities Director
Andrew Goh, Capital Projects Manager

From: Alisa Doll, Engineer

Subject: Professional Services Agreement No. ST2004.451, Amendment No. 1, with Ritoch-Powell & Associates Consulting Engineers, Inc., for the Alma School Road Improvements (Pecos Road to Germann Road)

Proposed Motion:

Move City Council award Professional Services Agreement No. ST2004.451, Amendment No. 1, to Ritoch-Powell & Associates Consulting Engineers, Inc., for the Alma School Road Improvements (Pecos Road to Germann Road), in the amount of $168,553, for a revised contract amount not to exceed $468,487.

Background/Discussion:

On June 25, 2020, City Council approved an agreement with Ritoch-Powell & Associates Consulting Engineers, Inc., for the Alma School Road Improvements (Pecos Road to Germann Road). This project provides for modifications to the northeast corner of Pecos and Alma School roads and widening Alma School Road to three through lanes in each direction from Maplewood Street to just south of Germann Road by modifying the current center median.

Amendment No. 1 to Professional Services Agreement ST2004.451 provides for additional construction management services and inspections for the Alma School Road Improvements at the Pecos Road intersection to accommodate north and southbound widening to three lanes and tapering down to two lanes north of the intersection. The section of Alma School Road south of the Pecos Road intersection to the Loop 202 Santan Freeway will be improved by private developers. An additional 240 calendar days have been added for a revised total of 510 calendar days to final completion, following Notice to Proceed.

A related Construction Change Order with Sunland Asphalt & Construction, Inc., for the Alma School Road Improvements (Pecos Road to Germann Road), is also scheduled for this City Council meeting.

Evaluation:

The selection process was conducted in accordance with City policy and procedure and State law for Professional Services. On June 25, 2020, City Council awarded Professional Services Agreement No. ST2004.451 to Ritoch-Powell & Associates Consulting Engineers, Inc., for the Alma School Road Improvements (Pecos Road to Germann Road). Staff reviewed the scope of work, billing rates, and total fee for the project and determined them to be reasonable.

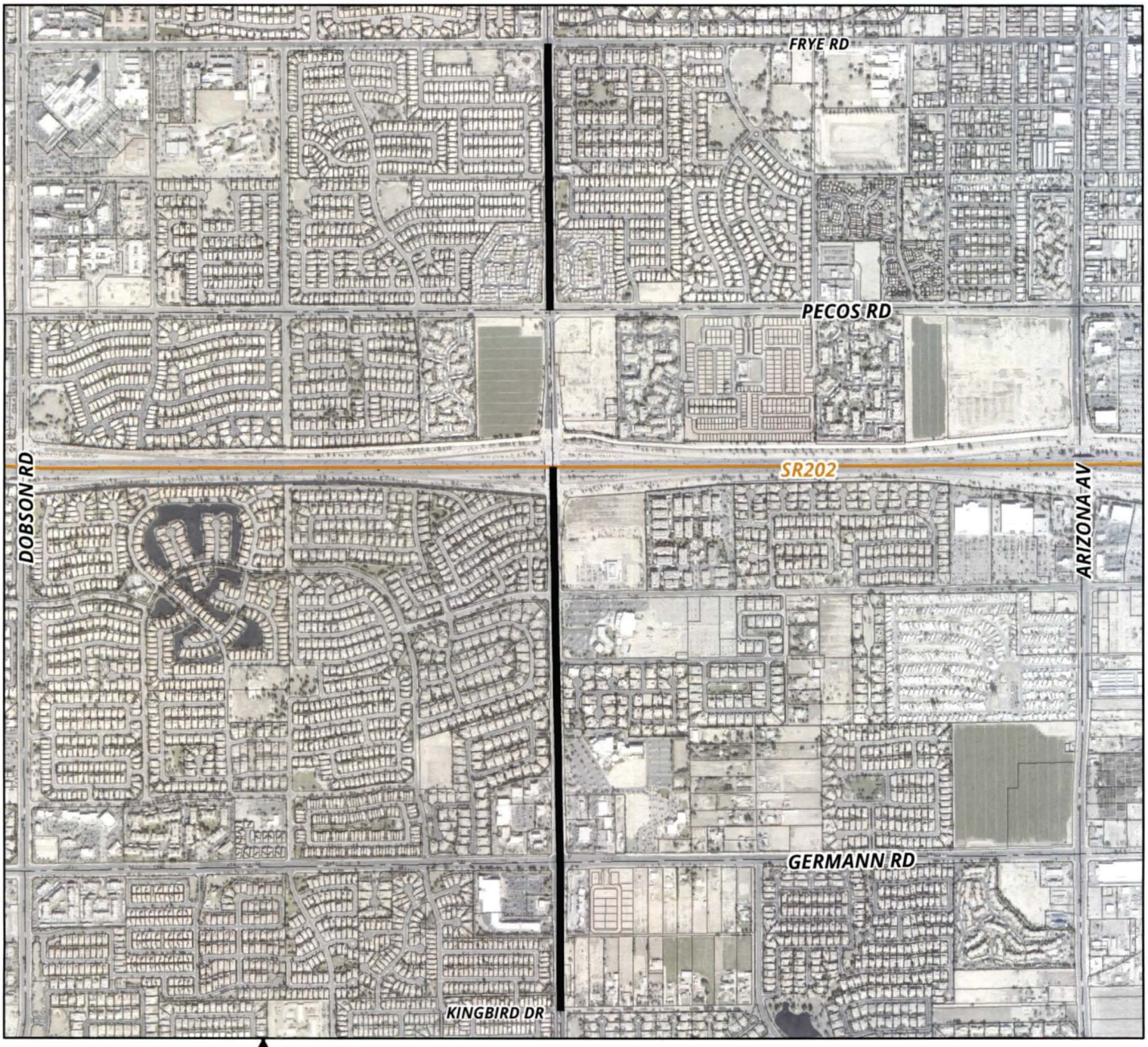
Fiscal Impact

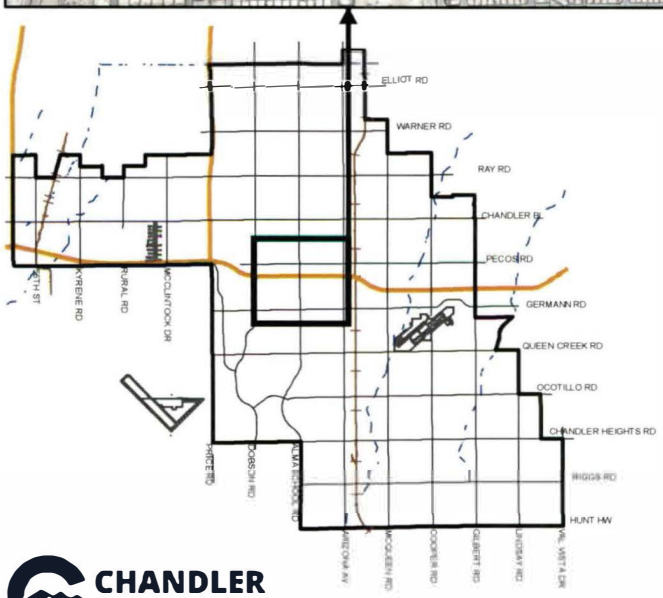
Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
411.3310.6517.6ST746	GO Bonds	Alma School Rd (Pecos to Germann)	$168,553.28	Y

Attachments

Location Map

Amendment - Ritoch Powell





ALMA SCHOOL ROAD IMPROVEMENTS (PECOS ROAD TO GERMANN ROAD) PROJECT NO. ST2004.451

MEMO NO. CP21-132

PROJECT SITE

CHANDLER arizona

NTS

ChanGIS

F:\ENGINEER\GENSERV_ArcMap_Shared\Map Requests\Capital Projects\CP20-196 ALMA SCHOOL ROAD IMPROVEMENTS (LOOP 202 TO PECOS ROAD)\CP20-196.mxd 5/27/2020 MARICELAH

AMENDMENT NO. 1 TO PROFESSIONAL SERVICES AGREEMENT
Construction Management Services
Alma School Road Improvements (Pecos Road to Germann Road)

Project No. ST2004.451
Council Date: April 22, 2021 Item No.

THIS AMENDMENT NO. 1 ("Amendment No. 1") to the agreement for services dated July 23, 2020 (the "Agreement") is made by and between the City of Chandler, an Arizona municipal corporation, ("City") and Ritoch-Powell & Associates Consulting Engineers, Inc. ("Consultant"), on this _____ day of _____, 2021 ("Effective Date"). (City and Consultant may individually be referred to as "Party" and collectively referred to as "Parties").

RECITALS

A. The Parties entered into the Agreement for the following services: Construction Management Services ("Services") for Alma School Road Improvements (Pecos to Germann Road) project.

B. The Parties have determined that it is necessary and desirable for the Consultant to perform additional services for the City under the terms and conditions set forth in this Amendment No. 1 and the Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the premises and mutual promises contained in the Agreement and this Amendment No. 1, the Parties agree to amend and modify the Agreement as follows.

SECTION I – CONSULTANT'S SERVICES

The Agreement is amended to add the modified scope of work described in **Exhibit "A"** attached to and made a part of this Amendment No. 1 by this reference.

SECTION II – PERIOD OF SERVICE

The Agreement is amended to increase the contract time by **240** calendar days for a total **510** calendar days.

SECTION III – PAYMENT OF COMPENSATION AND FEES

The Agreement is amended to increase the total contract price in an amount not to exceed **$ 168,553.28** for a total contract amount of **$ 468,487.28** payable in accordance with **Exhibit "B"** attached to and made a part of this Amendment No. 1 by this reference.

SECTION IV – CONFLICT AMONG DOCUMENTS

The Agreement and this Amendment No. 1 constitute the complete agreement between the Parties concerning the subject matter of the Agreement and replace any prior oral or written communications between the Parties. The terms and conditions of the Agreement are incorporated into and made a part of this Amendment No. 1. If a conflict or ambiguity arises among the Agreement and Amendment No. 1, the instrument in the following order prevails and controls: (1) Amendment No. 1; and (2) Agreement.

SIGNATURE PAGE TO FOLLOW

IN WITNESS WHEREOF, the Parties hereto have caused this Amendment No. 1 to be duly executed. Each Party warrants and represents that its respective signatories whose signatures appear below have been and are on the date of signature duly authorized to execute this Amendment No. 1.

"CITY"
CITY OF CHANDLER

_____
MAYOR

Recommended By:

_____
Andrew Goh, P.E.
CIP City Engineer

APPROVED AS TO FORM:

_____
City Attorney

ATTEST:

_____
City Clerk Seal

"CONSULTANT"
Ritoch-Powell & Associates Consulting Engineers, Inc.

_____ 3/29/21
Signature Date

Karl Obergh
Print Name

Principal/CEO
Title

kobergh@rpaeng.com
Signer Email Address

These changes result in the following adjustments of contract amount and time:

Original Contract amount:	$ 299,934
Current Contract amount, prior to this Amendment: (including previous Amendments)	$ 299,934
Net change resulting from this Amendment:	$168,553.28
Revised Contract amount, including this Amendment:	$ 468,487.28
Last Contract amount approved by Council:	$299,934
Amendment % of last Contract amount approved by Council: (if accumulated amount over 10% of previous Contract amount approved by Council, Council approval is required)	56%

Contract time or completion date prior to this Amendment: (including previous amendments)	**270** Days	or	_____ Date
Net change resulting from this Amendment:	**240** Days	or	_____ Date
Revised Contract time or completion date: (including this amendment)	**510** Days	or	_____ Date

THIS AMENDMENT No. _____ does NOT require Council approval: _____
Amendment is less than 10% of Contract amount last approved by Council

THIS AMENDMENT No. 1 does require Council approval: X
Amendment is over 10% of previous Contract amount approved by Council

Amendment No. 1 Council approval: _____ Item No.: _____, if applicable

OWNER NAME & DATE APPROVAL: **Andy Goh, 3/24/21**

E-copy: Project Mgr. Consultant Owner File

EXHIBIT A
SCOPE OF WORK

EXHIBIT "A"
PRECONSTRUCTION & CONSTRUCTION MANAGEMENT
ALMA SCHOOL ROAD SCOPE OF SERVICES

PROJECT TASKS

1. PRE-CONSTRUCTION ASSISTANCE

1.1 MEETINGS

1.1.1 Preconstruction Conference Meetings

1.1.1.1 Consultant will attend one (1) Preconstruction Meeting.

1.2 COST MODELS & GUARANTEED MAXIMUM PRICE (GMP)

1.2.1 GMP

1.2.1.1 Upon receipt of CM@R's GMP submittal, Consultant will review, and provide comment to City, GMP utilizes unit prices in previous cost models and includes CM@R's Construction Fee, General Conditions Costs, Taxes, Insurance, Bonds, and Project Allowances and Contingencies. This task assumes one (1) GMP review only. Consultant assumes the GMP utilizes the same unit prices for the same item of work as detailed in the Phase 1 construction contract.

2. CONSTRUCTION MANAGEMENT

2.1 Weekly Construction Meetings

2.1.1 Consultant must conduct weekly construction meetings. Each meeting includes agenda and minutes; Request for Information (RFI); Shop Drawing; Request for Information (RFI); Field Directive (FD); and Allowance Logs will be attached to agendas and meeting minutes. Consultant assumes sixteen (16) weekly meetings will be held.

2.2 CPM Schedule

2.2.1 Consultant must review and evaluate Contractor's initial CPM schedule and provide recommendations. CM assumes one (1) review of initial CPM schedule.

2.2.2 Consultant must review Contractor's monthly CPM schedule updates submitted with each payment application, identify CPM tasks behind schedule that may affect critical path items, project substantial and final completion dates and initiate correspondence to City regarding those tasks. Consultant assumes four (4) reviews of updated CPM schedule.

2.3 Requests for Information (RFI's)

2.3.1 Consultant must review, evaluate, and respond to Contractor RFI's. Consultant assumes a maximum of ten (10) RFI responses.

2.3.2 Consultant must prepare and maintain a submittal log of all RFI's.

2.4 Shop Drawing Submittals

2.4.1 Consultant must review, evaluate, and respond to Contractor shop drawing submittals. Consultant assumes a maximum of twenty (20) submittals.

2.4.2 Consultant must prepare and maintain a submittal log of all shop drawing submittals.

2.5 Requests for Proposal (RFP)

2.5.1 Consultant must prepare, review responses (cost derivations) and provide

recommendations for RFP documents detailing requested additional work tasks. Consultant assumes maximum of five (5) RFPs.

2.5.2 Consultant must prepare and maintain a submittal log list of all RFPs.

2.6 Time & Material (T&M)

2.6.1 Consultant must prepare, submit, document contractor's actual T&M work performed, approve and process T&M payment for additional work tasks. Consultant assumes maximum of five (5) T&Ms.

2.6.2 Consultant must prepare and maintain a submittal log list of all RFPs.

2.7 Field Directives (FD's)

2.7.1 Consultant must prepare FD documents detailing requested additional work tasks, review and evaluate Contractor FD responses and provide recommendations. Consultant assumes a maximum of ten (10) FD's.

2.7.2 Consultant must prepare and maintain a submittal log list of all FD's.

2.8 Contractor Payment Applications

2.8.1 Consultant must review and evaluate Contractor monthly payment applications and make recommendation for payment. Consultant assumes a maximum of five (5) payment applications.

2.8.2 Coordinate payment application with the City quantity report and the inspectors' daily logs.

2.9 Public Outreach

2.9.1 Consultant must provide public outreach services. Tasks will include: create and maintain project website; maintain a 24-hour bilingual project hotline to respond to inquiries, complaints and maintain a call log; public weekly email updates; public interactions with property owners as a liaison between property owners and the City; coordination meetings; project meetings.

3. CONSTRUCTION INSPECTION

3.1 Inspection Services

3.1.1 Consultant must provide daily construction inspection to verify materials and installations conform to construction documents.

3.1.2 Consultant must prepare daily inspection reports documenting Contractor construction activities and progress noted during field inspection visits.

3.1.3 Consultant must maintain a weekly record of constructed pay quantities and compile monthly totals.

3.2 Project Closeout

3.2.1 Consultant must compile non-conformance list prior to Substantial Completion.

3.2.2 Consultant must schedule and conduct substantial completion inspection.

3.2.3 Consultant must prepare substantial completion punch list. Consultant must track items on the punch list and note the completed items.

3.2.4 Consultant must schedule and conduct final completion inspection.

3.2.5 Consultant must complete, acquire signatures and distribute the substantial and final completion certificates.

4. UTILITY COORDINATION

4.1 Utility Coordination

4.1.1 Consultant must coordinate with utility providers and City's utility departments'

representative.

5. RECORD DRAWINGS

5.1 Record Drawings

5.1.1 Review and monitor Contractor's weekly updates on red-line drawing set.

5.1.2 Transfer red-line comments to City's construction plans to create record drawings.

5.1.3 Provide resident engineer and/or landscape architect stamp/certification on record drawings cover sheet. Ensure all required signatures on the cover sheet.

5.1.4 Provide and deliver record drawings in digital pdf format to the City.

6. PROJECT MANAGEMENT

6.1 Project Monitoring

6.1.1 CONSULTANT must prepare regular monthly progress reports.

6.1.2 CONSULTANT must perform regular budget monitoring.

6.1.3 Pay applications will be submitted monthly. Invoices will be broken down to the same level of detail as the attached fee schedule.

6.2 Manage Sub-Consultants

6.2.1 CONSULTANT must monitor subconsultants schedule and work products and ensure that all activities are coordinated.

ASSUMPTION, CLARIFICATIONS, AND EXCLUSIONS

1. Total contract time is assumed to be 16 calendar weeks for all preconstruction, construction and contract close out CM services.
2. Project Designer will provide Post Design Services to respond to and provide responses for design basis related questions identified during construction activities.
3. Inspection time is based on Contractor working for 10 hour days five (5) days a week for 12 weeks, and 10 hour days one (1) day a week for four (4) weeks.
4. Application fees for City reviews and permits will be paid by CITY.
5. Allowances will only be utilized with prior written approval from the City representative.
6. The Direct Expense Allowance will be used for normal reimbursable expenses on the project. Items must be billed at cost and backup must be provided with pay applications.
7. The following items are excluded from this scope of work:
   a. Public Meetings
   b. Special Inspections
   c. Aerial Mapping and photography
   d. Environmental Investigation
   e. Landscape and irrigation inspection services of layouts and/or pressure test
   f. Traffic engineering or CM services
   g. Potholing and survey for potholing
   h. Private and public utility relocation design
   i. Drainage analysis or design
   j. Pavement design

EXHIBIT B
FEE SCHEDULE

EXHIBIT "B"
COST PROPOSAL SUMMARY

PROJECT NAME:	Alma School (Pecos to SR 202)
PROJECT NO.:	City Project No. ST2004.451
FEDERAL PROJECT NO.:	N/A
TRACS NO.:	N/A

CONTRACT LABOR

CLASSIFICATION	MAN HOURS	BILLING RATES	LABOR COSTS
Principal	0	$ 245.00	$ -
Project Manager - Sr./Engineering Dept M	0	$ 200.00	$ -
Project Manager - Sr.	35	$ 180.00	$ 6,300.00
Project Engineer - Sr.	0	$ 140.00	$ -
EIT	215	$ 115.00	$ 24,725.00
Inspection/Construction Observer	656	$ 120.00	$ 78,720.00
Project Coordinator	31	$ 85.00	$ 2,635.00
Registered Land Surveyor - Sr.	0	$ 145.00	$ -
Registered Land Surveyor	0	$ 130.00	$ -
Chief of Survey Crews	0	$ 110.00	$ -
2-Person Survey Crew	0	$ 150.00	$ -
Administrative Assistant	6	$ 65.00	$ 390.00
		TOTAL DIRECT LABOR	$ 112,770.00
		SUBTOTAL CONTRACT LABOR	**$ 112,770.00**

Subtotal Contract Labor	$ 112,770.00
Subtotal Direct and Outside Expenses	$ 233.28
Subtotal Subconsultants	$ 40,550.00
Total Contract Fee	$ 153,553.28
Subtotal Allowances	$ 15,000.00
Total Contract Fee & Allowances	**$ 168,553.28**

DIRECT AND OUTSIDE EXPENSES

	DESCRIPTION	UNIT	UNIT RATE	QUANTITY	TOTAL
1	Personal Vehicle Mileage	Miles	$ 0.54	$ 432.00	$ 233.28
2					$ -
3					$ -
4					$ -
5					$ -
	REPRODUCTIONS - AT COST (Estimates Only)				
	Printing (8-1/2" x 11")	Each	$ 0.10		$ -
	Printing (11" x 17")	Each	$ 0.15		$ -
	Bond Large Format	Each	$ 1.44		$ -
	Mylar Large Format	Each	$ 12.14		$ -
	Exhibits	Each	$ 250.00		$ -
	Deliveries/Postage	Each	$ 50.00		$ -
				SUBTOTAL DIRECT AND OUTSIDE EXPENSES	**$ 233.28**

SUBCONSULTANTS FEE

	SUBCONSULTANT	TASK	FEE
1	Kimley Horn	Resident Engineer	$ 34,750.00
2	MakPro Allowance	Public Outreach	$ 5,800.00
3			
4			
5			
6			$ -
7			$ -
8			$ -
9			$ -
10			$ -
		SUBTOTAL SUBCONSULTANTS FEE	**$ 40,550.00**

ALLOWANCES

	CONSULTANT/EXPENSES	TASK	FEE
1	Owner Allowance	Non-Scope Tasks	$ 15,000.00
2			
3			
4			
5			
		SUBTOTAL ALLOWANCES	**$ 15,000.00**

CONTRACT TERMS

PAYMENT METHOD		LUMP SUM	2020 Standard Hourly Rate Schedule
	X	TIME AND MATERIALS	(RPA RATE TABLE NAME)
CONTRACT DURATION	240	(CALENDAR DAYS)	
PROCUREMENT METHOD	X	SOLICITATION / DIRECT SELECT	
		ON-CALL TASK ORDER	
			(ON-CALL CONTRACT NO.)

RPA
RITCHEY-POWELL & Associates

DERIVATION OF COST PROPOSAL SUMMARY

Task	Description	# of Sheets	Principal	Project Manager - Sr./Engineering Dept Manager	Project Manager - Sr.	Project Engineer - Sr.	EIT	Inspection/Construction Observer	Project Coordinator	Registered Land Surveyor - Sr.	Registered Land Surveyor	Chief of Survey Crews	2-Person Survey Crew	Administrative Assistant	Total Hours By Task	Total Cost By Task
	Hourly Rate		$ 245.00	$ 200.00	$ 180.00	$ 140.00	$ 115.00	$ 120.00	$ 85.00	$ 145.00	$ 130.00	$ 110.00	$ 150.00	$ 65.00		
1	Precon Assistance															
1.1	Pre-Construction Meeting (1)				1		1		1						3	$380.00
1.2	GMP review & comment				1		6								7	$870.00
	SUBTOTAL Precon Assistance		**0**	**0**	**2**	**0**	**7**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**10**	**$1,250.00**
2.1	**CM Weekly Meetings**															
2.1.1	Conduct mtgs, agenda, minutes (16)				8		32		16						56	$6,480.00
			0	**0**	**8**	**0**	**32**	**0**	**16**	**0**	**0**	**0**	**0**	**0**	**56**	**$6,480.00**
2.2	**CM CPM Schedule**															
2.2.1	Review & comment baseline CPM						4								4	$460.00
2.2.2	Review & comment monthly CPM (4)						4								4	$460.00
	SUBTOTAL CM CPM Schedule		**0**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**$920.00**
2.3	**CM RFIs**															
2.3.1	Review, evaluate & respond (10)						15								15	$1,725.00
2.3.2	Prepare & update log						4								4	$460.00
	SUBTOTAL CM RFIs		**0**	**0**	**0**	**0**	**19**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**19**	**$2,185.00**
2.4	**CM Shop Drawings**															
2.4.1	Review, evaluate & respond (20)						30								30	$3,450.00
2.4.2	Prepare & update log						4								4	$460.00
	SUBTOTAL CM Shop Drawings		**0**	**0**	**0**	**0**	**34**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**34**	**$3,910.00**

RPA
RITOCH-POWELL & Associates

DERIVATION OF COST PROPOSAL SUMMARY

Task	Description	# of Sheets	Principal	Project Manager - Sr./Engineering Dept Manager	Project Manager - Sr.	Project Engineer - Sr.	EIT	Inspection/Construction Observer	Project Coordinator	Registered Land Surveyor - Sr.	Registered Land Surveyor	Chief of Survey Crews	2-Person Survey Crew	Administrative Assistant	Total Hours By Task	Total Cost By Task
	Hourly Rate		$ 245.00	$ 200.00	$ 180.00	$ 140.00	$ 115.00	$ 120.00	$ 85.00	$ 145.00	$ 130.00	$ 110.00	$ 150.00	$ 65.00		
2.5	**CM RFPs**															
2.5.1	Prepare, evaluate & respond (5)						10								10	$1,150.00
2.5.2	Prepare & update log						4								4	$460.00
	SUBTOTAL CM RFPs		**0**	**0**	**0**	**0**	**14**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**$1,610.00**
2.6	**CM T&Ms**															
2.6.1	Prepare, evaluate & respond (5)						5								5	$575.00
2.6.2	Prepare & update log						2								2	$230.00
	SUBTOTAL CM T&Ms		**0**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**$805.00**
2.7	**CM Field Directives**															
2.7.1	Prepare, evaluate & respond (10)						10								10	$1,150.00
2.7.2	Prepare & update log						4								4	$460.00
	SUBTOTAL CM Field Directives		**0**	**0**	**0**	**0**	**14**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**$1,610.00**
2.8	**CM - Contractor Payment Applications**															
2.8.1	Review & evaluate pay apps (5)						10								10	$1,150.00
2.8.2	Coord w/ City report & inspector reports						5								5	$575.00
	SUBTOTAL CM - Contractor Payment Applications		**0**	**0**	**0**	**0**	**15**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**$1,725.00**
2.9	**CM - Public Outreach**															
2.9.1	Weekly coord, review & updates						8								8	$920.00
	SUBTOTAL CM - Public Outreach		**0**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**$920.00**

PHOENIX: 1001 N. Central Avenue, Suite 900, Phoenix, AZ 85004 | P: 602-263-1177 | F: 602-277-6286
MESA: 63 E. Main Street, Suite 502, Mesa, AZ 85201 | P: 480-539-7497 | F: 480-539-2810
www.rpaeng.com

RPA
RITOCH-POWELL & ASSOCIATES

DERIVATION OF COST PROPOSAL SUMMARY

Task	Description	# of Sheets	Principal	Project Manager - Sr./Engineering Dept Manager	Project Manager - Sr.	Project Engineer - Sr.	EIT	Inspection/Construction Observer	Project Coordinator	Registered Land Surveyor - Sr.	Registered Land Surveyor	Chief of Survey Crews	2-Person Survey Crew	Administrative Assistant	Total Hours By Task	Total Cost By Task
	Hourly Rate		$ 245.00	$ 200.00	$ 180.00	$ 140.00	$ 115.00	$ 120.00	$ 85.00	$ 145.00	$ 130.00	$ 110.00	$ 150.00	$ 65.00		
3.1	**Construction Daily Inspection**															
3.1.1	Daily onsite w/ reports				16			640							656	$79,680.00
	SUBTOTAL Construction Daily Inspection		**0**	**0**	**16**	**0**	**0**	**640**	**0**	**0**	**0**	**0**	**0**	**0**	**656**	**$79,680.00**
3.2	**Construction Project Closeout**															
3.2.1	Compile nonconformance list						4								4	$460.00
3.2.2	Schedule/conduct Substantial inspect						4								4	$460.00
3.2.3	Prepare Substantial punch list						4								4	$460.00
3.2.4	Schedule/conduct Final inspect						4								4	$460.00
3.2.5	Complete/distribute completion certs						2								2	$230.00
	SUBTOTAL Construction Project Closeout		**0**	**0**	**0**	**0**	**18**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18**	**$2,070.00**
4.1	**Utility Coordination**															
4.1.1	Utility Coordination						12								12	$1,380.00
	SUBTOTAL Utility Coordination		**0**	**0**	**0**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**$1,380.00**
5.1	**Record Drawings**															
5.1.1	Review Contractor's weekly redlines							16							16	$1,920.00
5.1.2	Transfer Contractor Redlines to Mylars						24								24	$2,760.00
5.1.3	Provide RE and LA Certification						1								1	$115.00
5.1.4	Deliver Record Drawings (Mylar & PDF)						2								2	$230.00
	SUBTOTAL Record Drawings		**0**	**0**	**0**	**0**	**27**	**16**	**0**	**0**	**0**	**0**	**0**	**0**	**43**	**$5,025.00**
6.1	**Project Monitoring**															
6.1.1	Monthly monitoring, invoice & report				6				9					6	21	$2,235.00
	SUBTOTAL Project Monitoring		**0**	**0**	**6**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**6**	**21**	**$2,235.00**

PHOENIX: 1001 N. Central Avenue, Suite 900, Phoenix, AZ 85004 | P: 602-263-1177 | F: 602-277-6286
MESA: 63 E. Main Street, Suite 502, Mesa, AZ 85201 | P: 480-539-7497 | F: 480-539-2810
www.rpaeng.com

DERIVATION OF COST PROPOSAL SUMMARY

Task	Description	# of Sheets	Principal	Project Manager - Sr./Engineering Dept Manager	Project Manager - Sr.	Project Engineer - Sr.	EIT	Inspection/Construction Observer	Project Coordinator	Registered Land Surveyor - Sr.	Registered Land Surveyor	Chief of Survey Crews	2-Person Survey Crew	Administrative Assistant	Total Hours By Task	Total Cost By Task
	Hourly Rate		$ 245.00	$ 200.00	$ 180.00	$ 140.00	$ 115.00	$ 120.00	$ 85.00	$ 145.00	$ 130.00	$ 110.00	$ 150.00	$ 65.00		
6.2	**ManageSub-consultants**															
6.2.1	Manage sub-consultants				3				5						8	$965.00
SUBTOTAL ManageSub-consultants			**0**	**0**	**3**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**8**	**$965.00**
	Total Hours		**0**	**0**	**35**	**0**	**215**	**656**	**31**	**0**	**0**	**0**	**0**	**6**	**943**	
	Total Dollars		**$ -**	**$ -**	**$ 6,300.00**	**$ -**	**$ 24,725.00**	**$ 78,720.00**	**$ 2,635.00**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 390.00**		**$ 112,770.00**

PRECONSTRUCTION & CONSTRUCTION MANAGEMENT
ALMA SCHOOL ROAD AND PECOS ROAD CONSTRUCTION MANAGEMENT

Project Tasks

1. PRE-CONSTRUCTION ASSISTANCE

1.1 MEETINGS

1.1.1 Preconstruction Conference Meetings

1.1.1.1 Consultant will attend one (1) Preconstruction Meeting.

1.2 DESIGN REVIEW

1.2.1 Project Design and Constructability Review

1.2.1.1 Consultant will perform a review of all construction documents for familiarity and for general conformance with City requirements.

1.3 COST MODELS & GUARANTEED MAXIMUM PRICE (GMP)

1.3.1 GMP

1.3.1.1 Upon receipt of CM@R's GMP submittal, Consultant will review, and provide comment to City, GMP utilizes unit prices in previous cost models and includes CM@R's Construction Fee, General Conditions Costs, Taxes, Insurance, Bonds, and Project Allowances and Contingencies.

2. CONSTRUCTION MANAGEMENT

2.1 Weekly Construction Meetings

2.1.1 Consultant must conduct weekly construction meetings. Consultant assumes sixteen (16) weekly meetings will be held.

2.2 CPM Schedule

2.2.1 Consultant must review and evaluate Contractor's initial CPM schedule and provide recommendations. CM assumes one (1) review of initial CPM schedule.

2.2.2 Consultant must review Contractor's monthly CPM schedule updates submitted with each payment application, identify CPM tasks behind schedule that may affect critical path items, project substantial and final completion dates and initiate correspondence to City regarding those tasks. Consultant assumes four (4) reviews of updated CPM schedule.

2.3 Requests for Information (RFI's)

2.3.1 Consultant must review, evaluate, and respond to Contractor Requests for Information (RFI's). Consultant assumes a maximum of seven (7) RFI responses.

2.4 Shop Drawing Submittals

2.4.1 Consultant must review, evaluate, and respond to Contractor shop drawing submittals. Consultant assumes a maximum of twenty (20) submittals.

2.5 Requests for Proposal (RFP)

2.5.1 Consultant must prepare, review responses (cost derivations) and provide recommendations for RFP documents detailing requested additional work tasks. Consultant assumes maximum of five (5) RFPs.

2.6 Time & Material (T&M)

2.6.1 Consultant must prepare, submit, document contractor's actual T&M work performed, approve and process T&M payment for additional work tasks. Consultant assumes maximum of five (5) T&Ms.

2.7 Field Directives (FD's)

2.7.1 Consultant must prepare FD documents detailing requested additional work tasks, review and evaluate Contractor FD responses and provide recommendations. Consultant assumes a maximum of ten (10) FD's.

2.8 Contractor Payment Applications

2.8.1 Consultant must review and evaluate Contractor monthly payment applications and make recommendation for payment. Consultant assumes a maximum of five (5) payment applications.

2.8.2 Coordinate payment application with the City quantity report and the inspectors' daily logs.

2.9 Public Outreach

2.9.1 Consultant must coordinate with the City and Ritoch-Powell for public outreach services.

3. CONSTRUCTION INSPECTION

3.1 Inspection Services

3.1.1 Consultant must provide supplemental construction inspection and site visits to review construction progress and construction issues. Consultant assumes one (1) site visit for three (3) hours per week for twelve (12) weeks.

3.2 Project Closeout

3.2.1 Consultant must review non-conformance list prior to Substantial Completion.

3.2.2 Consultant must schedule and conduct substantial and final completion inspection.

3.2.3 Consultant must prepare substantial completion punch list generated from substantial completion inspection.

3.2.4 Consultant must complete and distribute the substantial and final completion certificates.

4. UTILITY COORDINATION

4.1 Utility Coordination

4.1.1 Consultant must coordinate with utilities providers and City's utility departments.

5. MATERIALS TESTING

5.1 Quality Assurance (QA) Test Program

5.1.1 Consultant must review Contractor's QC testing reports.

6. RECORD DRAWINGS

6.1 Record Drawings

6.1.1 Review and monitor Contractor's weekly updates on red-line drawing set. Review Record Drawings prepared by Ritoch-Powell.

7. PROJECT MANAGEMENT

7.1 Project Management and Project Monitoring

7.1.1 Consultant must perform regular budget monitoring. Pay applications will be submitted monthly.

ASSUMPTION, CLARIFICATIONS, AND EXCLUSIONS

1. Application fees for City reviews and permits will be paid by CITY.
2. The Direct Expense Allowance will be used for normal reimbursable expenses on the project. Items must be billed at cost and backup must be provided with pay applications.
3. All meeting agendas and minutes will be prepared by Ritoch-Powell.
4. Kimley-Horn's understanding is that Kimley-Horn will provide Resident Engineer services and oversight for each of the tasks mentioned in this scope. A majority of the detailed reviews and effort will be done by Ritoch-Powell.
5. Consultant will not supervise, direct, or have control over the Contractor's work, nor shall the Consultant have authority to stop the work or have responsibility for the means, methods, techniques, equipment choice and usage, schedules, or procedures of construction selected by the Contractor, for safety programs incident to Contractor's work, or for any failure of Contractor to comply with any laws.
6. Consultant does not guarantee the performance of any Contractor and has no responsibility for the Contractor's failure to perform its work in accordance with the Contract Documents.
7. The following items are excluded from this scope of work:
    a. Public Meetings
    b. Material Testing
    c. Private and Public Utility Relocation Design
    d. GIS Survey and Topographic Survey

Detail of Consultant's Compensation
Alma School Road and Pecos Road Pre-Construction Construction Management
March 12th, 2021

Kimley»Horn

TASK DESCRIPTION	SUBTOTAL	Sr. PM/Prof II	Sr. Prof.	Resident Engineer	Analyst	Designer	Admin.
		$ 205.00	$ 180.00	$ 160.00	$ 140.00	$ 120.00	$ 75.00
1 - PRE-CONSTRUCTION ASSISTANCE	**$ 2,720**	-	-	**17**	-	-	-
1.1.1 Preconstruction Conference Meeting	$ 640			4			
1.2.1 Project Design and Constructabilty Review	$ 800			5			
1.3.1 GMP Review	$ 1,280			8			
2 - CONSTRUCTION MANAGEMENT	**$ 19,680**	-	-	**123**	-	-	-
2.1 Weekly Construction Meetings	$ 6,400			40			
2.2 CPM Schedule	$ 1,920			12			
2.3 Requests for Information (RFI)	$ 1,120			7			
2.4 Shop Drawings	$ 3,200			20			
2.5 Requests for Proposal (RFP)	$ 1,600			10			
2.6 Time & Materials (T&M)	$ 1,600			10			
2.7 Field Directives (FD)	$ 2,400			15			
2.8 Contractor Payment Applications	$ 800			5			
2.9 Public Outreach	$ 640			4			
3 - CONSTRUCTION INSPECTION	**$ 7,360**	-	-	**46**	-	-	-
3.1 Inspection Services	$ 5,760			36			
3.2 Project Closeout	$ 1,600			10			
4 - UTILITY COORDINATION	**$ 800**	-	-	**5**	-	-	-
4.1 Utility Coordination	$ 800			5			
5 - MATERIALS TESTING	**$ 800**	-	-	**5**	-	-	-
5.1 Quality Assurance (QA) Test Program	$ 800			5			
6 - RECORD DRAWINGS	**$ 1,120**	-	-	**7**	-	-	-
6.1 Record Drawings	$ 1,120			7			
7 - Project Management	**$ 1,770**	-	**2**	**6**	-	-	**6**
7.1 Project Management and Project Monitoring	$ 1,770		2	6			6
ALMA SCHOOL SUBTOTAL DIRECT LABOR	**$ 34,250**	**0**	**2**	**209**	**0**	**0**	**6**
DIRECT EXPENSES							
EXPENSES	**$ 500**						
ALMA SCHOOL TOTAL CONTRACT FEE	**$ 34,750**						

From: Teresa Makinen
To: Shea Perry
Subject: [External] MakPro Estimate for Extension of Project - ST2004-401 Alma School Road Improvements
Date: Thursday, March 11, 2021 8:57:35 AM

Good morning Shea,

Thank First of all, thank you for the opportunity to take another look at our budget as it related to the additional effort for the extension of the Alma School Road Improvements project for an additional three months. additional three months, on behalf of MakPro, I would like to **request an increase to our budget of $4,000**, bringing our grand total for the project to $14,000. Our original budget was $10,000, and through end of February we've expended $8,200, leaving $1,800 available. I've detailed the effort for the additional three months in the table below:

ALMA SCHOOL ROAD IMPROVEMENTS			
Activity	Principal Hrs ($110/hr)	Associate Hrs ($90/hr)	Total
Public Outreach Services			
Task 1: Develop & Maintain Project Website	6	4	$1,020
Task 2: Progress Meetings (12)	6	12	$1,740
Task 3: Public Communications	6	8	$1,380
Task 4: Community Contact	6	10	$1,560
Sub Total	23	34	$5,700
Reimbursable Expenses			$100
Grand Total			$5,800
Remaining on contract			<$1,800>
Additional Funds Requested			$4,000

Please take a look and let me know if you have questions or need additional information. Thanks so much and have a great day!

Teresa Makinen
O: 480.890.1927
C: 602.421.3069

CHANDLER arizona
Community of Innovation

City Council Memorandum **Public Works & Utilities** **Memo No.** CP21-133

Date: April 19, 2021

To: Mayor and Council

Thru: Joshua H. Wright, Acting City Manager
Debra Stapleton, Assistant City Manager
John Knudson, Public Works and Utilities Director
Andrew Goh, Capital Projects Manager

From: Alisa Doll, Engineer

Subject: Construction Management at Risk Contract No. ST2004.401, Change Order No. 2, with Sunland Asphalt & Construction, Inc., for the Alma School Road Improvements (Pecos Road to Germann Road)

Proposed Motion:

Move City Council award Construction Management at Risk Contract No. ST2004.401, Change Order No. 2, to Sunland Asphalt & Construction, Inc., for the Alma School Road Improvements (Pecos Road to Germann Road), in the amount of $1,981,059, for a revised contract amount not to exceed $6,365,059.

Background/Discussion:

On July 16, 2020, City Council approved a contract with Sunland Asphalt & Construction, Inc., for the Alma School Road Improvements (Pecos Road to Germann Road). This project provides for modifications to the northeast corner of Pecos and Alma School roads and widening Alma School Road to three through lanes in each direction from Maplewood Street to just south of Germann Road by modifying the current center median.

Change Order No. 2 to Construction Management at Risk Contract No. ST2004.401 provides for additional scope of work for the Alma School Road improvements at the Pecos Road intersection to accommodate north and southbound widening to three lanes, and tapering down to two lanes north of the intersection. The section of Alma School Road south of the Pecos Road intersection to the Loop 202 Santan Freeway will be improved by private developers. An additional 60 calendar days has been added for a revised total of 400 calendar days to final completion, following Notice to Proceed.

A related Professional Services Amendment with Ritoch-Powell & Associates Consulting Engineers, Inc., for the Alma School Road Improvements (Pecos Road to Germann Road), is also scheduled for this City Council meeting.

Evaluation:

The selection process was conducted in accordance with City policy and procedure and State law for Professional Services. On July 16, 2020, City Council awarded Professional Services Agreement No. ST2004.401 to Sunland Asphalt & Construction, Inc., for the Alma School Road Improvements (Pecos Road to Germann Road). Staff reviewed the scope of work, billing rates, and total fee for the project and determined them to be reasonable.

Financial Implications:

The amount of $1,545,758 will be utilized as a result of savings on the Commonwealth Avenue - California to Essex Site 4 & 5 (6ST732) and Washington Street ROW (6ST702) projects.

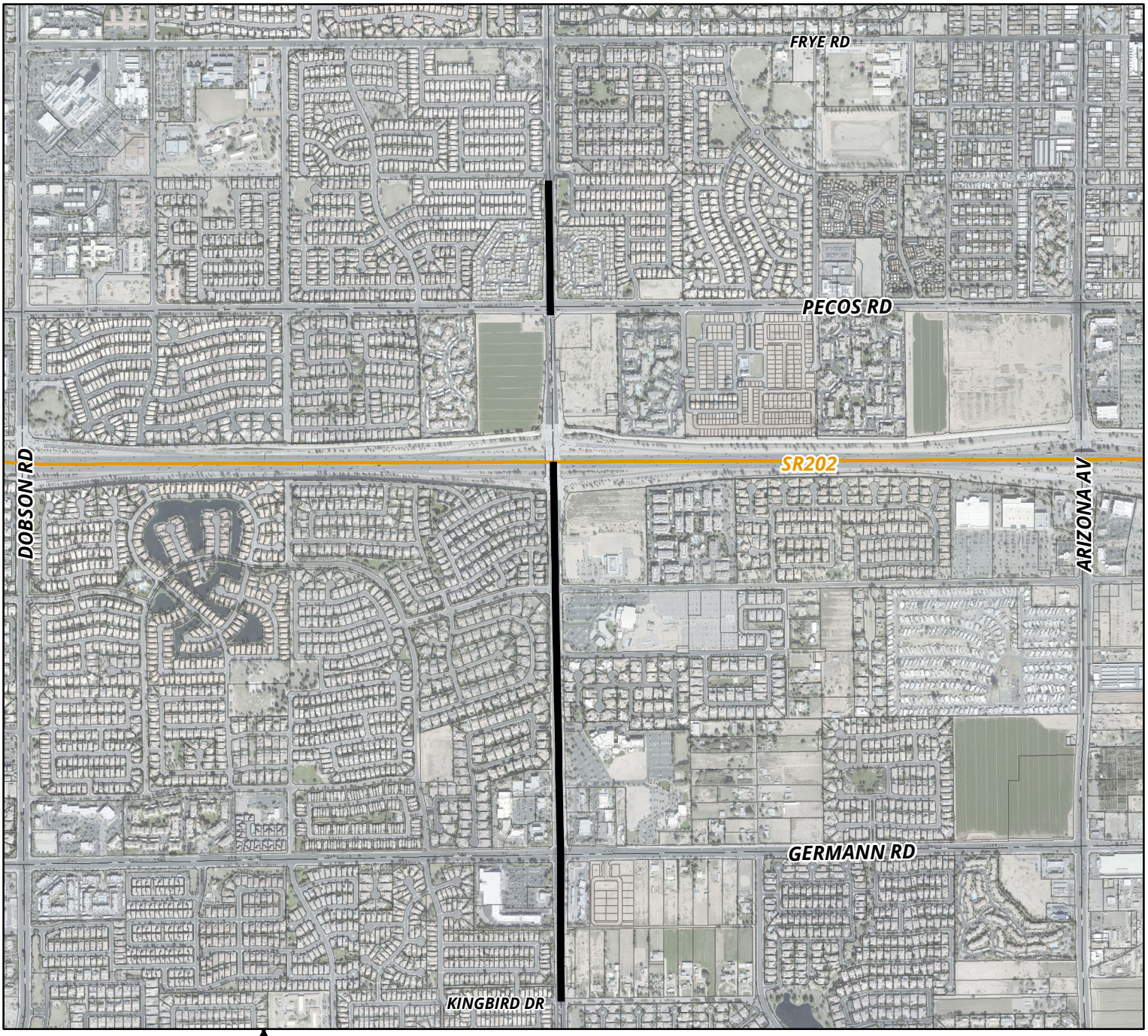
Fiscal Impact

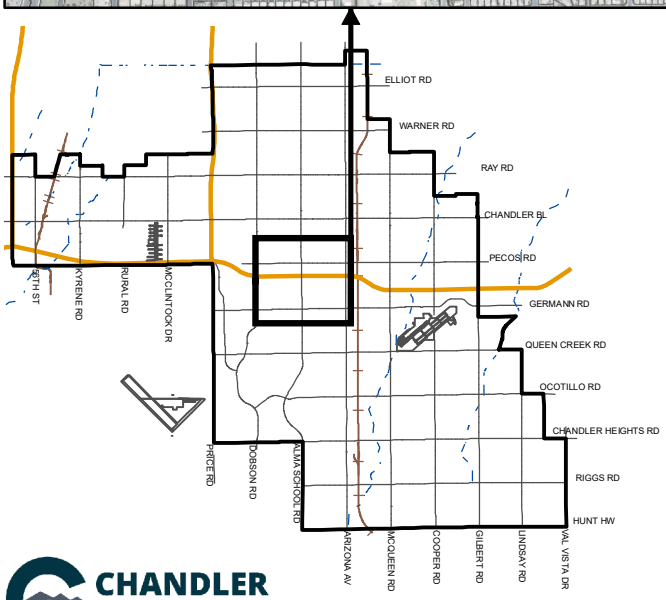
Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
411.3310.6517.6ST746	General Obligation Bond Fund	Alma School Rd (Pecos to Germann)	$1,377,204.00	Y
415.3310.6517.6ST746	Arterial Street Impact Fee Fund	Alma School Rd (Pecos to Germann)	$603,855.65	Y

Attachments

Location Map

Contract Change Order - Sunland





ALMA SCHOOL ROAD IMPROVEMENTS (PECOS ROAD TO GERMANN ROAD) PROJECT NO. ST2004.401

MEMO NO. CP21-133

PROJECT SITE

CHANDLER arizona

NTS

ChanGIS

F:\ENGINEER\GENSERV_ArcMap_Shared\Map Requests\Capital Projects\CP20-196 ALMA SCHOOL ROAD IMPROVEMENTS (LOOP 202 TO PECOS ROAD)\CP20-196.mxd 5/27/2020 MARICELAH

CITY OF CHANDLER

CHANGE ORDER NO. 2

DATE 3/26/21

Change Order not valid until signed by both the City and the Contractor. Contractor's signature indicates agreement herewith, including any adjustments in the Contract Price or Contract Time.

Project Name: **Alma School Road Improvements (Pecos Road to Germann Road)**

Project No.: **ST2004.401**

User Dept.: Public Works & Utilities NTP Date: August 17, 2020

TO: **Sunland Asphalt & Construction, Inc.** (CONTRACTOR) **1625 E Northern Ave.** (Address)

Contractor must make the following changes to this contract: (Detail scope change (Exh. A) / cost breakdown (Exh. B), if needed)

Scope of work consists of installation of raised landscape median, curbing, gutters, sidewalks, American with Disabilities Act upgrades, traffic signal upgrades, streetlights, traffic signal interconnect, storm drainage, irrigation, and wet/dry utility improvements. The project is for the improvements on Alma School Road from north of Pecos to south of Germann road. The original contract was for Construction Management at Risk services for the improvements on Alma School Road from Willis Road to Kingbird Drive only. The change order is for Construction Management at Risk services for the remaining improvements on Alma School Road. The remaining improvements include the intersection at Pecos and Alma School Roads, with the north and southbound widening of three lanes and tapered down to two lanes north of the intersection. Alma School Road to the Loop 202 Santan Freeway will be improved by private developers.

OWNER NAME & DATE APPROVAL: Andy Goh, 03/26/21

Changes result in the following revised contract amount and time:

Original contract amount:	**$4,384,000**
Current contract amount, prior to this Change Order: (incl. previous Change Orders)	**$4,384,000**
Net change resulting from this Change Order: (if over $50,000 from contract amount previously approved by Council, Council approval is required)	**$1,981,059.65**
Revised contract amount, including this Change Order:	**$6,365,059.65**
Last contract amount approved by Council:	**$4,384,000**
Change Order % of last contract amount approved by Council: (if over 10% of previous contract amount approved by Council, Council approval is required)	**45%**

Contract time or completion date prior to this Change Order: (incl. previous Change Orders)	340 Days	or	____ Date
Net change resulting from this Change Order:		**60** Days	
Revised contract time OR completion date:	400	or	____

SIGNATURE PAGE TO FOLLOW

Days | Date

THE ABOVE IS AGREED TO BY:

Sunland Asphalt & Construction, Inc.
CONTRACTOR

Signature | 4/2/21 Date

reischen@sunlandasphalt.com
Signer Email Address

For Change Orders of $50,000 or more, or 10% or more of last contract amount approved by Council:

MAYOR | Date

Approved by Council on: Date

Recommended By:

Approved as to Form
(initials):

Andrew Goh, CIP City Engineer | Date

City Attorney by:

Attest: City Clerk:

Date

E-copy: Owner / Project Mgr. / Orig.- City Clerk



SUNLAND ASPHALT

GMP - *CONFIDENTIAL*

Chandler · Arizona

Construction Manager At Risk:

Alma School Road Improvements
Pecos Road to Fairview Street
Project No. ST2004.403

GMP TABLE

CM@RISK GMP SUMMARY

Project Name: Alma School Road Improvements
Project Location: Pecos Road to Fairview Street
City of Chandler Project No.: ST 2004.403

Date: 3/19/2021

	Percentage	Amount
A. Direct Costs		
A1 Direct Cost		$1,503,814.66
A2 Approved Allowance		
	TOTAL DIRECT COSTS:	**$1,503,814.66**
B. General Conditions or Direct Costs only		$0.00
	SUBTOTAL 1 (Cost of the Work):	**$1,503,814.66**
C. CM@Risk's Fee on Cost of Work only	8.00%	**$120,305.17**
	SUBTOTAL 2:	**$1,624,119.83**
D. Bonds and Insurance Allowances		
D1 Bonds	1.00%	**$16,241.20**
D2 Insurance	0.50%	**$8,120.60**
	TOTAL BONDS & INSURANCE ALLOWANCE:	**$24,361.80**
	SUBTOTAL 3:	**$1,648,481.63**
E. Sales Tax		
E1 Sales Tax	5.07%	**$83,578.02**
E2 Tax Credits		
	TOTAL SALES TAX:	**$83,578.02**
	TOTAL GMP PROPOSAL:	**$1,732,059.65**
	ALLOWANCES:	**$249,000.00**
	TOTAL GMP PROPOSAL + ALLOWANCES:	**$1,981,059.65**

Establishment of Values:

a. Direct Costs and Allowances to be submitted with GMP Proposal.
b. General Conditions Cost (B) to be established in Baseline Cost Model.
c. CM@Risk Fee as set forth in Section 3.7.3 of this Contract

CONSTRUCTION COST SUMMARY

ALMA SCHOOL ROAD IMPROVEMENTS
PECOS ROAD TO FAIRVIEW STREET
CITY OF CHANDLER PROJECT NO: ST2004.403
SUMMARY OF DIRECT COSTS

ITEM #	DESCRIPTION	QTY	UM	UNIT PRICE	TOTAL PRICE
0.5	QUALITY CONTROL	1	LS	$19,450.00	$19,450.00
1	CONSTRUCTION SURVEYING AND LAYOUT	1	LS	$18,300.00	$18,300.00
2	EROSION CONTROL (SWPPP, INSTALLATION, MAINTENANCE, AND REMOVAL)	1	LS	$41,055.00	$41,055.00
3	MOBILIZATION/DEMOBILIZATION	1	LS	$63,479.32	$63,479.32
4	CLEARING AND GRUBBING	1	LS	$17,257.03	$17,257.03
5	REMOVAL TREE, DIAMETER > 12 IN	26	EACH	$784.02	$20,384.52
6	SUBGRADE PREPARATION	3059	SY	$46.52	$142,304.68
7	AGGREGATE BASE (12")	3059	SY	$27.92	$85,407.28
8	ASPHALTIC CONCRETE PAVEMENT (2 IN SURFACE COURSE, A-12.5 EVAC)	3059	SY	$16.25	$49,708.75
9	ASPHALTIC CONCRETE PAVEMENT (3 IN BASE COURSE, A-19 EVAC)	3059	SY	$19.97	$61,088.23
10	BITUMINOUS TACK COAT SS-1H, DILUTED	3059	SY	$2.09	$6,393.31
11	FOG SEAL/SURFACE SEAL	12787	SY	$1.28	$16,367.36
11.5	CRACK SEAL	5000	LF	$1.50	$7,500.00
12	SINGLE CURB, TYPE A, MAG DET 222	2185	LF	$26.37	$57,618.45
13	VERTICAL CURB & GUTTER, TYPE A, MAG DET 220-1	843	LF	$20.90	$17,618.70
14	CONSTRUCT CONCRETE SIDEWALK PER MAD STD DET 230	5011	SF	$7.02	$35,177.22
15	CONSTRUCT DUAL RAMP PER COC DET C-258	2	EACH	$2,822.08	$5,644.16
16	CONSTRUCT SINGLE RAMP PER COC DET C-258	2	EACH	$2,834.58	$5,669.16
17	CONSTRUCT CONCRETE BUS BAY AND SHELTER PAD PER COC DET C-230	1	EACH	$26,507.92	$26,507.92
18	CONSTRUCT CONCRETE VALLEY GUTTER PEP MAG STD DETAIL 240 (MODIFIED 3')	254	SF	$36.70	$9,321.80
19	CONSTRUCT DRAINAGE SCUPPER PER COC DET C-500. REUSE EXISTING RIP RAP AND SPLASH PAD	4	EACH	$7,919.28	$31,677.12
20	MEDIAN NOSE PER, COC DET C-225 (PAINTED YELLOW)	41	SF	$59.17	$2,425.97
21	MEDIAN PAVERS PER COC DET C-225	1504	SF	$9.11	$13,701.44
22	ADJUST MANHOLE FRAME & COVER, MAG DET 422	2	EACH	$850.00	$1,700.00
23	ADJUST VALVE BOX & COVER, MAG DET 391-1 AND COC DET C-307	3	EACH	$750.00	$2,250.00
24	CUT EXISTING WATER LINE AND INSTALL NEW VALVE & VALVE BOX PER MAG DETAILS	1	EACH	$5,345.53	$5,345.53
25	CONNECT NEW 6" DIP AT EXISTING FIRE HYDRANT	2	EACH	$757.95	$1,515.90
26	INSTALL 6" DIP	26	LF	$208.96	$5,432.96
27	INSTALL 6" DIP BENDS	2	EACH	$1,052.01	$2,104.02
28	FURNISH & INSTALL NEW FIRE HYDRANT PER COC DET C-303	3	EACH	$9,136.36	$27,409.08
29	2" MILL EXISTING ASPHALTIC CONCRETE PAVEMENT	448	SY	$17.25	$7,728.00
30	REMOVE EXISTING CONCRETE CURB	3507	LF	$8.05	$28,231.35
31	REMOVE EXISTING CONCRETE SIDEWALK AND CONCRETE RAMPS	6713	SF	$2.64	$17,722.32
32	REMOVE LIGHT POLE FOUNDATIONS AND SALVAGE STREETLIGHT POLES/EQUIPMENT	4	EACH	$1,660.31	$6,641.24
33	REMOVE AND SALVAGE EXISTING FIRE HYDRANT	3	EACH	$1,291.51	$3,874.53
34	REMOVE EXISTING CONCRETE DRAINAGE SCUPPER	4	EACH	$2,799.58	$11,198.32
35	REMOVE EXISTING BUS BAY AND SHELTER PAD CONCRETE	1206	SF	$7.56	$9,117.36
36	REMOVE EXISTING CONCRETE VALLEY GUTTER	391	SF	$7.35	$2,873.85
37	REMOVE AND REINSTALL SIGN	1	EACH	$350.00	$350.00
38	UNIFORMED OFF-DUTY LAW ENFORCEMENT OFFICER	240	HR	$75.00	$18,000.00
39	LANDSCAPE ESTABLISHMENT (90 DAYS)	1	LS	$6,000.00	$6,000.00
40	SHRUB – 5 GAL, GROUNDCOVER ACCENT (BUSH MORNING GLORY)	174	EACH	$30.00	$5,220.00
41	TREE – 48 IN BOX, 3 IN CAL MIN	16	EACH	$1,450.00	$23,200.00
42	DECOMPOSED GRANITE, 1 ¼ IN SCREENED, 2.5" THICK (MATCH EXISTING COLOR)	7800	SF	$1.40	$10,920.00
43	4 IN IRRIGATION PIPE SLEEVE (SCH. 40 PVC)	600	LF	$57.00	$34,200.00

ALMA SCHOOL ROAD IMPROVEMENTS
PECOS ROAD TO FAIRVIEW STREET
CITY OF CHANDLER PROJECT NO: ST2004.403
SUMMARY OF DIRECT COSTS

ITEM #	DESCRIPTION	QTY	UM	UNIT PRICE	TOTAL PRICE
44	PVC IRRIGATION PIPE ¾ IN (SCH.40 PVC)	1400	LF	$3.00	$4,200.00
45	PVC IRRIGATION PIPE 1 IN (SCH. 40 PVC)	450	LF	$3.00	$1,350.00
46	PVC IRRIGATION PIPE 1.5" IN (SCH. 40 PVC)	100	LF	$10.00	$1,000.00
47	PRESSURE REGULATOR (SENNIGER 30 PSI)	2	EACH	$300.00	$600.00
48	CONTROLLER, AUTOMATIC (6 STA) (HUNTER XCH BATTERY)	1	EACH	$6,000.00	$6,000.00
49	BALL VALVE 1.5” BRASS	2	EACH	$500.00	$1,000.00
50	1 IN REMOTE CONTROL VALVE, ELECTRIC (HUNTER ICV SERIES)	2	EACH	$500.00	$1,000.00
51	FLUSH CAP ASSEMBLY (1/2”)	8	EACH	$50.00	$400.00
52	SINGLE OUTLET EMITTER ASSEMBLY	174	EACH	$12.00	$2,088.00
53	MULTI OUTLET EMITTER ASSEMBLY (6 PORT)	32	EACH	$60.00	$1,920.00
54	REMOVE EXISTING PAVEMENT MARKINGS	1	LS	$4,500.00	$4,500.00
55	4 IN WHITE TRAFFIC PAINT STRIPE	10785	LF	$0.80	$8,628.00
56	4 IN WHITE THERMOPLASTIC TRAFFIC STRIPE	3387	LF	$0.64	$2,167.68
57	4 IN YELLOW TRAFFIC PAINT STRIPE	4305	LF	$0.90	$3,874.50
58	PREFORMED SYMBOL BIKE LANE MARKING SET	6	EACH	$245.00	$1,470.00
59	THERMOPLASTIC/PREFORMED SYMBOL LEFT TURN ARROW	4	EACH	$350.00	$1,400.00
60	THERMOPLASTIC/PREFORMED SYMBOL RIGHT TURN ARROW	2	EACH	$195.00	$390.00
61	PAVEMENT MARKER, RAISED TYPE G	150	EACH	$3.50	$525.00
62	PERFORATED SIGN POST	14	LF	$25.00	$350.00
63	PERFORATED SIGN POST FOUNDATION (COMPLETE)	2	EACH	$175.00	$350.00
64	REPLACE EXISTING NO.9 PULL BOX LID WITH TORSION ASSIST SPRING LID.	2	EACH	$3,169.00	$6,338.00
65	APS LIGHTING PULL BOX (COTRACTOR SUPPLIED AND INSTALLED) (NO. 3 ½) (SL-14A & SL-14C)	1	EACH	$535.00	$535.00
66	SCH. 40 PVC ELECTRICAL CONDUIT, 1 IN (BETWEEN PULL BOX & STREET LIGHT POLE)	45	LF	$32.50	$1,462.50
67	SCH. 40 PVC ELECTRICAL CONDUIT, 2.5" IN (BETWEEN STREET LIGHT POLES)	275	LF	$25.00	$6,875.00
68	REMOVE AND RELOCATE EXISTING VIDEO DETECTION CAMERA AND LUMINAIRE INSTALL NEW VIDEO DETECTION CAMERA AND EXISTING LUMINAIRE ON NEW MAST ARM	2	EACH	$14,875.00	$29,750.00
69	REMOVE EXISTING VIDEO DETECTION CAMERA AND INSTALL NEW VIDEO DETECTION CAMERA AND VIDEO DETECTION CABLES	2	EACH	$14,525.00	$29,050.00
70	TRAFFIC SIGNAL (RELOCATE EXISTING SIGNAL HEAD)	8	EACH	$215.00	$1,720.00
71	INSTALL NEW PEDESTRIAN PUSH BUTTON AND PEDISTAL	2	EACH	$2,082.00	$4,164.00
72	REMOVE AND RELOCATE EXISTING PEDESTRIAN SIGNAL HEAD, PEDESTRIAN PUSH BUTTON, DETECTOR,	2	EACH	$1,815.00	$3,630.00
73	SCHEDULE 40 2" CONDUIT FOR SIGNAL IMPROVEMENTS	100	LF	$26.00	$2,600.00
74	SCHEDULE 40 4" CONDUIT FOR SIGNAL IMPROVEMENTS	320	LF	$88.00	$28,160.00
75	INSTALL NEW NO. 7 PULL BOX FOR SIGNAL	1	EACH	$898.00	$898.00
76	FURNISH AND INSTALL NEW 55' SIGNAL MAST ARM	1	EACH	$8,315.00	$8,315.00
77	RELOCATE EXISTING SIGNAL CABLE FOR MAST ARM AND PEDESTRIAN PEDISTALS INSIDE NEW 4" CONDUIT. RE-UTILIZE EXISTING NO. 7 PULL BOX AS IDENTIFIED IN THE PLANS	140	LF	$8.50	$1,190.00
78	INSTALL NEW CCTV AXIS P5635-E MK II PAN-TILT -ZOOM (PTZ) CAMERA ON EXISTING LUMINAIRE POLE	1	EACH	$3,488.00	$3,488.00
79	DIRECTIONAL DRILL (CONDUITS RUNS FOR SIGNALS)	0	LF	$0.00	$0.00
80	SIGNAL CABLE (#14 CONDUCTOR 20-1 IMSA SIGNAL CABLES)	1500	LF	$5.60	$8,400.00
81	FURNISH & INSTALL NEW SIGNAL POLE FOUNDATION, RELOCATE EXISTING SIGNAL POLE, MAST ARM, & LUMINAIRE	2	EACH	$4,600.00	$9,200.00

ALMA SCHOOL ROAD IMPROVEMENTS
PECOS ROAD TO FAIRVIEW STREET
CITY OF CHANDLER PROJECT NO: ST2004.403
SUMMARY OF DIRECT COSTS

ITEM #	DESCRIPTION	QTY	UM	UNIT PRICE	TOTAL PRICE
82	FURNISH & INSTALL STREET LIGHT POLE AND FOUNDATION PER COC UDM STD DTL SL1 AND SECTION 2.2 USE EXISTING LUMINAIRE	4	EACH	$4,165.00	$16,660.00
83	RELOCATE EXISTING STREET LIGHT POLE, MAST ARM, AND LUMINARE TO NEW FOUNDATION PER COC UDM STD DTL SL1	4	EACH	$2,000.00	$8,000.00
84	FURNISH & INSTALL TYPE II 133 WATT LED COOPER LIGHTING MODEL NVN-AE-03-E-U-SL2-10K-4-AP	6	EACH	$500.00	$3,000.00
85	SCHEDULE 40 2" QUAD DUCT WITH 12 AWG TRACER WIRE AND PULL TAPE. CONDUIT COLORS, 1-BLACK, 3-GRAY	1016	LF	$46.00	$46,736.00
86	INSTALL NEW 144 SMFO IN BLACK CONDUIT. INSTALL 12 AWG TRACER WIRE AND MULE TAPE IN ALL CONDUITS.	1016	LF	$7.95	$8,077.20
87	INSTALL NEW 144 SMFO AND 12 AWG TRACER WIRE AND MULE TAPE IN EXISTING CONDUIT	2427	LF	$7.95	$19,294.65
87.5	INSTALL NEW 144 SMFO AND 12 AWG TRACER WIRE AND MULE TAPE IN EXISTING CONDUIT (WILLIS TO GERMANN)	2775	LF	$7.95	$22,061.25
88	FURNISH & INSTALL SPLICE ENCLOSURE	2	EACH	$1,610.00	$3,220.00
89	SCHEDULE 40 3" CONDUIT FOR ITS IMPROVEMENTS	38	LF	$160.00	$6,080.00
90	DIRECTIONAL DRILL (ITS CONDUIT RUNS)	0	LF	$0.00	$0.00
91	12 PORT GATOR PATCH CABLE ASSEMBLY	3	EACH	$1,635.00	$4,905.00
92	REMOVE EXISTING TWISTED PAIR, PROTECT IN PLACE EXISTING CONDUIT, CONDUCTORS AND FIBER OPTIC CABLE	908	LF	$0.60	$544.80
93	INSTALL ETHERWAN EX73931-OVB WITH FOUR EX-1250TSP-MB5L-A SFP AND EX41-136046 POWER SUPPLY. SALVAGE EXISTING ETHERNET SWITCH	2	EACH	$4,647.00	$9,294.00
94	ALLOWANCE: ROADWAY WORK	1	AL	$0.00	$0.00
95	ALLOWANCE: CONCRETE WORK	1	AL	$0.00	$0.00
96	ALLOWANCE: LANDSCAPING	1	AL	$0.00	$0.00
97	ALLOWANCE: TRAFFIC SIGNAL AND COMMUNICATIONS FACILITIES	1	AL	$0.00	$0.00
98	ALLOWANCE: SRP ELECTRICAL	1	AL	$0.00	$0.00
99	ALLOWANCE: APS ELECTRICAL	1	AL	$0.00	$0.00
100	ALLOWANCE: UTILITIES	1	AL	$0.00	$0.00
101	ALLOWANCE: REMOVALS	1	AL	$0.00	$0.00
102	ALLOWANCE: UNSUITIBLE SOILD	1	AL	$0.00	$0.00
103	ALLOWANCE: (UNFORSEEN CONDITIONS)	1	AL	$0.00	$0.00
104	TRAFFIC CONTROL	1	LS	$181,861.20	$181,861.20
	SUBTOTAL DIRECT COSTS				**$1,503,814.66**

ALLOWANCES

ITEM #	DESCRIPTION	QTY	UM	UNIT PRICE	TOTAL PRICE
	OWNERS ALLOWANCE	1	AL	$150,000.00	$150,000.00
	ALLOWANCE: UNSUITABLE SUBGRADE	1	AL	$56,000.00	$56,000.00
	ALLOWANCE: TRAFFIC SIGNALS	1	AL	$43,000.00	$43,000.00
				TOTAL ALLOWANCES	**$249,000.00**

SUNLAND ASPHALT
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COST DETAIL

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SUNLAND ASPHALT

1625 E. Northern Avenue
Phoenix, AZ 85020
(p) 602.323.2800 (f) 602.323.2828

Cost Detail With Categories

Project Name:	Alma School Pecos Rd Improvements (CMAR)	**Customer:**	City of Chandler
Job Number:		**Billing Address:**	175 S. Arizona Ave., 3rd floor
Bid As:			Chandler, AZ 85225
Estimator:		**Phone:**	
Project Address:		**Contact:**	
Completion Date:			

Pay Items

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost
0.5 - 0.5 - QUALITY CONTROL (ATC Group)	**1.00**	**LS**	**$19,450.00**	**$19,450.00**
1 - 1 - CONSTRUCTION SURVEYING AND LAYOUT (EPS Group)	**1.00**	**LS**	**$18,300.00**	**$18,300.00**
2 - 2 - EROSION CONTROL (SWPPP, INSTALLATION, MAINTENANCE, AND REMOVAL)	**1.00**	**LS**	**$41,055.00**	**$41,055.00**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$0.00	$29,750.00	$2,500.00	$8,805.00	$0.00	$0.00	$0.00
Total:	$0.00	$29,750.00	$2,500.00	$8,805.00	$0.00	$0.00	$0.00

EROSION CONTROL (SWPPP PREPERATION, INSTALLATION, MAINTENANCE, AND REMOVAL)	1.00	LS	$41,055.00	$41,055.00
AZPDES PERMIT	1.00	LS	$1,350.00	$1,350.00
DUST PERMIT	1.00	LS	$3,855.00	$3,855.00
NOI PERMIT	1.00	LS	$350.00	$350.00
INLET PROTECTION	4.00	EACH	$250.00	$1,000.00
WATTLES	750.00	LF	$3.00	$2,250.00
SWEEPING	1.00	LS	$29,750.00	$29,750.00
SWEEPING (0.03 LS/DY, 35.00 DY)	1.00	LS	$29,750.00	$29,750.00
PICK-UP BROOM	350.00	HR	$85.00	$29,750.00
CONCRETE WASHOUT	1.00	LS	$2,500.00	$2,500.00
3 - 3 - MOBILIZATION/DEMOBILIZATION	**1.00**	**LS**	**$63,479.32**	**$63,479.32**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$5,788.48	$10,140.84	$2,000.00	$45,550.00	$0.00	$0.00	$0.00
Total:	$5,788.48	$10,140.84	$2,000.00	$45,550.00	$0.00	$0.00	$0.00

MOBILIZATION/DEMOBILIZATION	1.00	LS	$63,479.32	$63,479.32
SUNLAND MOBILIZATION	1.00	LS	$10,452.80	$10,452.80
TRANSPORT (0.10 LS/DY, 10.00 DY)	1.00	LS	$10,452.80	$10,452.80
TRANSPORT	80.00	HR	$85.00	$6,800.00
OPERATOR	80.00	HR	$45.66	$3,652.80
ELECTRICAL MOBE (Roadway Electric LLC.)	1.00	LS	$20,000.00	$20,000.00
STRIPING MOBES (Pavement Marking Inc.)	3.00	EACH	$950.00	$2,850.00
LANDSCAPE MOBE (CD Development)	1.00	EACH	$6,000.00	$6,000.00

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost
(Item 3 - 3 - MOBILIZATION/DEMOBILIZATION continued)				
JOB CLEANUP	1.00	LS	$7,476.52	$7,476.52
JOB CLEANUP	1.00	LS	$4,738.72	$4,738.72
JOB CLEANUP (0.50 LS/DY, 2.00 DY)	1.00	LS	$4,738.72	$4,738.72
950H LOADER	16.00	HR	$101.58	$1,625.28
OPERATOR	16.00	HR	$45.66	$730.56
3900 WATERTRUCK	16.00	HR	$61.11	$977.76
OPERATOR	16.00	HR	$45.66	$730.56
LABOR	16.00	HR	$42.16	$674.56
HAUL DISPOSE	4.00	LOAD	$684.45	$2,737.80
SUPER 16	8.00	HR	$92.23	$737.80
DUMP FEES (TRASH) (A Estimate)	4.00	LOAD	$500.00	$2,000.00
OBLIT MOBE (Pavement Marking Inc.)	2.00	EACH	$1,100.00	$2,200.00
AC PAVING MOBE 3" (Public Works)	2.00	EACH	$2,500.00	$5,000.00
AC PAVING MOBE 1/2" (Public Works)	2.00	EACH	$2,500.00	$5,000.00
MILLING MOBES (Public Works)	3.00	EACH	$1,500.00	$4,500.00
4 - 4 - CLEARING AND GRUBBING	**1.00**	**LS**	**$17,257.03**	**$17,257.03**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$6,499.20	$6,757.83	$4,000.00	$0.00	$0.00	$0.00	$0.00
Total:	$6,499.20	$6,757.83	$4,000.00	$0.00	$0.00	$0.00	$0.00

CLEAR & GRUB	1.00	LS	$17,257.03	$17,257.03
CLEAR & GRUB	1.00	LS	$11,781.43	$11,781.43
CLEAR & GRUB (0.33 LS/DY, 3.00 DY)	1.00	LS	$11,781.43	$11,781.43
F-250 PICKUP	24.00	HR	$18.16	$435.91
GRADE FOREMAN	24.00	HR	$49.50	$1,188.00
LABOR [2]	24.00	HR	$42.16	$2,023.68
3900 WATERTRUCK	24.00	HR	$61.11	$1,466.64
OPERATOR	24.00	HR	$45.66	$1,095.84
950H LOADER	24.00	HR	$101.58	$2,437.92
OPERATOR	24.00	HR	$45.66	$1,095.84
414E SKIP LOADER	24.00	HR	$39.24	$941.76
OPERATOR	24.00	HR	$45.66	$1,095.84
HAUL DISPOSE	8.00	LOAD	$684.45	$5,475.60
SUPER 16	16.00	HR	$92.23	$1,475.60
DUMP FEES (TRASH) (A Estimate)	8.00	LOAD	$500.00	$4,000.00
5 - 5 - REMOVAL TREE, DIAMETER > 12 IN	**26.00**	**EACH**	**$784.02**	**$20,384.63**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$52.82	$42.75	$38.46	$650.00	$0.00	$0.00	$0.00
Total:	$1,373.20	$1,111.43	$1,000.00	$16,900.00	$0.00	$0.00	$0.00

REMOVAL TREE, DIAMETER > 12 IN	26.00	EACH	$784.02	$20,384.63
REMOVAL TREE, DIAMETER > 12 IN (Jason's Tree Service)	26.00	EACH	$650.00	$16,900.00
REMOVE STUMPS	26.00	EACH	$81.37	$2,115.73
REMOVE STRUMPS	26.00	EACH	$81.37	$2,115.73
AAA CREW (26.00 EACH/DY, 1.00 DY)	26.00	EACH	$81.37	$2,115.73
308D EXCAVATOR	10.00	HR	$56.09	$560.90
OPERATOR 3	10.00	HR	$45.66	$456.60
GRADE FOREMAN	10.00	HR	$49.50	$495.00
F-250 PICKUP	10.00	HR	$18.16	$181.63

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost
(Item 5 - 5 - REMOVAL TREE, DIAMETER > 12 IN continued)				
LABOR 2	10.00	HR	$42.16	$421.60
HAUL DISPOSE	2.00	LOAD	$684.45	$1,368.90
SUPER 16	4.00	HR	$92.23	$368.90
DUMP FEES (TRASH) (A Estimate)	2.00	LOAD	$500.00	$1,000.00
6 - 6 - SUBGRADE PREPARATION	**3,059.00**	**SY**	**$46.52**	**$142,290.28**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$19.93	$15.40	$3.19	$8.00	$0.00	$0.00	$0.00
Total:	$60,968.60	$47,093.76	$9,750.00	$24,477.92	$0.00	$0.00	$0.00

SUBGRADE PREP	3,059.00	SY	$46.52	$142,290.28
ROADWAY EXCAVATION	2,585.00	CY	$24.25	$62,698.12
MASS EX TO CURB GRADE	2,000.00	CY	$7.02	$14,033.71
MASS EX TO CURB GRADE (1,000.00 CY/DY, 2.00 DY)	2,000.00	CY	$7.02	$14,033.71
F-250 PICKUP	20.00	HR	$18.16	$363.26
GRADE FOREMAN	20.00	HR	$49.50	$990.00
336 EXCAVATOR	20.00	HR	$173.57	$3,471.45
OPERATOR	20.00	HR	$45.66	$913.20
140 BLADE	20.00	HR	$124.54	$2,490.80
OPERATOR	20.00	HR	$45.66	$913.20
3900 WATERTRUCK	20.00	HR	$61.11	$1,222.20
OPERATOR	20.00	HR	$45.66	$913.20
GRADE CHECKER	20.00	HR	$48.50	$970.00
LABOR [2]	20.00	HR	$42.16	$1,686.40
GPS ROVER/BASE	20.00	HR	$5.00	$100.00
SLIVER EX	585.00	CY	$40.94	$23,947.34
SLIVER EX 5" (97.50 CY/DY, 6.00 DY)	585.00	CY	$40.94	$23,947.34
F-250 PICKUP	48.00	HR	$18.16	$871.82
GRADE FOREMAN	48.00	HR	$49.50	$2,376.00
308D EXCAVATOR	48.00	HR	$56.09	$2,692.32
OPERATOR	48.00	HR	$45.66	$2,191.68
3900 WATERTRUCK	48.00	HR	$61.11	$2,933.28
OPERATOR	48.00	HR	$45.66	$2,191.68
GRADE CHECKER	48.00	HR	$48.50	$2,328.00
LABOR [2]	48.00	HR	$42.16	$4,047.36
414E SKIP LOADER	48.00	HR	$39.24	$1,883.52
OPERATOR	48.00	HR	$45.66	$2,191.68
GPS ROVER/BASE	48.00	HR	$5.00	$240.00
HAUL EX TO STKPL	631.00	CY	$6.72	$4,239.15
HAUL EX TO STKPL (631.00 CY/DY, 1.00 DY)	631.00	CY	$6.72	$4,239.15
SUPER 16 [3]	10.00	HR	$92.23	$2,766.75
950H LOADER	10.00	HR	$101.58	$1,015.80
OPERATOR	10.00	HR	$45.66	$456.60
ROADWAY EXPORT (ADRA Contraction Inc.)	1,954.00	CY	$10.48	$20,477.92
SCARIFY AND RECOMPACT	3,059.00	SY	$8.44	$25,804.35
SCRAIFY MAINLINE	3,059.00	SY	$8.44	$25,804.35
SCARIFY & RECOMPACT (509.83 SY/DY, 6.00 DY)	3,059.00	SY	$8.44	$25,804.35
F-250 PICKUP	60.00	HR	$18.16	$1,089.77
GRADE FOREMAN	60.00	HR	$49.50	$2,970.00

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost
(Item 6 - 6 - SUBGRADE PREPARATION continued)				
3900 WATERTRUCK	60.00	HR	$61.11	$3,666.60
OPERATOR	60.00	HR	$45.66	$2,739.60
PNUEMATIC ROLLER	60.00	HR	$29.42	$1,765.18
OPERATOR	60.00	HR	$45.66	$2,739.60
GRADE CHECKER	60.00	HR	$48.50	$2,910.00
414E SKIP LOADER	60.00	HR	$39.24	$2,354.40
LABOR	60.00	HR	$42.16	$2,529.60
OPERATOR	60.00	HR	$45.66	$2,739.60
GPS ROVER/BASE	60.00	HR	$5.00	$300.00
FINISH SUBGRADE	3,059.00	SY	$11.25	$34,405.80
FINISH SUBGRADE	3,059.00	SY	$11.25	$34,405.80
FINISH MAINLINE	3,059.00	SY	$11.25	$34,405.80
FINISH MAINLINE (382.38 SY/DY, 8.00 DY)	3,059.00	SY	$11.25	$34,405.80
F-250 PICKUP	80.00	HR	$18.16	$1,453.03
GRADE FOREMAN	80.00	HR	$49.50	$3,960.00
3900 WATERTRUCK	80.00	HR	$61.11	$4,888.80
OPERATOR	80.00	HR	$45.66	$3,652.80
PNUEMATIC ROLLER	80.00	HR	$29.42	$2,353.57
OPERATOR	80.00	HR	$45.66	$3,652.80
GRADE CHECKER	80.00	HR	$48.50	$3,880.00
414E SKIP LOADER	80.00	HR	$39.24	$3,139.20
LABOR	80.00	HR	$42.16	$3,372.80
OPERATOR	80.00	HR	$45.66	$3,652.80
GPS ROVER/BASE	80.00	HR	$5.00	$400.00
POTHOLING	20.00	HR	$200.00	$4,000.00
JOB WATER	1,500.00	MGAL	$10.25	$15,382.00
WATER BUY	1,500.00	MGAL	$10.25	$15,382.00
WATER MATERIAL	1,500.00	MGAL	$10.25	$15,382.00
WATER	1,500.00	MGAL	$6.50	$9,750.00
KLEIN TANK	704.00	HR	$8.00	$5,632.00
7 - 7 - AGGREGATE BASE (12")	**3,059.00**	**SY**	**$27.92**	**$85,409.89**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$12.41	$7.22	$8.30	$0.00	$0.00	$0.00	$0.00
Total:	$37,948.16	$22,086.73	$25,375.00	$0.00	$0.00	$0.00	$0.00

AGGREGATE BASE (12")	3,059.00	SY	$27.92	$85,409.89
ABC	1,896.00	TON	$45.05	$85,409.89
BUY ABC CL 2	1,896.00	TON	$13.38	$25,375.00
MAG SPEC ABC (RDWY) (A Estimate)	2,030.00	TON	$12.50	$25,375.00
PROCESS ABC	1,896.00	TON	$17.26	$32,734.24
PROCESS ABC MAINLINE	1,896.00	TON	$17.26	$32,734.24
PROCESS ABC MAINLINE (237.00 TON/DY, 8.00 DY)	1,896.00	TON	$17.26	$32,734.24
F-250 PICKUP	64.00	HR	$18.16	$1,162.43
GRADE FOREMAN	64.00	HR	$49.50	$3,168.00
PNUEMATIC ROLLER	64.00	HR	$29.42	$1,882.86
OPERATOR	64.00	HR	$45.66	$2,922.24
414E SKIP LOADER [2]	64.00	HR	$39.24	$5,022.72
OPERATOR [2]	64.00	HR	$45.66	$5,844.48

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost
(Item 7 - 7 - AGGREGATE BASE (12") continued)				
3900 WATERTRUCK	64.00	HR	$61.11	$3,911.04
GRADE CHECKER	64.00	HR	$48.50	$3,104.00
LABOR	64.00	HR	$42.16	$2,698.24
LABOR	64.00	HR	$42.16	$2,698.24
GPS ROVER/BASE	64.00	HR	$5.00	$320.00
FINISH ABC	3,059.00	SY	$8.92	$27,300.64
FINISH ABC MAINLINE	3,059.00	SY	$8.92	$27,300.64
FINISH ABC MAINLINE (382.38 SY/DY, 8.00 DY)	3,059.00	SY	$8.92	$27,300.64
F-250 PICKUP	64.00	HR	$18.16	$1,162.43
GRADE FOREMAN	64.00	HR	$49.50	$3,168.00
PNUEMATIC ROLLER	64.00	HR	$29.42	$1,882.86
OPERATOR	64.00	HR	$45.66	$2,922.24
414E SKIP LOADER	64.00	HR	$39.24	$2,511.36
OPERATOR	64.00	HR	$45.66	$2,922.24
3900 WATERTRUCK	64.00	HR	$61.11	$3,911.04
GRADE CHECKER	64.00	HR	$48.50	$3,104.00
LABOR	64.00	HR	$42.16	$2,698.24
LABOR	64.00	HR	$42.16	$2,698.24
GPS ROVER/BASE	64.00	HR	$5.00	$320.00
8 - 8 - ASPHALTIC CONCRETE PAVEMENT (2 IN SURFACE COURSE, A-12.5 EVAC)	**3,059.00**	**SY**	**$16.25**	**$49,709.84**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$1.17	$0.70	$8.10	$6.28	$0.00	$0.00	$0.00
Total:	$3,586.24	$2,133.60	$24,790.00	$19,200.00	$0.00	$0.00	$0.00

ASPHALTIC CONCRETE PAVEMENT (2 IN SURFACE COURSE, A-12.5 EVAC)	3,059.00	SY	$16.25	$49,709.84
BUY MATERIAL	344.00	TON	$72.06	$24,790.00
ASPHALT CONCRETE PAVEMENT A 12.5(EVAC) (A Estimate)	370.00	TON	$67.00	$24,790.00
PAVING 1/2" ML (Public Works)	16.00	HR	$1,200.00	$19,200.00
AC PAVING SUPPORT A-12.5	1.00	LS	$5,719.84	$5,719.84
PAVING SUPPORT CREW (0.50 LS/DY, 2.00 DY)	1.00	LS	$5,719.84	$5,719.84
414E SKIP LOADER	16.00	HR	$39.24	$627.84
OPERATOR	16.00	HR	$45.66	$730.56
3900 WATERTRUCK	16.00	HR	$61.11	$977.76
OPERATOR	16.00	HR	$45.66	$730.56
LABOR [2]	16.00	HR	$42.16	$1,349.12
MECHANIC TRUCK	16.00	HR	$33.00	$528.00
MECHANIC	16.00	HR	$48.50	$776.00
9 - 9 - ASPHALTIC CONCRETE PAVEMENT (3 IN BASE COURSE, A-19 EVAC)	**3,059.00**	**SY**	**$19.97**	**$61,099.84**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$1.17	$0.70	$11.83	$6.28	$0.00	$0.00	$0.00
Total:	$3,586.24	$2,133.60	$36,180.00	$19,200.00	$0.00	$0.00	$0.00

ASPHALTIC CONCRETE PAVEMENT (3 IN BASE COURSE, A-19 EVAC)	3,059.00	SY	$19.97	$61,099.84
BUY MATERIAL	516.00	TON	$70.12	$36,180.00
ASPHALT CONCRETE (A-19 EVAC) (A Estimate)	540.00	TON	$67.00	$36,180.00
PAVING 3" (Public Works)	16.00	HR	$1,200.00	$19,200.00

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost
(Item 9 - 9 - ASPHALTIC CONCRETE PAVEMENT (3 IN BASE COURSE, A-19 EVAC) continued)				
AC PAVING SUPPORT A-19	1.00	LS	$5,719.84	$5,719.84
PAVING SUPPORT CREW (0.50 LS/DY, 2.00 DY)	1.00	LS	$5,719.84	$5,719.84
414E SKIP LOADER	16.00	HR	$39.24	$627.84
OPERATOR	16.00	HR	$45.66	$730.56
3900 WATERTRUCK	16.00	HR	$61.11	$977.76
OPERATOR	16.00	HR	$45.66	$730.56
LABOR [2]	16.00	HR	$42.16	$1,349.12
MECHANIC TRUCK	16.00	HR	$33.00	$528.00
MECHANIC	16.00	HR	$48.50	$776.00
10 - 10 - BITUMINOUS TACK COAT SS-1H, DILUTED	**3,059.00**	**SY**	**$2.09**	**$6,400.00**
Unit: Labor $0.00 Equipment $0.00 Material $0.00 Subcontracted $2.09 Trucking $0.00 Miscellaneous $0.00 Plug $0.00				
Total: Labor $0.00 Equipment $0.00 Material $0.00 Subcontracted $6,400.00 Trucking $0.00 Miscellaneous $0.00 Plug $0.00				
BITUMINOUS TACK COAT SS-1h, DILUTED	6.00	TON	$1,066.67	$6,400.00
Bituminous Tack Coat SS-1h, Diluted (A Estimate)	6.00	TON	$400.00	$2,400.00
APPLY TACK (A Estimate)	16.00	HR	$250.00	$4,000.00
11 - 11 - FOG SEAL/SURFACE SEAL	**12,787.00**	**SY**	**$1.28**	**$16,395.90**
Unit: Labor $0.17 Equipment $0.11 Material $0.00 Subcontracted $1.00 Trucking $0.00 Miscellaneous $0.00 Plug $0.00				
Total: Labor $2,213.00 Equipment $1,395.90 Material $0.00 Subcontracted $12,787.00 Trucking $0.00 Miscellaneous $0.00 Plug $0.00				
FOG SEAL	12,787.00	SY	$1.28	$16,395.90
FOG SEAL (A Estimate)	12,787.00	SY	$1.00	$12,787.00
FOG SEAL SUPPORT	1.00	LS	$3,608.90	$3,608.90
FOG SEAL SUPPORT (0.50 LS/DY, 2.00 DY)	1.00	LS	$3,608.90	$3,608.90
414E SKIP LOADER	20.00	HR	$39.24	$784.80
OPERATOR	20.00	HR	$45.66	$913.20
3900 WATERTRUCK [0.5]	20.00	HR	$61.11	$611.10
OPERATOR [0.5]	20.00	HR	$45.66	$456.60
LABOR	20.00	HR	$42.16	$843.20
11.5 - 11.5 - CRACK SEAL (Public Works)	**5,000.00**	**LF**	**$1.50**	**$7,500.00**
12 - 12 - SINGLE CURB, TYPE A, MAG DET 222	**2,185.00**	**LF**	**$26.37**	**$57,621.99**
Unit: Labor $12.21 Equipment $10.10 Material $4.06 Subcontracted $0.00 Trucking $0.00 Miscellaneous $0.00 Plug $0.00				
Total: Labor $26,673.68 Equipment $22,068.31 Material $8,880.00 Subcontracted $0.00 Trucking $0.00 Miscellaneous $0.00 Plug $0.00				
SINGLE CURB, TYPE A, MAG DET 222	2,185.00	LF	$26.37	$57,621.99
EX/FNGD CURB 222 TY A	2,185.00	LF	$5.30	$11,589.00
FINE GRADE CURB (1,092.50 LF/DY, 2.00 DY)	2,185.00	LF	$5.30	$11,589.00
GRADE CHECKER	20.00	HR	$48.50	$970.00
140 BLADE	20.00	HR	$124.54	$2,490.80
OPERATOR	20.00	HR	$45.66	$913.20
414E SKIP LOADER	20.00	HR	$39.24	$784.80
OPERATOR	20.00	HR	$45.66	$913.20
3900 WATERTRUCK	20.00	HR	$61.11	$1,222.20
OPERATOR	20.00	HR	$45.66	$913.20
613 SCRAPER	20.00	HR	$118.42	$2,368.40
OPERATOR	20.00	HR	$45.66	$913.20
GPS ROVER/BASE	20.00	HR	$5.00	$100.00

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost
(Item 12 - 12 - SINGLE CURB, TYPE A, MAG DET 222 continued)				
LOAD STK PILE TO MEDIAN	631.00	CY	$7.51	$4,738.72
LOAD STK PILE TO MEDIAN (315.50 CY/DY, 2.00 DY)	631.00	CY	$7.51	$4,738.72
950H LOADER	16.00	HR	$101.58	$1,625.28
OPERATOR	16.00	HR	$45.66	$730.56
3900 WATERTRUCK	16.00	HR	$61.11	$977.76
OPERATOR	16.00	HR	$45.66	$730.56
LABOR	16.00	HR	$42.16	$674.56
BACKFILL MEDIAN	631.00	CY	$12.19	$7,691.41
BACKFILL MEDIAN CREW (315.50 CY/DY, 2.00 DY)	631.00	CY	$12.19	$7,691.41
F-250 PICKUP	16.00	HR	$18.16	$290.61
GRADE FOREMAN	16.00	HR	$49.50	$792.00
414E SKIP LOADER [2]	16.00	HR	$39.24	$1,255.68
OPERATOR	16.00	HR	$45.66	$730.56
3900 WATERTRUCK	16.00	HR	$61.11	$977.76
OPERATOR [2]	16.00	HR	$45.66	$1,461.12
LABOR [2]	16.00	HR	$42.16	$1,349.12
LABOR	16.00	HR	$42.16	$674.56
WACKER COMPACTOR [2]	16.00	HR	$5.00	$160.00
MEDIAN BACKFILL TRUCKING	631.00	CY	$4.68	$2,951.20
MEDIAN BACKFILL TRUCKING (315.50 CY/DY, 2.00 DY)	631.00	CY	$4.68	$2,951.20
SUPER 16 [2]	16.00	HR	$92.23	$2,951.20
Single Curb, MAG Det 222, Type A	2,185.00	LF	$14.03	$30,651.66
CURB MATERIAL	1.00	LS	$8,880.00	$8,880.00
MAG B 2500 PSI (A Estimate)	72.00	CY	$115.00	$8,280.00
MISC CURB MATERIAL	1.00	LS	$600.00	$600.00
FRM/PR/STRIP CURB 222 A	400.00	LF	$14.85	$5,938.24
FRM/PR/STRIP CURB CREW (200.00 LF/DY, 2.00 DY)	400.00	LF	$14.85	$5,938.24
FINISHER FOREMAN	16.00	HR	$49.50	$792.00
LABOR [2]	16.00	HR	$42.16	$1,349.12
LABOR [2]	16.00	HR	$42.16	$1,349.12
FINISHER 1 [2]	16.00	HR	$48.50	$1,552.00
FLATRACK [2]	16.00	HR	$28.00	$896.00
SLIP CURB 220 TY A	1,785.00	LF	$8.31	$14,833.42
SET PINS	1,785.00	LF	$1.38	$2,471.68
SET PINS CREW (892.50 LF/DY, 2.00 DY)	1,785.00	LF	$1.38	$2,471.68
FLATRACK	16.00	HR	$28.00	$448.00
LABOR	16.00	HR	$42.16	$674.56
LABOR	16.00	HR	$42.16	$674.56
LABOR	16.00	HR	$42.16	$674.56
SLIP FORM CURB	1,785.00	LF	$6.93	$12,361.74
SLIP FORM CREW (892.50 LF/DY, 2.00 DY)	1,785.00	LF	$6.93	$12,361.74
F-250 PICKUP [3]	16.00	HR	$18.16	$871.82
FINISHER FOREMAN	16.00	HR	$49.50	$792.00
FINISHER 1	16.00	HR	$48.50	$776.00
FINISHER 1 [2]	16.00	HR	$48.50	$1,552.00
LABOR [2]	16.00	HR	$42.16	$1,349.12
LABOR [5]	16.00	HR	$42.16	$3,372.80

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost
(Item 12 - 12 - SINGLE CURB, TYPE A, MAG DET 222 continued)				
SLIP MACHINE	16.00	HR	$228.00	$3,648.00
SLIP FORM MOBE	1.00	EACH	$1,000.00	$1,000.00
13 - 13 - VERTICAL CURB & GUTTER, TYPE A, MAG DET 220-1	**843.00**	**LF**	**$20.90**	**$17,620.16**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$11.69	$2.62	$6.60	$0.00	$0.00	$0.00	$0.00
Total:	$9,853.92	$2,206.24	$5,560.00	$0.00	$0.00	$0.00	$0.00

VERTICAL CURB AND GUTTER, TYPE A, H=6 IN, MAG DET 220-1	843.00	LF	$20.90	$17,620.16
FNGD CURB 220-1 Type A	843.00	LF	$2.88	$2,428.80
FINE GRADE CURB (843.00 LF/DY, 1.00 DY)	843.00	LF	$2.88	$2,428.80
140 BLADE	8.00	HR	$124.54	$996.32
OPERATOR	8.00	HR	$45.66	$365.28
GRADE CHECKER	8.00	HR	$48.50	$388.00
414E SKIP LOADER	8.00	HR	$39.24	$313.92
OPERATOR	8.00	HR	$45.66	$365.28
Vertical Curb & Gutter, MAG Det 220, Type A, H=6"	843.00	LF	$18.02	$15,191.36
CURB MATERIAL	1.00	LS	$5,560.00	$5,560.00
MAG B 2500 PSI (A Estimate)	44.00	CY	$115.00	$5,060.00
MISC CURB MATERIAL	1.00	LS	$500.00	$500.00
FRM/PR/STRIP CURB 220 A	843.00	LF	$11.43	$9,631.36
FRM/PR/STRIP CURB CREW (210.75 LF/DY, 4.00 DY)	843.00	LF	$11.43	$9,631.36
FINISHER FOREMAN	32.00	HR	$49.50	$1,584.00
LABOR [2]	32.00	HR	$42.16	$2,698.24
LABOR	32.00	HR	$42.16	$1,349.12
FINISHER 1 [2]	32.00	HR	$48.50	$3,104.00
FLATRACK	32.00	HR	$28.00	$896.00
14 - 14 - CONSTRUCT CONCRETE SIDEWALK PER MAD STD DET 230	**5,011.00**	**SF**	**$7.02**	**$35,159.40**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$4.45	$0.91	$1.66	$0.00	$0.00	$0.00	$0.00
Total:	$22,299.20	$4,555.20	$8,305.00	$0.00	$0.00	$0.00	$0.00

CONCRETE SIDEWALK, MAG DET 230	5,011.00	SF	$7.02	$35,159.40
FNGD SIDEWALK 230	5,011.00	SF	$2.07	$10,383.68
FINE GRADE CONCRETE SIDEWALK (1,252.75 SF/DY, 4.00 DY)	5,011.00	SF	$2.07	$10,383.68
414E SKIP LOADER	32.00	HR	$39.24	$1,255.68
OPERATOR	32.00	HR	$45.66	$1,461.12
GRADE CHECKER	32.00	HR	$48.50	$1,552.00
3900 WATERTRUCK	32.00	HR	$61.11	$1,955.52
OPERATOR	32.00	HR	$45.66	$1,461.12
LABOR [2]	32.00	HR	$42.16	$2,698.24
Concrete Sidewalk, COP Det P1230	5,011.00	SF	$4.94	$24,775.72
SIDEWALK MATERIAL	1.00	LS	$8,305.00	$8,305.00
MISC CURB MATERIAL	1.00	LS	$600.00	$600.00
MAG B 2500 PSI (A Estimate)	67.00	CY	$115.00	$7,705.00
FRM/PR/STRIP SIDEWALK	5,011.00	SF	$3.29	$16,470.72
FRM/PR/STRIP SIDEWALK CREW (835.17 SF/DY, 6.00 DY)	5,011.00	SF	$3.29	$16,470.72
FINISHER FOREMAN	48.00	HR	$49.50	$2,376.00

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost
(Item 14 - 14 - CONSTRUCT CONCRETE SIDEWALK PER MAD STD DET 230 continued)				
LABOR [2]	48.00	HR	$42.16	$4,047.36
LABOR [2]	48.00	HR	$42.16	$4,047.36
FINISHER 1 [2]	48.00	HR	$48.50	$4,656.00
FLATRACK	48.00	HR	$28.00	$1,344.00
15 - 15 - CONSTRUCT DUAL RAMP PER COC DET C-258	**2.00**	**EACH**	**$2,822.08**	**$5,644.16**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$1,455.44	$216.64	$1,150.00	$0.00	$0.00	$0.00	$0.00
Total:	$2,910.88	$433.28	$2,300.00	$0.00	$0.00	$0.00	$0.00

DUAL CONCRETE CURB RAMP WITH DETECTABLE WARNING, COC DET C-258	2.00	EACH	$2,822.08	$5,644.16
FNG SIDEWALK RMP	2.00	EACH	$468.16	$936.32
FINE GRADE SIDEWALK RAMP (3.00 EACH/DY, 0.67 DY)	2.00	EACH	$468.16	$936.32
414E SKIP LOADER	5.33	HR	$39.24	$209.28
OPERATOR	5.33	HR	$45.66	$243.52
GRADE CHECKER	5.33	HR	$48.50	$258.67
LABOR	5.33	HR	$42.16	$224.85
Sidewalk Ramp, (COC STD DTL C-258)	2.00	EACH	$2,353.92	$4,707.84
SIDEWALK MATERIAL	1.00	LS	$2,300.00	$2,300.00
MAG B 2500 PSI (A Estimate)	10.00	CY	$115.00	$1,150.00
MISC CURB MATERIAL	1.00	LS	$150.00	$150.00
DETECTABLE WARNING (SIDEWALK)	40.00	SF	$25.00	$1,000.00
FRM/PR/STRIP RMP C-258	2.00	EACH	$1,203.92	$2,407.84
FRM/PR/STRIP SIDEWALK RAMP (2.00 EACH/DY, 1.00 DY)	2.00	EACH	$1,203.92	$2,407.84
FINISHER FOREMAN	8.00	HR	$49.50	$396.00
LABOR [2]	8.00	HR	$42.16	$674.56
LABOR	8.00	HR	$42.16	$337.28
FINISHER 1 [2]	8.00	HR	$48.50	$776.00
FLATRACK	8.00	HR	$28.00	$224.00
16 - 16 - CONSTRUCT SINGLE RAMP PER COC DET C-258	**2.00**	**EACH**	**$2,834.58**	**$5,669.16**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$1,455.44	$216.64	$1,162.50	$0.00	$0.00	$0.00	$0.00
Total:	$2,910.88	$433.28	$2,325.00	$0.00	$0.00	$0.00	$0.00

CONSTRUCT SINGLE RAMP PER COC DET C-258	2.00	EACH	$2,834.58	$5,669.16
FNG SIDEWALK RMP	2.00	EACH	$468.16	$936.32
FINE GRADE SIDEWALK RAMP (3.00 EACH/DY, 0.67 DY)	2.00	EACH	$468.16	$936.32
414E SKIP LOADER	5.33	HR	$39.24	$209.28
OPERATOR	5.33	HR	$45.66	$243.52
GRADE CHECKER	5.33	HR	$48.50	$258.67
LABOR	5.33	HR	$42.16	$224.85
Sidewalk Ramp, (COC STD DTL C-258)	2.00	EACH	$2,366.42	$4,732.84
SIDEWALK MATERIAL	1.00	LS	$2,325.00	$2,325.00
MAG B 2500 PSI (A Estimate)	15.00	CY	$115.00	$1,725.00
MISC CURB MATERIAL	1.00	LS	$100.00	$100.00
DETECTABLE WARNING (SIDEWALK)	20.00	SF	$25.00	$500.00
FRM/PR/STRIP RMP C-258	2.00	EACH	$1,203.92	$2,407.84
FRM/PR/STRIP SIDEWALK RAMP (2.00 EACH/DY, 1.00 DY)	2.00	EACH	$1,203.92	$2,407.84
FINISHER FOREMAN	8.00	HR	$49.50	$396.00

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost
(Item 16 - 16 - CONSTRUCT SINGLE RAMP PER COC DET C-258 continued)				
LABOR [2]	8.00	HR	$42.16	$674.56
LABOR	8.00	HR	$42.16	$337.28
FINISHER 1 [2]	8.00	HR	$48.50	$776.00
FLATRACK	8.00	HR	$28.00	$224.00
17 - 17 - CONSTRUCT CONCRETE BUS BAY AND SHELTER PAD PER COC DET C-230	**1.00**	**EACH**	**$26,507.92**	**$26,507.92**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$16,085.12	$1,922.80	$8,500.00	$0.00	$0.00	$0.00	$0.00
Total:	$16,085.12	$1,922.80	$8,500.00	$0.00	$0.00	$0.00	$0.00

CONCRETE VALLEY GUTTER (MAG DET. 240)	1,250.00	SF	$21.21	$26,507.92
FNG BUS BAY	1,250.00	SF	$2.08	$2,595.92
FINE GRADE APRON AND VALLEY GUTTER (1,250.00 SF/DY, 1.00 DY)	1,250.00	SF	$2.08	$2,595.92
414E SKIP LOADER	8.00	HR	$39.24	$313.92
OPERATOR	8.00	HR	$45.66	$365.28
GRADE CHECKER	8.00	HR	$48.50	$388.00
3900 WATERTRUCK	8.00	HR	$61.11	$488.88
OPERATOR	8.00	HR	$45.66	$365.28
LABOR	8.00	HR	$42.16	$337.28
LABOR	8.00	HR	$42.16	$337.28
CONSTRUCT CONCRETE BUS BAY AND SHELTER PAD PER COC DET C-230	1,250.00	SF	$19.13	$23,912.00
SIDEWALK MATERIAL	1.00	LS	$8,500.00	$8,500.00
MISC CURB MATERIAL	1.00	LS	$1,000.00	$1,000.00
MAG A 3000 PSI (A Estimate)	50.00	CY	$150.00	$7,500.00
FRM/PR/STRP BAY	1,250.00	SF	$12.33	$15,412.00
FRM/PR/STRIP SIDEWALK CREW (312.50 SF/DY, 4.00 DY)	1,250.00	SF	$12.33	$15,412.00
FINISHER FOREMAN	40.00	HR	$49.50	$1,980.00
LABOR [4]	40.00	HR	$42.16	$6,745.60
LABOR	40.00	HR	$42.16	$1,686.40
FINISHER 1 [2]	40.00	HR	$48.50	$3,880.00
FLATRACK	40.00	HR	$28.00	$1,120.00
18 - 18 - CONSTRUCT CONCRETE VALLEY GUTTER PEP MAG STD DETAIL 240 (MODIFIED 3')	**254.00**	**SF**	**$36.70**	**$9,322.50**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$27.56	$3.44	$5.71	$0.00	$0.00	$0.00	$0.00
Total:	$6,999.80	$872.70	$1,450.00	$0.00	$0.00	$0.00	$0.00

CONCRETE VALLEY GUTTER (MAG DET. 240)	254.00	SF	$36.70	$9,322.50
FNG VALLY GUTTER	254.00	SF	$2.56	$648.98
FINE GRADE APRON AND VALLEY GUTTER (1,016.00 SF/DY, 0.25 DY)	254.00	SF	$2.56	$648.98
414E SKIP LOADER	2.00	HR	$39.24	$78.48
OPERATOR	2.00	HR	$45.66	$91.32
GRADE CHECKER	2.00	HR	$48.50	$97.00
3900 WATERTRUCK	2.00	HR	$61.11	$122.22
OPERATOR	2.00	HR	$45.66	$91.32
LABOR	2.00	HR	$42.16	$84.32
LABOR	2.00	HR	$42.16	$84.32
CONCRETE VALLEY GUTTER (MAG DET. 240)	254.00	SF	$34.15	$8,673.52

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost
(Item 18 - 18 - CONSTRUCT CONCRETE VALLEY GUTTER PEP MAG STD DETAIL 240 (MODIFIED 3') continued)				
SIDEWALK MATERIAL	1.00	LS	$1,450.00	$1,450.00
MISC CURB MATERIAL	1.00	LS	$100.00	$100.00
MAG A 3000 PSI (A Estimate)	9.00	CY	$150.00	$1,350.00
FRM/PR/STRP GUTTER	254.00	SF	$28.44	$7,223.52
FRM/PR/STRIP SIDEWALK CREW (84.67 SF/DY, 3.00 DY)	254.00	SF	$28.44	$7,223.52
FINISHER FOREMAN	24.00	HR	$49.50	$1,188.00
LABOR [2]	24.00	HR	$42.16	$2,023.68
LABOR	24.00	HR	$42.16	$1,011.84
FINISHER 1 [2]	24.00	HR	$48.50	$2,328.00
FLATRACK	24.00	HR	$28.00	$672.00
19 - 19 - CONSTRUCT DRAINAGE SCUPPER PER COC DET C-500. REUSE EXISTING RIP RAP AND SPLASH PAD	**4.00**	**EACH**	**$7,919.28**	**$31,677.12**
Unit: Labor $5,007.28 · Equipment $562.00 · Material $2,100.00 · Subcontracted $250.00 · Trucking $0.00 · Miscellaneous $0.00 · Plug $0.00				
Total: Labor $20,029.12 · Equipment $2,248.00 · Material $8,400.00 · Subcontracted $1,000.00 · Trucking $0.00 · Miscellaneous $0.00 · Plug $0.00				
SCUPPER PER COC STD DETAIL C-500	4.00	EACH	$7,919.28	$31,677.12
EXC SCPR/SPLWY C-500	4.00	EACH	$477.37	$1,909.48
EXCAVATE SCUPPER (2.00 EACH/DY, 2.00 DY)	4.00	EACH	$477.37	$1,909.48
420E BACKHOE	16.00	HR	$26.52	$424.36
OPERATOR	16.00	HR	$45.66	$730.56
LABOR	16.00	HR	$42.16	$674.56
WACKER COMPACTOR	16.00	HR	$5.00	$80.00
CONCRETE SCUPPER, C-500	4.00	EACH	$7,441.91	$29,767.64
BUY SCUPPER MATERIAL	4.00	EACH	$2,100.00	$8,400.00
MISC SCUPPER MATERIAL (A Estimate)	1.00	LS	$1,000.00	$1,000.00
MAG A 3000 PSI (A Estimate)	12.00	CY	$150.00	$1,800.00
SCUPPER HDWR C-500 (Grate Solutions Company Inc.)	4.00	EACH	$1,400.00	$5,600.00
BUILD SCUPPER C-500	4.00	EACH	$5,091.91	$20,367.64
FORM/POUR/STRIP CATCH BASIN (0.33 EACH/DY, 12.00 DY)	4.00	EACH	$5,091.91	$20,367.64
F-250 PICKUP	96.00	HR	$18.16	$1,743.64
CARPENTER FOREMEN	96.00	HR	$48.50	$4,656.00
CARPENTER 1 [3]	96.00	HR	$48.50	$13,968.00
19 - CONCRETE SCUPPER REBAR (A Estimate)	4.00	EACH	$250.00	$1,000.00
20 - 20 - MEDIAN NOSE PER, COC DET C-225 (PAINTED YELLOW)	**41.00**	**SF**	**$59.17**	**$2,425.78**
Unit: Labor $43.69 · Equipment $4.99 · Material $10.49 · Subcontracted $0.00 · Trucking $0.00 · Miscellaneous $0.00 · Plug $0.00				
Total: Labor $1,791.38 · Equipment $204.40 · Material $430.00 · Subcontracted $0.00 · Trucking $0.00 · Miscellaneous $0.00 · Plug $0.00				
MEDIAN NOSE PER, COC DET C-225 (PAINTED YELLOW)	41.00	SF	$59.17	$2,425.78
CONCRETE HEADER (6")	10.00	LF	$115.82	$1,158.23
CONCRETE HEADER (6")	10.00	LF	$115.82	$1,158.23
CURB MATERIAL	1.00	LS	$165.00	$165.00
MAG B 2500 PSI (A Estimate)	1.00	CY	$115.00	$115.00
MISC CURB MATERIAL	1.00	LS	$50.00	$50.00
FRM/PR/STRP HEADER(6")	10.00	LF	$99.32	$993.23
FRM/PR/STRIP CURB CREW (30.30 LF/DY, 0.33 DY)	10.00	LF	$99.32	$993.23
FINISHER FOREMAN	3.30	HR	$49.50	$163.35

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost
(Item 20 - 20 - MEDIAN NOSE PER, COC DET C-225 (PAINTED YELLOW) continued)				
LABOR [2]	3.30	HR	$42.16	$278.26
LABOR	3.30	HR	$42.16	$139.13
FINISHER 1 [2]	3.30	HR	$48.50	$320.10
FLATRACK	3.30	HR	$28.00	$92.40
END OF MEDIAN RAMP PER COC STD DTL C- 225	41.00	SF	$30.92	$1,267.55
FNGD MEDIAN	41.00	SF	$8.14	$333.91
FNGD MEDIAN (124.24 SF/DY, 0.33 DY)	41.00	SF	$8.14	$333.91
LABOR [3]	2.64	HR	$42.16	$333.91
END OF MEDIAN RAMP PER COC STD DTL C- 225	41.00	SF	$22.77	$933.64
SIDEWALK MATERIAL	1.00	LS	$265.00	$265.00
MISC CURB MATERIAL	1.00	LS	$100.00	$100.00
MAG B 2500 PSI (A Estimate)	1.00	CY	$115.00	$115.00
MAG SPEC ABC (A Estimate)	4.00	TON	$12.50	$50.00
END OF MEDIAN RAMP PER COC STD DTL C- 225	41.00	SF	$16.31	$668.64
END OF MEDIAN RAMP PER COC STD DTL C- 225 (82.00 SF/DY, 0.50 DY)	41.00	SF	$16.31	$668.64
LABOR	4.00	HR	$42.16	$168.64
FINISHER 1 [2]	4.00	HR	$48.50	$388.00
FLATRACK	4.00	HR	$28.00	$112.00
21 - 21 - MEDIAN PAVERS PER COC DET C-225	**1,504.00**	**SF**	**$9.11**	**$13,705.22**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$1.46	$0.66	$0.00	$7.00	$0.00	$0.00	$0.00
Total:	$2,189.12	$988.10	$0.00	$10,528.00	$0.00	$0.00	$0.00

MEDIAN PAVERS PER COC DET C-225	1,504.00	SF	$9.11	$13,705.22
FINEGRADE MEDIAN PAVERS	1,504.00	SF	$2.11	$3,177.22
FINEGRADE MEDIAN PAVERS (1,504.00 SF/DY, 1.00 DY)	1,504.00	SF	$2.11	$3,177.22
F-250 PICKUP	8.00	HR	$18.16	$145.30
414E SKIP LOADER	8.00	HR	$39.24	$313.92
OPERATOR	8.00	HR	$45.66	$365.28
GRADE CHECKER	8.00	HR	$48.50	$388.00
LABOR	8.00	HR	$42.16	$337.28
LABOR	8.00	HR	$42.16	$337.28
GRADE FOREMAN	8.00	HR	$49.50	$396.00
3900 WATERTRUCK	8.00	HR	$61.11	$488.88
OPERATOR	8.00	HR	$45.66	$365.28
GPS ROVER/BASE	8.00	HR	$5.00	$40.00
BRICK MEDIAN PAVERS, COC DET C-225 (CD Development)	1,504.00	SF	$7.00	$10,528.00
22 - 22 - ADJUST MANHOLE FRAME & COVER, MAG DET 422 (Specialty Co. Group)	**2.00**	**EACH**	**$850.00**	**$1,700.00**
23 - 23 - ADJUST VALVE BOX & COVER, MAG DET 391-1 AND COC DET C-307 (Specialty Co. Group)	**3.00**	**EACH**	**$750.00**	**$2,250.00**
24 - 24 - CUT EXISTING WATER LINE AND INSTALL NEW VALVE & VALVE BOX PER MAG DETAILS	**1.00**	**EACH**	**$5,345.53**	**$5,345.53**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$1,687.80	$795.23	$1,812.50	$1,050.00	$0.00	$0.00	$0.00
Total:	$1,687.80	$795.23	$1,812.50	$1,050.00	$0.00	$0.00	$0.00

CUT EXISTING WATER LINE AND INSTALL NEW VALVE & VALVE BOX PER MAG DETAILS	1.00	EACH	$5,345.53	$5,345.53

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost
(Item 24 - 24 - CUT EXISTING WATER LINE AND INSTALL NEW VALVE & VALVE BOX PER MAG DETAILS continued)				
BUY VALVE MATERIALS	1.00	EACH	$2,012.50	$2,012.50
MAG SPEC ABC (A Estimate)	5.00	TON	$12.50	$62.50
SPEED SHORES	4.00	DY	$50.00	$200.00
VALVE BOX & COVER (A Estimate)	1.00	EACH	$250.00	$250.00
24 - 6" GATE VALVE	1.00	EACH	$1,500.00	$1,500.00
CUT IN VALVE	1.00	EACH	$2,283.03	$2,283.03
HYDRANT CREW (1.00 EACH/DY, 1.00 DY)	1.00	EACH	$2,283.03	$2,283.03
420E BACKHOE	10.00	HR	$26.52	$265.23
OPERATOR	10.00	HR	$45.66	$456.60
LABOR	10.00	HR	$42.16	$421.60
LABOR	10.00	HR	$42.16	$421.60
FLATRACK	10.00	HR	$28.00	$280.00
WACKER COMPACTOR	10.00	HR	$5.00	$50.00
PIPE FOREMAN	10.00	HR	$38.80	$388.00
TAP WATERLINE (Pipeline Sevices Inc.)	1.00	EACH	$1,050.00	$1,050.00
25 - 25 - CONNECT NEW 6" DIP AT EXISTING FIRE HYDRANT	**2.00**	**EACH**	**$757.95**	**$1,515.90**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$278.49	$198.21	$281.25	$0.00	$0.00	$0.00	$0.00
Total:	$556.97	$396.43	$562.50	$0.00	$0.00	$0.00	$0.00

CONNECT NEW 6" DIP AT EXISTING FIRE HYDRANT	2.00	EACH	$757.95	$1,515.90
BUY HYDRANT MATERIALS	2.00	EACH	$381.25	$762.50
MAG SPEC ABC (A Estimate)	5.00	TON	$12.50	$62.50
SPEED SHORES	4.00	DY	$50.00	$200.00
167- 6" CAP (A Estimate)	2.00	EACH	$250.00	$500.00
CONNECT NEW 6" DIP AT EXISTING FIRE HYDRANT	2.00	EACH	$376.70	$753.40
HYDRANT CREW (6.06 EACH/DY, 0.33 DY)	2.00	EACH	$376.70	$753.40
420E BACKHOE	3.30	HR	$26.52	$87.53
OPERATOR	3.30	HR	$45.66	$150.68
LABOR	3.30	HR	$42.16	$139.13
LABOR	3.30	HR	$42.16	$139.13
FLATRACK	3.30	HR	$28.00	$92.40
WACKER COMPACTOR	3.30	HR	$5.00	$16.50
PIPE FOREMAN	3.30	HR	$38.80	$128.04
26 - 26 - INSTALL 6" DIP	**26.00**	**LF**	**$208.96**	**$5,433.03**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$64.92	$30.59	$113.46	$0.00	$0.00	$0.00	$0.00
Total:	$1,687.80	$795.23	$2,950.00	$0.00	$0.00	$0.00	$0.00

INSTALL 6" DIP	26.00	EACH	$208.96	$5,433.03
BUY HYDRANT MATERIALS	26.00	EACH	$121.15	$3,150.00
MAG SPEC ABC (A Estimate)	20.00	TON	$12.50	$250.00
SPEED SHORES	4.00	DY	$50.00	$200.00
10 - 6" DIP For Fire Hydrants (A Estimate)	60.00	LF	$40.00	$2,400.00
MAG A 3000 PSI (A Estimate)	2.00	CY	$150.00	$300.00
INSTALL 6" DIP	26.00	EACH	$87.81	$2,283.03
HYDRANT CREW (26.00 LF/DY, 1.00 DY)	26.00	LF	$87.81	$2,283.03
420E BACKHOE	10.00	HR	$26.52	$265.23
OPERATOR	10.00	HR	$45.66	$456.60

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost
(Item 26 - 26 - INSTALL 6" DIP continued)				
LABOR	10.00	HR	$42.16	$421.60
LABOR	10.00	HR	$42.16	$421.60
FLATRACK	10.00	HR	$28.00	$280.00
WACKER COMPACTOR	10.00	HR	$5.00	$50.00
PIPE FOREMAN	10.00	HR	$38.80	$388.00
27 - 27 - INSTALL 6" DIP BENDS	**2.00**	**EACH**	**$1,052.01**	**$2,104.01**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$421.95	$248.81	$381.25	$0.00	$0.00	$0.00	$0.00
Total:	$843.90	$497.61	$762.50	$0.00	$0.00	$0.00	$0.00

INSTALL 6" DIP	2.00	EACH	$1,052.01	$2,104.01
BUY HYDRANT MATERIALS	2.00	EACH	$481.25	$962.50
MAG SPEC ABC (A Estimate)	5.00	TON	$12.50	$62.50
SPEED SHORES	4.00	DY	$50.00	$200.00
30 - 45 Deg Restrained Bends (A Estimate)	2.00	EACH	$350.00	$700.00
INSTALL 6" DIP	2.00	EACH	$570.76	$1,141.51
HYDRANT CREW (4.00 LF/DY, 0.50 DY)	2.00	LF	$570.76	$1,141.51
420E BACKHOE	5.00	HR	$26.52	$132.61
OPERATOR	5.00	HR	$45.66	$228.30
LABOR	5.00	HR	$42.16	$210.80
LABOR	5.00	HR	$42.16	$210.80
FLATRACK	5.00	HR	$28.00	$140.00
WACKER COMPACTOR	5.00	HR	$5.00	$25.00
PIPE FOREMAN	5.00	HR	$38.80	$194.00
28 - 28 - FURNISH & INSTALL NEW FIRE HYDRANT PER COC DET C-303	**3.00**	**EACH**	**$9,136.36**	**$27,409.08**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$1,687.80	$661.89	$6,786.67	$0.00	$0.00	$0.00	$0.00
Total:	$5,063.40	$1,985.68	$20,360.00	$0.00	$0.00	$0.00	$0.00

FURNISH & INSTALL NEW FIRE HYDRANT PER COC DET C-303	3.00	EACH	$9,136.36	$27,409.08
BUY HYDRANT MATERIALS	3.00	EACH	$6,853.33	$20,560.00
MAG SPEC ABC (A Estimate)	20.00	TON	$12.50	$250.00
MAG B 2500 PSI (A Estimate)	4.00	CY	$115.00	$460.00
A MISC MATERIALS (A Estimate)	1.00	LS	$150.00	$150.00
SPEED SHORES	4.00	DY	$50.00	$200.00
195-INSTALL FIRE HYDRANT, MAG DET 360 (A Estimate)	3.00	EACH	$6,500.00	$19,500.00
FURNISH & INSTALL NEW FIRE HYDRANT PER COC DET C-303	3.00	EACH	$2,283.03	$6,849.08
HYDRANT CREW (1.00 EACH/DY, 3.00 DY)	3.00	EACH	$2,283.03	$6,849.08
420E BACKHOE	30.00	HR	$26.52	$795.68
OPERATOR	30.00	HR	$45.66	$1,369.80
LABOR	30.00	HR	$42.16	$1,264.80
LABOR	30.00	HR	$42.16	$1,264.80
FLATRACK	30.00	HR	$28.00	$840.00
WACKER COMPACTOR	30.00	HR	$5.00	$150.00
PIPE FOREMAN	30.00	HR	$38.80	$1,164.00
29 - 29 - 2" MILL EXISTING ASPHALTIC CONCRETE PAVEMENT	**448.00**	**SY**	**$17.25**	**$7,728.72**

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost

(Item 29 - 29 - 2" MILL EXISTING ASPHALTIC CONCRETE PAVEMENT continued)

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$3.26	$9.66	$0.33	$4.00	$0.00	$0.00	$0.00
Total:	$1,461.12	$4,325.60	$150.00	$1,792.00	$0.00	$0.00	$0.00

MILLING 2" AC	448.00	SY	$17.25	$7,728.72
REMOVE ASPHALTIC CONCRETE PAVEMENT	448.00	SY	$17.25	$7,728.72
MILLING 2" (Public Works)	448.00	SY	$4.00	$1,792.00
MILLING SUPPORT	1.00	LS	$4,426.72	$4,426.72
MILLING SUPPORT CREW (0.50 LS/DY, 2.00 DY)	1.00	LS	$4,426.72	$4,426.72
3900 WATERTRUCK	16.00	HR	$61.11	$977.76
OPERATOR	16.00	HR	$45.66	$730.56
PICK-UP BROOM	16.00	HR	$85.00	$1,360.00
414E SKIP LOADER	16.00	HR	$39.24	$627.84
OPERATOR	16.00	HR	$45.66	$730.56
HAUL MILLINGS	24.00	CY	$56.67	$1,360.00
HAUL MILLINGS	24.00	CY	$56.67	$1,360.00
HAUL MILLINGS (24.00 CY/DY, 1.00 DY)	24.00	CY	$56.67	$1,360.00
BELLY DUMP [2]	8.00	HR	$85.00	$1,360.00
DUMP FEES	3.00	LOAD	$50.00	$150.00
DUMP FEES (ASPHALT) (A Estimate)	3.00	LOAD	$50.00	$150.00

30 - 30 - REMOVE EXISTING CONCRETE CURB — **3,507.00 LF** — **$8.05** — **$28,232.78**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$3.09	$4.21	$0.64	$0.11	$0.00	$0.00	$0.00
Total:	$10,832.00	$14,750.78	$2,250.00	$400.00	$0.00	$0.00	$0.00

REMOVE CONCRETE SINGLE CURB	3,507.00	LF	$8.05	$28,232.78
CURB CUTS (A Estimate)	8.00	EACH	$50.00	$400.00
REM/LD CURB & GUTTER	3,507.00	LF	$5.45	$19,127.03
REMOVE/LD CURB (876.75 LF/DY, 4.00 DY)	3,507.00	LF	$5.45	$19,127.03
F-250 PICKUP	40.00	HR	$18.16	$726.52
GRADE FOREMAN	40.00	HR	$49.50	$1,980.00
420E BACKHOE	40.00	HR	$26.52	$1,060.91
OPERATOR	40.00	HR	$45.66	$1,826.40
950H LOADER	40.00	HR	$101.58	$4,063.20
OPERATOR	40.00	HR	$45.66	$1,826.40
3900 WATERTRUCK	40.00	HR	$61.11	$2,444.40
OPERATOR	40.00	HR	$45.66	$1,826.40
LABOR [2]	40.00	HR	$42.16	$3,372.80
HAUL/DISPOSE CONCRETE	35.00	LOAD	$248.74	$8,705.75
SUPER 16	70.00	HR	$92.23	$6,455.75
DUMP FEES (CONCRETE) (A Estimate)	45.00	LOAD	$50.00	$2,250.00

31 - 31 - REMOVE EXISTING CONCRETE SIDEWALK AND CONCRETE RAMPS — **6,713.00 SF** — **$2.64** — **$17,751.29**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$1.02	$1.41	$0.07	$0.14	$0.00	$0.00	$0.00
Total:	$6,859.20	$9,434.01	$500.00	$958.08	$0.00	$0.00	$0.00

REMOVAL OF CONCRETE SIDEWALKS, DRIVEWAYS AND SLABS	6,713.00	SF	$2.64	$17,751.29
SAWCUT SIDEWALK (A Estimate)	8.00	EACH	$119.76	$958.08
REM/LD S/W	6,713.00	SF	$2.15	$14,448.71
REMOVE/LD S/W, DW (2,237.67 SF/DY, 3.00 DY)	6,713.00	SF	$2.15	$14,448.71

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost
(Item 31 - 31 - REMOVE EXISTING CONCRETE SIDEWALK AND CONCRETE RAMPS continued)				
950H LOADER	30.00	HR	$101.58	$3,047.40
OPERATOR	30.00	HR	$45.66	$1,369.80
LABOR	30.00	HR	$42.16	$1,264.80
3900 WATERTRUCK	30.00	HR	$61.11	$1,833.30
OPERATOR	30.00	HR	$45.66	$1,369.80
420 E BACKHOE W/ HAMMER	30.00	HR	$72.13	$2,163.92
OPERATOR	30.00	HR	$45.66	$1,369.80
F-250 PICKUP	30.00	HR	$18.16	$544.89
GRADE FOREMAN	30.00	HR	$49.50	$1,485.00
HAUL/DISPOSE CONCRETE	10.00	LOAD	$234.45	$2,344.50
SUPER 16	20.00	HR	$92.23	$1,844.50
DUMP FEES (CONCRETE) (A Estimate)	10.00	LOAD	$50.00	$500.00
32 - 32 - REMOVE LIGHT POLE FOUNDATIONS AND SALVAGE STREETLIGHT POLES/EQUIPMENT	**4.00**	**EACH**	**$1,660.31**	**$6,641.25**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$450.28	$395.03	$250.00	$565.00	$0.00	$0.00	$0.00
Total:	$1,801.12	$1,580.13	$1,000.00	$2,260.00	$0.00	$0.00	$0.00

REMOVE LIGHT POLE FOUNDATIONS AND SALVAGE STREETLIGHT POLES/EQUIPMENT	4.00	EACH	$1,660.31	$6,641.25
REMOVE/SALVAGE LIGHT POLES (Roadway Electric LLC.)	4.00	EACH	$565.00	$2,260.00
REMOVE POLE FOUNDATIONS	4.00	EACH	$1,095.31	$4,381.25
REMOVE POLE FOUNDATIONS	4.00	EACH	$753.09	$3,012.35
REMOVE POLE FOUNDATIONS (4.00 EACH/DY, 1.00 DY)	4.00	EACH	$753.09	$3,012.35
F-250 PICKUP	8.00	HR	$18.16	$145.30
GRADE FOREMAN	8.00	HR	$49.50	$396.00
LABOR	8.00	HR	$42.16	$337.28
LABOR	8.00	HR	$42.16	$337.28
3900 WATERTRUCK	8.00	HR	$61.11	$488.88
OPERATOR	8.00	HR	$45.66	$365.28
420 E BACKHOE W/ HAMMER	8.00	HR	$72.13	$577.05
OPERATOR	8.00	HR	$45.66	$365.28
HAUL/DISPOSE CONCRETE	2.00	LOAD	$684.45	$1,368.90
SUPER 16	4.00	HR	$92.23	$368.90
DUMP FEES (TRASH) (A Estimate)	2.00	LOAD	$500.00	$1,000.00
33 - 33 - REMOVE AND SALVAGE EXISTING FIRE HYDRANT	**3.00**	**EACH**	**$1,291.51**	**$3,874.54**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$843.90	$364.28	$83.33	$0.00	$0.00	$0.00	$0.00
Total:	$2,531.70	$1,092.84	$250.00	$0.00	$0.00	$0.00	$0.00

REMOVE AND SALVAGE EXISTING FIRE HYDRANT	3.00	EACH	$1,291.51	$3,874.54
BUY HYDRANT MATERIALS	3.00	EACH	$150.00	$450.00
MAG SPEC ABC (A Estimate)	20.00	TON	$12.50	$250.00
SPEED SHORES	4.00	DY	$50.00	$200.00
REMOVE AND SALVAGE EXISTING FIRE HYDRANT	3.00	EACH	$1,141.51	$3,424.54
HYDRANT CREW (2.00 EACH/DY, 1.50 DY)	3.00	EACH	$1,141.51	$3,424.54
420E BACKHOE	15.00	HR	$26.52	$397.84
OPERATOR	15.00	HR	$45.66	$684.90
LABOR	15.00	HR	$42.16	$632.40
LABOR	15.00	HR	$42.16	$632.40

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost
(Item 33 - 33 - REMOVE AND SALVAGE EXISTING FIRE HYDRANT continued)				
FLATRACK	15.00	HR	$28.00	$420.00
WACKER COMPACTOR	15.00	HR	$5.00	$75.00
PIPE FOREMAN	15.00	HR	$38.80	$582.00
34 - 34 - REMOVE EXISTING CONCRETE DRAINAGE SCUPPER	**4.00**	**EACH**	**$2,799.58**	**$11,198.34**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$1,083.20	$1,216.38	$500.00	$0.00	$0.00	$0.00	$0.00
Total:	$4,332.80	$4,865.54	$2,000.00	$0.00	$0.00	$0.00	$0.00

REMOVE CONCRETE SCUPPER	4.00	EACH	$2,799.58	$11,198.34
REMOVE SCUPPER	4.00	EACH	$2,115.13	$8,460.54
REMOVE SCUPPER (2.00 EACH/DY, 2.00 DY)	4.00	EACH	$2,115.13	$8,460.54
950H LOADER	16.00	HR	$101.58	$1,625.28
OPERATOR	16.00	HR	$45.66	$730.56
LABOR	16.00	HR	$42.16	$674.56
LABOR	16.00	HR	$42.16	$674.56
WACKER COMPACTOR	16.00	HR	$5.00	$80.00
3900 WATERTRUCK	16.00	HR	$61.11	$977.76
OPERATOR	16.00	HR	$45.66	$730.56
420 E BACKHOE W/ HAMMER	16.00	HR	$72.13	$1,154.09
OPERATOR	16.00	HR	$45.66	$730.56
F-250 PICKUP	16.00	HR	$18.16	$290.61
GRADE FOREMAN	16.00	HR	$49.50	$792.00
HAUL/DISPOSE CONCRETE	4.00	LOAD	$684.45	$2,737.80
SUPER 16	8.00	HR	$92.23	$737.80
DUMP FEES (TRASH) (A Estimate)	4.00	LOAD	$500.00	$2,000.00
35 - 35 - REMOVE EXISTING BUS BAY AND SHELTER PAD CONCRETE	**1,206.00**	**SF**	**$7.56**	**$9,117.75**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$3.03	$4.12	$0.21	$0.20	$0.00	$0.00	$0.00
Total:	$3,658.24	$4,969.99	$250.00	$239.52	$0.00	$0.00	$0.00

REMOVE VALLEY GUTTER AND APRON	1,206.00	SF	$7.56	$9,117.75
SAWCUT VALLEY GUTTER (A Estimate)	2.00	EACH	$119.76	$239.52
REM/LD VALLEY GUTTER	1,206.00	SF	$6.39	$7,705.98
REMOVE/LD S/W, DW (603.00 SF/DY, 2.00 DY)	1,206.00	SF	$6.39	$7,705.98
950H LOADER	16.00	HR	$101.58	$1,625.28
OPERATOR	16.00	HR	$45.66	$730.56
LABOR	16.00	HR	$42.16	$674.56
3900 WATERTRUCK	16.00	HR	$61.11	$977.76
OPERATOR	16.00	HR	$45.66	$730.56
420 E BACKHOE W/ HAMMER	16.00	HR	$72.13	$1,154.09
OPERATOR	16.00	HR	$45.66	$730.56
F-250 PICKUP	16.00	HR	$18.16	$290.61
GRADE FOREMAN	16.00	HR	$49.50	$792.00
HAUL/DISPOSE CONCRETE	5.00	LOAD	$234.45	$1,172.25
SUPER 16	10.00	HR	$92.23	$922.25
DUMP FEES (CONCRETE) (A Estimate)	5.00	LOAD	$50.00	$250.00
36 - 36 - REMOVE EXISTING CONCRETE VALLEY GUTTER	**391.00**	**SF**	**$7.35**	**$2,874.43**

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost

(Item 36 - 36 - REMOVE EXISTING CONCRETE VALLEY GUTTER continued)

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$2.34	$3.53	$0.26	$1.23	$0.00	$0.00	$0.00
Total:	$914.56	$1,380.83	$100.00	$479.04	$0.00	$0.00	$0.00

D	REMOVE VALLEY GUTTER AND APRON	391.00	SF	$7.35	$2,874.43
S	SAWCUT VALLEY GUTTER (A Estimate)	4.00	EACH	$119.76	$479.04
D	REM/LD VALLEY GUTTER	391.00	SF	$4.93	$1,926.49
	REMOVE/LD S/W, DW (782.00 SF/DY, 0.50 DY)	391.00	SF	$4.93	$1,926.49
	950H LOADER	4.00	HR	$101.58	$406.32
	OPERATOR	4.00	HR	$45.66	$182.64
	LABOR	4.00	HR	$42.16	$168.64
	3900 WATERTRUCK	4.00	HR	$61.11	$244.44
	OPERATOR	4.00	HR	$45.66	$182.64
	420 E BACKHOE W/ HAMMER	4.00	HR	$72.13	$288.52
	OPERATOR	4.00	HR	$45.66	$182.64
	F-250 PICKUP	4.00	HR	$18.16	$72.65
	GRADE FOREMAN	4.00	HR	$49.50	$198.00
D	HAUL/DISPOSE CONCRETE	2.00	LOAD	$234.45	$468.90
	SUPER 16	4.00	HR	$92.23	$368.90
	DUMP FEES (CONCRETE) (A Estimate)	2.00	LOAD	$50.00	$100.00
S	**37 - 37 - REMOVE AND REINSTALL SIGN (National Barricade Company)**	**1.00**	**EACH**	**$350.00**	**$350.00**
S	**38 - 38 - UNIFORMED OFF-DUTY LAW ENFORCEMENT OFFICER (A Estimate)**	**240.00**	**HR**	**$75.00**	**$18,000.00**
S	**39 - 39 - LANDSCAPE ESTABLISHMENT (90 DAYS) (CD Development)**	**1.00**	**LS**	**$6,000.00**	**$6,000.00**
S	**40 - 40 - SHRUB – 5 GAL, GROUNDCOVER ACCENT (BUSH MORNING GLORY) (CD Development)**	**174.00**	**EACH**	**$30.00**	**$5,220.00**
S	**41 - 41 - TREE – 48 IN BOX, 3 IN CAL MIN (CD Development)**	**16.00**	**EACH**	**$1,450.00**	**$23,200.00**
D	**42 - 42 - DECOMPOSED GRANITE, 1 ¼ IN SCREENED, 2.5" THICK (MATCH EXISTING COLOR)**	**7,800.00**	**SF**	**$1.40**	**$10,886.50**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$0.27	$0.12	$0.00	$1.00	$0.00	$0.00	$0.00
Total:	$2,138.40	$948.10	$0.00	$7,800.00	$0.00	$0.00	$0.00

D	DECOMPOSED GRANITE, 1 ¼ IN SCREENED, 2.5" THICK (MATCH EXISTING COLOR)	7,800.00	SF	$1.40	$10,886.50
D	FINE GRADE DG 1 1/4"	7,800.00	SF	$0.40	$3,086.50
	FINE GRADE DG (7,800.00 SF/DY, 1.00 DY)	7,800.00	SF	$0.40	$3,086.50
	F-250 PICKUP	8.00	HR	$18.16	$145.30
	GRADE FOREMAN	8.00	HR	$49.50	$396.00
	414E SKIP LOADER	8.00	HR	$39.24	$313.92
	OPERATOR	8.00	HR	$45.66	$365.28
	3900 WATERTRUCK	8.00	HR	$61.11	$488.88
	OPERATOR	8.00	HR	$45.66	$365.28
	LABOR	8.00	HR	$42.16	$337.28
	LABOR [2]	8.00	HR	$42.16	$674.56
S	DECOMPOSED GRANITE, 1 ¼ IN SCREENED, 2.5" THICK (MATCH EXISTING COLOR) (CD Development)	7,800.00	SF	$1.00	$7,800.00

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost
S 43 - 43 - 4 IN IRRIGATION PIPE SLEEVE (SCH. 40 PVC) (CD Development)	600.00	LF	$57.00	$34,200.00
S 44 - 44 - PVC IRRIGATION PIPE ¾ IN (SCH.40 PVC) (CD Development)	1,400.00	LF	$3.00	$4,200.00
S 45 - 45 - PVC IRRIGATION PIPE 1 IN (SCH. 40 PVC) (CD Development)	450.00	LF	$3.00	$1,350.00
S 46 - 46 - PVC IRRIGATION PIPE 1.5" IN (SCH. 40 PVC) (CD Development)	100.00	LF	$10.00	$1,000.00
S 47 - 47 - PRESSURE REGULATOR (SENNIGER 30 PSI) (CD Development)	2.00	EACH	$300.00	$600.00
S 48 - 48 - CONTROLLER, AUTOMATIC (6 STA) (HUNTER XCH BATTERY) (CD Development)	1.00	EACH	$6,000.00	$6,000.00
S 49 - 49 - BALL VALVE 1.5" BRASS (CD Development)	2.00	EACH	$500.00	$1,000.00
S 50 - 50 - 1 IN REMOTE CONTROL VALVE, ELECTRIC (HUNTER ICV SERIES) (CD Development)	2.00	EACH	$500.00	$1,000.00
S 51 - 51 - FLUSH CAP ASSEMBLY (1/2") (CD Development)	8.00	EACH	$50.00	$400.00
S 52 - 52 - SINGLE OUTLET EMITTER ASSEMBLY (CD Development)	174.00	EACH	$12.00	$2,088.00
S 53 - 53 - MULTI OUTLET EMITTER ASSEMBLY (6 PORT) (CD Development)	32.00	EACH	$60.00	$1,920.00
S 54 - 54 - REMOVE EXISTING PAVEMENT MARKINGS (Pavement Marking Inc.)	1.00	LS	$4,500.00	$4,500.00
S 55 - 55 - 4 IN WHITE TRAFFIC PAINT STRIPE (Pavement Marking Inc.)	10,785.00	LF	$0.80	$8,628.00
S 56 - 56 - 4 IN WHITE THERMOPLASTIC TRAFFIC STRIPE (Pavement Marking Inc.)	3,387.00	LF	$0.64	$2,167.68
S 57 - 57 - 4 IN YELLOW TRAFFIC PAINT STRIPE (Pavement Marking Inc.)	4,305.00	LF	$0.90	$3,874.50
S 58 - 58 - PREFORMED SYMBOL BIKE LANE MARKING SET (Pavement Marking Inc.)	6.00	EACH	$245.00	$1,470.00
S 59 - 59 - THERMOPLASTIC/PREFORMED SYMBOL LEFT TURN ARROW (Pavement Marking Inc.)	4.00	EACH	$350.00	$1,400.00
S 60 - 60 - THERMOPLASTIC/PREFORMED SYMBOL RIGHT TURN ARROW (Pavement Marking Inc.)	2.00	EACH	$195.00	$390.00
S 61 - 61 - PAVEMENT MARKER, RAISED TYPE G (Pavement Marking Inc.)	150.00	EACH	$3.50	$525.00
S 62 - 62 - PERFORATED SIGN POST (National Barricade Company)	14.00	LF	$25.00	$350.00
S 63 - 63 - PERFORATED SIGN POST FOUNDATION (COMPLETE) (National Barricade Company)	2.00	EACH	$175.00	$350.00
S 64 - 64 - REPLACE EXISTING NO.9 PULL BOX LID WITH TORSION ASSIST SPRING LID. (Roadway Electric LLC.)	2.00	EACH	$3,169.00	$6,338.00
S 65 - 65 - APS LIGHTING PULL BOX (COTRACTOR SUPPLIED AND INSTALLED) (NO. 3 ½) (SL-14A & SL-14C) (Roadway Electric LLC.)	1.00	EACH	$535.00	$535.00
S 66 - 66 - SCH. 40 PVC ELECTRICAL CONDUIT, 1 IN (BETWEEN PULL BOX & STREET LIGHT POLE) (Roadway Electric LLC.)	45.00	LF	$32.50	$1,462.50

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost
67 - 67 - SCH. 40 PVC ELECTRICAL CONDUIT, 2.5" IN (BETWEEN STREET LIGHT POLES) (Roadway Electric LLC.)	**275.00**	**LF**	**$25.00**	**$6,875.00**
68 - 68 - REMOVE AND RELOCATE EXISTING VIDEO DETECTION CAMERA AND LUMINAIRE INSTALL NEW VIDEO DETECTION CAMERA AND EXISTING LUMINAIRE ON NEW MAST ARM (Roadway Electric LLC.)	**2.00**	**EACH**	**$14,875.00**	**$29,750.00**
69 - 69 - REMOVE EXISTING VIDEO DETECTION CAMERA AND INSTALL NEW VIDEO DETECTION CAMERA AND VIDEO DETECTION CABLES (Roadway Electric LLC.)	**2.00**	**EACH**	**$14,525.00**	**$29,050.00**
70 - 70 - TRAFFIC SIGNAL (RELOCATE EXISTING SIGNAL HEAD) (Roadway Electric LLC.)	**8.00**	**EACH**	**$215.00**	**$1,720.00**
71 - 71 - INSTALL NEW PEDESTRIAN PUSH BUTTON AND PEDISTAL (Roadway Electric LLC.)	**2.00**	**EACH**	**$2,082.00**	**$4,164.00**
72 - 72 - REMOVE AND RELOCATE EXISTING PEDESTRIAN SIGNAL HEAD, PEDESTRIAN PUSH BUTTON, DETECTOR, (Roadway Electric LLC.)	**2.00**	**EACH**	**$1,815.00**	**$3,630.00**
73 - 73 - SCHEDULE 40 2" CONDUIT FOR SIGNAL IMPROVEMENTS (Roadway Electric LLC.)	**100.00**	**LF**	**$26.00**	**$2,600.00**
74 - 74 - SCHEDULE 40 4" CONDUIT FOR SIGNAL IMPROVEMENTS (Roadway Electric LLC.)	**320.00**	**LF**	**$88.00**	**$28,160.00**
75 - 75 - INSTALL NEW NO. 7 PULL BOX FOR SIGNAL (Roadway Electric LLC.)	**1.00**	**EACH**	**$898.00**	**$898.00**
76 - 76 - FURNISH AND INSTALL NEW 55' SIGNAL MAST ARM (Roadway Electric LLC.)	**1.00**	**EACH**	**$8,315.00**	**$8,315.00**
77 - 77 - RELOCATE EXISTING SIGNAL CABLE FOR MAST ARM AND PEDESTRIAN PEDISTALS INSIDE NEW 4" CONDUIT. RE-UTILIZE EXISTING NO. 7 PULL BOX AS IDENTIFIED IN THE PLANS (Roadway Electric LLC.)	**140.00**	**LF**	**$8.50**	**$1,190.00**
78 - 78 - INSTALL NEW CCTV AXIS P5635-E MK II PAN-TILT -ZOOM (PTZ) CAMERA ON EXISTING LUMINAIRE POLE (Roadway Electric LLC.)	**1.00**	**EACH**	**$3,488.00**	**$3,488.00**
79 - 79 - DIRECTIONAL DRILL (CONDUITS RUNS FOR SIGNALS) (Roadway Electric LLC.)	**0.00**	**LF**	**$0.00**	**$0.00**
CE - 3/18/2021 5:13 PM: CHANGE QTY FROM 420 TO ZERO BASED ON ROADWAY TAKEOFF				
80 - 80 - SIGNAL CABLE (#14 CONDUCTOR 20-1 IMSA SIGNAL CABLES) (Roadway Electric LLC.)	**1,500.00**	**LF**	**$5.60**	**$8,400.00**
81 - 81 - FURNISH & INSTALL NEW SIGNAL POLE FOUNDATION, RELOCATE EXISTING SIGNAL POLE, MAST ARM, & LUMINAIRE (Roadway Electric LLC.)	**2.00**	**EACH**	**$4,600.00**	**$9,200.00**
82 - 82 - FURNISH & INSTALL STREET LIGHT POLE AND FOUNDATION PER COC UDM STD DTL SL1 AND SECTION 2.2 USE EXISTING LUMINAIRE (Roadway Electric LLC.)	**4.00**	**EACH**	**$4,165.00**	**$16,660.00**
83 - 83 - RELOCATE EXISTING STREET LIGHT POLE, MAST ARM, AND LUMINARE TO NEW FOUNDATION PER COC UDM STD DTL SL1 (Roadway Electric LLC.)	**4.00**	**EACH**	**$2,000.00**	**$8,000.00**
84 - 84 - FURNISH & INSTALL TYPE II 133 WATT LED COOPER LIGHTING MODEL NVN-AE-03-E-U-SL2-10K-4-AP (Roadway Electric LLC.)	**6.00**	**EACH**	**$500.00**	**$3,000.00**
CE - 3/18/2021 5:14 PM: CHANGE QTY FROM 6 TO 0 BASED ON ROADWAY TAKEOFF				
85 - 85 - SCHEDULE 40 2" QUAD DUCT WITH 12 AWG TRACER WIRE AND PULL TAPE. CONDUIT COLORS, 1-BLACK, 3-GRAY (Roadway Electric LLC.)	**1,016.00**	**LF**	**$46.00**	**$46,736.00**

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost
(Item 85 - 85 - SCHEDULE 40 2" QUAD DUCT WITH 12 AWG TRACER WIRE AND PULL TAPE. CONDUIT COLORS, 1-BLACK, 3-				
86 - 86 - INSTALL NEW 144 SMFO IN BLACK CONDUIT. INSTALL 12 AWG TRACER WIRE AND MULE TAPE IN ALL CONDUITS. (Roadway Electric LLC.)	**1,016.00**	**LF**	**$7.95**	**$8,077.20**
87 - 87 - INSTALL NEW 144 SMFO AND 12 AWG TRACER WIRE AND MULE TAPE IN EXISTING CONDUIT (Roadway Electric LLC.)	**2,427.00**	**LF**	**$7.95**	**$19,294.65**
87.5 - 87.5 - INSTALL NEW 144 SMFO AND 12 AWG TRACER WIRE AND MULE TAPE IN EXISTING CONDUIT (WILLIS TO GERMANN) (Roadway Electric LLC.)	**2,775.00**	**LF**	**$7.95**	**$22,061.25**
88 - 88 - FURNISH & INSTALL SPLICE ENCLOSURE (Roadway Electric LLC.)	**2.00**	**EACH**	**$1,610.00**	**$3,220.00**
89 - 89 - SCHEDULE 40 3" CONDUIT FOR ITS IMPROVEMENTS (Roadway Electric LLC.)	**38.00**	**LF**	**$160.00**	**$6,080.00**
90 - 90 - DIRECTIONAL DRILL (ITS CONDUIT RUNS) (Roadway Electric LLC.)	**0.00**	**LF**	**$0.00**	**$0.00**
CE - 3/18/2021 5:15 PM: CHANGE QTY FROM 1054 TO 0 BASED ON ROADWAY TAKEOFF				
91 - 91 - 12 PORT GATOR PATCH CABLE ASSEMBLY (Roadway Electric LLC.)	**3.00**	**EACH**	**$1,635.00**	**$4,905.00**
CE - 3/18/2021 5:16 PM: CHANGE QTY FROM 1 TO 3 BASED ON ROADWAY TAKEOFF				
92 - 92 - REMOVE EXISTING TWISTED PAIR, PROTECT IN PLACE EXISTING CONDUIT, CONDUCTORS AND FIBER OPTIC CABLE (Roadway Electric LLC.)	**908.00**	**LF**	**$0.60**	**$544.80**
93 - 93 - INSTALL ETHERWAN EX73931-OVB WITH FOUR EX-1250TSP-MB5L-A SFP AND EX41-136046 POWER SUPPLY. SALVAGE EXISTING ETHERNET SWITCH (Roadway Electric LLC.)	**2.00**	**EACH**	**$4,647.00**	**$9,294.00**
94 - 94 - ALLOWANCE: ROADWAY WORK	**1.00**	**AL**	**$0.00**	**$0.00**
95 - 95 - ALLOWANCE: CONCRETE WORK	**1.00**	**AL**	**$0.00**	**$0.00**
96 - 96 - ALLOWANCE: LANDSCAPING	**1.00**	**AL**	**$0.00**	**$0.00**
97 - 97 - ALLOWANCE: TRAFFIC SIGNAL AND COMMUNICATIONS FACILITIES	**1.00**	**AL**	**$0.00**	**$0.00**
98 - 98 - ALLOWANCE: SRP ELECTRICAL	**1.00**	**AL**	**$0.00**	**$0.00**
99 - 99 - ALLOWANCE: APS ELECTRICAL	**1.00**	**AL**	**$0.00**	**$0.00**

	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Total:	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

Description	Quantity	UM	Unit Direct Cost	Total Direct Cost

(Item 99 - 99 - ALLOWANCE: APS ELECTRICAL continued)

100 - 100 - ALLOWANCE: UTILITIES				**1.00**	**AL**	**$0.00**	**$0.00**
	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Total:	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
101 - 101 - ALLOWANCE: REMOVALS				**1.00**	**AL**	**$0.00**	**$0.00**
	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Total:	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
102 - 102 - ALLOWANCE: UNSUITIBLE SOILD				**1.00**	**AL**	**$0.00**	**$0.00**
	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Total:	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
103 - 103 - ALLOWANCE: (UNFORSEEN CONDITIONS)				**1.00**	**AL**	**$0.00**	**$0.00**
	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Total:	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
104 - 104 - TRAFFIC CONTROL				**1.00**	**LS**	**$181,861.20**	**$181,861.20**
	Labor	Equipment	Material	Subcontracted	Trucking	Miscellaneous	Plug
Unit:	$3,500.00	$0.00	$3,500.00	$174,861.20	$0.00	$0.00	$0.00
Total:	$3,500.00	$0.00	$3,500.00	$174,861.20	$0.00	$0.00	$0.00
TRAFFIC CONTROL				1.00	LS	$181,861.20	$181,861.20
BARRICADES				1.00	LS	$166,861.20	$166,861.20
BARRICADE MOBE (A Estimate)				1.00	EACH	$6,800.00	$6,800.00
NB/SB SANDBAG/FLAG/TC PLAN (A Estimate)				1.00	LS	$1,284.00	$1,284.00
NB/SB LANE SHIFTS EQUIPMENT (A Estimate)				60.00	DY	$547.80	$32,868.00
NB/SB OFF PEAK LANE DROP LABOR (A Estimate)				60.00	DY	$1,800.00	$108,000.00
SINGLE LANE SANDBAG/FLAG/TC PLAN (A Estimate)				1.00	LS	$171.20	$171.20
SINGLE LANE CLOSURE LABOR (A Estimate)				8.00	DY	$750.00	$6,000.00
SINGLE LANE CLOSURE EQUIPMENT (A Estimate)				80.00	DY	$91.10	$7,288.00
VMS BOARDS (A Estimate)				30.00	DY	$65.00	$1,950.00
MISC SERVICE (A Estimate)				1.00	LS	$2,500.00	$2,500.00
SHADOW TRUCK INTXN (A Estimate)				160.00	HR	$50.00	$8,000.00
ADA COMPLIANCE				1.00	LS	$7,000.00	$7,000.00

PLANS AND SPECIFICATIONS

ALMA SCHOOL ROAD IMPROVEMENTS II GMP DOCUMENTS

LIST OF PLANS AND SPECIFICATIONS USED IN THE FORMATION OF THE GMP

ALMA SCHOOL ROAD IMPROVEMENTS

CITY PROJECT NO. ST2004.403

CIVIL PACKAGE PLANS

DATED: MARCH 5, 2021

SEALED SUBMITTAL

PREPARED BY: WOOD ENVIRONMENT & INFRASTRUCTURE

SHEETS 1-21

ALMA SCHOOL ROAD IMPROVEMENTS

PROJECT NO. ST2004.401

LANDSCAPE PACKAGE PLANS

PREPARED BY: HARRINGTON PLANNING + DESIGN (HP+D)

DATED: JANUARY 15, 2021

SEALED SUBMITTAL

SHEETS 22-29

ALMA SCHOOL ROAD IMPROVEMENTS

PECOS ROAD TO FAIRVIEW ROAD

PROJECT NO. ST2004

FINAL TECHNICAL SPECIFICATIONS

PREPARED BY: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS

DATED: JANUARY 15, 2021

PAGES: 88

CLARIFICATIONS AND ASSUMPTIONS

ALMA SCHOOL ROAD IMPROVEMENTS CMAR GMP DOCUMENTS

CLARIFICATIONS & ASSUMPTIONS

GENERAL CLARIFICATIONS

1. Price assumes no import of dirt material for landscaping or roadway construction.
2. Traffic control:

   Assumes shifting both northbound and southbound traffic outside to the bike lane for the duration of construction. Off peak single lane closure will be allowed both northbound and southbound (9AM – 4PM).

   Outside single lane closures will be permitted for electrical work, 24 hour setups allowed after moratorium.

   Inside single lane closures will be permitted for landscape work, 24 hour setups allowed after moratorium.
3. Price is based on quantities in provided bid schedule. These quantities were derived from final plans. Additional work not shown on the final plans has been included/excluded based on written or verbal direction, finalized in 03/22/2021 meeting. Additional quantities or items not identified in the bid schedule to be paid from Owner's Allowance.
4. Full contract dollar amount to be insured, including allowances. Reimbursement for insurance costs above those listed in GMP Table, item D2, will be paid in full out of Owner's Allowance at start of project.
5. Items reimbursed under Owner's Allowance will have the contractors fee (8%), tax (65% of 7.8% = 5.07%), and Bond (1%) added to the direct cost, summed in the same manner as the GMP table. The cost of insurance will not be added to the direct cost of items reimbursed under the Owner's Allowance, as it is paid per General Clarification #4 above.
6. Landscape restoration required for contract work shall be paid out of allowance.
7. Bid item allowances (Bid Items 94-103) removed per City direction. Owner's Allowance items added after markups.
8. General Conditions bid at $0.00 for work completed before July 31, 2021. Should work extend beyond July 31, 2021 for reasons outside of contractors control, general conditions to be negotiated with City.

BID ITEMS

Bid Item 0.5 – Quality Control. Added item necessary to completion of construction.

Bid Item 4 – Clearing and Grubbing. Limits to include entire area of existing median as well as outside widening footprint.

Bid Item 5 – Remove Tree, Diameter >12 In. All trees removed to be paid under this item regardless of caliper size.

Bid Item 6 – Subgrade Preparation. Includes MAG specification scarify/re-compact, roadway ex, job water and potholing. Excludes over-excavation and/or unsuitable material mitigation. Quantity increased to include 8' minimum widths to allow proper grading/paving/compaction equipment.

Bid Item 7 – Aggregate Base (12"). Quantity increased to include 8' minimum widths to allow proper grading/paving/compaction equipment.

Bid Item 8 – Asphaltic Concrete (2in Surface Course). Quantity increased to include 8' minimum widths to allow proper grading/paving/compaction equipment. Quantity includes the area of 2' milling.

Bid Item 9 – Asphaltic Concrete (3in Base Course). Quantity increased to include 8' minimum widths to allow proper grading/paving/compaction equipment.

Bid Item 10 – Bituminous Tack Coat. Quantity increased to include 8' minimum widths to allow proper grading/paving/compaction equipment. Quantity includes the area of 2' milling.

Bid Item 11.5 – Crack Seal. Added item necessary to completion of construction. Quantity estimate only. Actual quantities to be paid.

Bid Item 22 – Adjust Manhole Frame & Cover. Quantity includes all manholes including those in the median. Polymer adjustment rings, frame, and cover to be provided by City if required.

Bid Item 43 – 2 In Irrigation Sleeve. Item bid as 4" per City standard, to be bored.

Bid Item 79 – Directional Drill (Conduit Runs For Signals). Item not bid. Directional drilling included in necessary conduit items.

Bid Item 87.5 – Install new 144 SMFO. – Added item per City direction. Intended to cover distance of fiber pull from Willis Rd to Germann Rd.

Bid Item 90 – Directional Drill (ITS Conduit Runs). Item not bid. Directional drilling included in necessary conduit items.

Owners Allowance. – Estimate, 10% of direct costs.

Allowance – Unsuitable Subgrade. – Cost to cement treat all subgrade within project limits (3059 SY), including two cement treat mobilizations and regrading of cement treat material.

Allowance – Traffic Signals. – Cost to provide new signal poles (2 EA), 55' mast arms (1 EA), 20' mast arms (2 EA), mounting assembly's (8 EA), signal faces (8 EA), luminaires (2 EA) and conductor. Amount requested by City as an option to provide new material in lieu of relocate.

CHANDLER arizona
Community of Innovation

City Council Memorandum **Public Works & Utilities** **Memo No.** UA21-050

Date: April 19, 2021
To: Mayor and Council
Thru: Joshua H. Wright, Acting City Manager
Debra Stapleton, Assistant City Manager
John Knudson, Public Works and Utilities Director
From: Paul Roy, Utility Operations Manager
Subject: Agreement No. 4302, with KUV Consultants, LLC, for a Security and Emergency Preparedness Program

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Proposed Motion:

Move City Council approve Agreement No. 4302, with KUV Consultants, LLC, for a security and emergency preparedness program, in an amount not to exceed $550,000, for a five-year term, July 1, 2021, through June 30, 2026.

Background/Discussion:

The Public Works and Utilities Department serves over 275,000 residents with clean water, wastewater collection and treatment, and reclaimed water services. In 2019, the City was required by the Environmental Protection Agency (EPA) to develop and implement a Risk and Resiliency Study for water production and distribution to review all systems in order to ensure the safety of all City water customers. Ultimately, the City was required to also develop and implement an Emergency Operations Plan (EOP) for the water supply systems. KUV Consultants, LLC, was the selected vendor to study the City's water supply systems and prepare the required documents. All studies and related EOP documents were submitted to the EPA as required and certified within all time constraints.

A key recommendation of the water EOP is to develop benchtop and active exercises in responding to water events that may compromise the integrity of the water system. The Public Works and Utilities Department is also in need of a system that can provide the information to City staff within times of crisis and can also be used to update and maintain the EOP while providing critical training to new City staff. Staff solicited a proposal from KUV Consultants, LLC, to provide the necessary systems, training, and benchtop simulations to keep all Utility staff ready to respond to any situation.

The City staff have also determined that the wastewater collection and treatment systems are also in need of an updated EOP and have included those services in the agreement. With their extensive knowledge of the City's water and wastewater infrastructure, KUV Consultants will provide all the necessary information and services for optimum response to crisis events.

The scope of services includes development of the Emergency Management Toolkit (EMT) and the Risk/Resiliency Assessment and Emergency Response Plan, EMT annual updates, as well as annual refresher training, inspections, and simulation exercises. The term of the agreement is July 1, 2021, through June 30, 2026.

Evaluation:
In 2019, KUV Consultants, LLC, was selected to perform the Risk and Resiliency Assessment and Emergency Response Plan required by the EPA. As a result of this experience, KUV Consultants, LLC, is uniquely qualified to create and conduct the security and emergency preparedness program.

Staff recommends the direct selection of KUV Consultants, LLC.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
605.3830.5219.0.0	Water Operating	Other Professional Services	$110,000	N
605.3860.5219.0.0	Water Operating	Other Professional Services	$110,000	N
615.3960.5219.0.0	Wastewater Operating	Other Professional Services	$110,000	N
615.3970.5219.0.0	Wastewater Operating	Other Professional Services	$110,000	N
605.3800.5219.0.0	Water Operating	Other Professional Services	$110,000	N

Attachments

Agreement - KUV Consultants

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City Clerk Document No. _____

City Council Meeting Date: April 22, 2021

CITY OF CHANDLER SERVICES AGREEMENT
SECURITY AND EMERGENCY PREPAREDNESS PROGRAM
CITY OF CHANDLER AGREEMENT NO. 4302

THIS AGREEMENT (Agreement) is made and entered into by and between the City of Chandler, an Arizona municipal corporation (City), and KUV Consultants, LLC, an Arizona limited liability corporation (Contractor), (City and Contractor may individually be referred to as Party and collectively referred to as Parties) and made _____, 2021 (Effective Date).

RECITALS

A. City proposes to conduct an annual security and emergency preparedness program as more fully described in Exhibit A, which is attached to and made a part of this Agreement by this reference.

B. Contractor is ready, willing, and able to provide the services described in Exhibit A for the compensation and fees set forth and as described in Exhibit B, which is attached to and made a part of this Agreement by this reference.

C. City desires to contract with the Contractor to provide these services under the terms and conditions set forth in this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the premises and the mutual promises contained in this Agreement, City and Contractor agree as follows:

SECTION I: DEFINITIONS

For purposes of this Agreement, the following definitions apply:
Agreement means the legal agreement executed between the City and the Contractor
City means the City of Chandler, Arizona
Contractor means the individual, partnership, or corporation named in the Agreement
Days means calendar days
May, Should means something that is not mandatory but permissible
Shall, Will, Must means a mandatory requirement

SECTION II: CONTRACTOR'S SERVICES

Contractor must perform the services described in Exhibit A to the City's satisfaction within the

terms and conditions of this Agreement and within the care and skill that a person who provides similar services in Chandler, Arizona exercises under similar conditions. All work or services furnished by Contractor under this Agreement must be performed in a skilled and workmanlike manner. Unless authorized by the City in writing, all fixtures, furnishings, and equipment furnished by Contractor as part of the work or services under this Agreement must be new, or the latest model, and of the most suitable grade and quality for the intended purpose of the work or service.

SECTION III: PERIOD OF SERVICE

Contractor must perform the services described in Exhibit A for the term of this Agreement.

The term of the Agreement is five years, and begins on July 1, 2021 and ends on June 30, 2026, unless sooner terminated in accordance with the provisions of this Agreement. The City reserves the right, at its sole discretion, to extend the Agreement for up to 60 days beyond the expiration of any extension term.

SECTION IV: PAYMENT OF COMPENSATION AND FEES

Unless amended in writing by the Parties, Contractor's compensation and fees as more fully described in Exhibit B for performance of the services approved and accepted by the City under this Agreement must not exceed $550,000. Contractor must submit requests for payment for services approved and accepted during the previous billing period and must include, as applicable, detailed invoices and receipts, a narrative description of the tasks accomplished during the billing period, a list of any deliverables submitted, and any subcontractor's or supplier's actual requests for payment plus similar narrative and listing of their work. Payment for those services negotiated as a lump sum will be made in accordance with the percentage of the work completed during the preceding billing period. Services negotiated as a not-to-exceed fee will be paid in accordance with the work completed on the service during the preceding month. All requests for payment must be submitted to the City for review and approval. The City will make payment for approved and accepted services within 30 days of the City's receipt of the request for payment. Contractor bears all responsibility and liability for any and all tax obligations that result from Contractor's performance under this Agreement.

SECTION V: GENERAL CONDITIONS

5.1 Records/Audit. Records of the Contractor's direct personnel payroll, reimbursable expenses pertaining to this Agreement and records of accounts between the City and Contractor must be kept on the basis of generally accepted accounting principles and must be made available to the City and its auditors for up to three years following the City's final acceptance of the services under this Agreement. The City, its authorized representative, or any federal agency, reserves the right to audit Contractor's records to verify the accuracy and appropriateness of all cost and pricing data, including data used to negotiate this Agreement and any amendments. The City reserves the right to decrease the total amount of Agreement price or payments made under this Agreement or request reimbursement from the Contractor following final contract payment on this Agreement if, upon audit of the Contractor's records, the audit discloses the Contractor has provided false, misleading, or inaccurate cost and pricing data. The Contractor will include a similar provision in all of its contracts with subcontractors providing services under the Agreement Documents to ensure

that the City, its authorized representative, or the appropriate federal agency, has access to the subcontractors' records to verify the accuracy of all cost and pricing data. The City reserves the right to decrease Contract price or payments made on this Agreement or request reimbursement from the Contractor following final payment on this Agreement if the above provision is not included in subcontractor agreements, and one or more subcontractors refuse to allow the City to audit their records to verify the accuracy and appropriateness of all cost and pricing data. If, following an audit of this Agreement, the audit discloses the Contractor has provided false, misleading, or inaccurate cost and pricing data, and the cost discrepancies exceed 1% of the total Agreement billings, the Contractor will be liable for reimbursement of the reasonable, actual cost of the audit.

5.2 Alteration in Character of Work. Whenever an alteration in the character of work results in a substantial change in this Agreement, thereby materially increasing or decreasing the scope of services, cost of performance, or Project schedule, the work will be performed as directed by the City. However, before any modified work is started, a written amendment must be approved and executed by the City and the Contractor. Such amendment must not be effective until approved by the City. Additions to, modifications, or deletions from this Agreement as provided herein may be made, and the compensation to be paid to the Contractor may accordingly be adjusted by mutual agreement of the Parties. It is distinctly understood and agreed that no claim for extra work done or materials furnished by the Contractor will be allowed by the City except as provided herein, nor must the Contractor do any work or furnish any materials not covered by this Agreement unless such work is first authorized in writing. Any such work or materials furnished by the Contractor without prior written authorization will be at Contractor's own risk, cost, and expense, and Contractor hereby agrees that without written authorization Contractor will make no claim for compensation for such work or materials furnished.

5.3 Termination for Convenience. The City and the Contractor hereby agree to the full performance of the covenants contained herein, except that the City reserves the right, at its discretion and without cause, to terminate or abandon any service provided for in this Agreement, or abandon any portion of the Project for which services have been performed by the Contractor. In the event the City abandons or suspends the services, or any part of the services as provided in this Agreement, the City will notify the Contractor in writing and immediately after receiving such notice, the Contractor must discontinue advancing the work specified under this Agreement. Upon such termination, abandonment, or suspension, the Contractor must deliver to the City all drawings, plans, specifications, special provisions, estimates and other work entirely or partially completed, together with all unused materials supplied by the City. The Contractor must appraise the work Contractor has completed and submit Contractor's appraisal to the City for evaluation. The City may inspect the Contractor's work to appraise the work completed. The Contractor will receive compensation in full for services performed to the date of such termination. The fee shall be paid in accordance with Section IV of this Agreement, and as mutually agreed upon by the Contractor and the City. If there is no mutual agreement on payment, the final determination will be made in accordance with the Disputes provision in this Agreement. However, in no event may the payment exceed the payment set forth in this Agreement nor as amended in accordance with Alteration in Character of Work. The City will make the final payment within 60 days after the Contractor has delivered the last of the partially completed items and the Parties agree on the final payment. If the City is found to have improperly terminated the Agreement for cause or default, the termination will be converted to a termination for convenience in accordance with

the provisions of this Agreement.

5.4 Termination for Cause. The City may terminate this Agreement for Cause upon the occurrence of any one or more of the following events: in the event that (a) the Contractor fails to perform pursuant to the terms of this Agreement, (b) the Contractor is adjudged a bankrupt or insolvent, (c) the Contractor makes a general assignment for the benefit of creditors, (d) a trustee or receiver is appointed for Contractor or for any of Contractor's property (e) the Contractor files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or similar laws, (f) the Contractor disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction, or (g) the Contractor fails to cure default within the time requested. Where Agreement has been so terminated by City, the termination will not affect any rights of City against Contractor then existing or which may thereafter accrue.

5.5 Indemnification. The Contractor (Indemnitor) must indemnify, defend, save and hold harmless the City and its officers, officials, agents and employees (Indemnitee) from any and all claims, actions, liabilities, damages, losses or expenses (including court costs, attorneys' fees and costs of claim processing, investigation and litigation) (Claims) caused or alleged to be caused, in whole or in part, by the wrongful, negligent or willful acts, or errors or omissions of the Contractor or any of its owners, officers, directors, agents, employees, or subcontractors in connection with this Agreement. This indemnity includes any claim or amount arising out of or recovered under workers' compensation law or on account of the failure of the Contractor to conform to any federal, state or local law, statute, ordinance, rule, regulation or court decree. The Contractor must indemnify Indemnitee from and against any and all Claims, except those arising solely from Indemnitee's own negligent or willful acts or omissions. The Contractor is responsible for primary loss investigation, defense and judgment costs where this indemnification applies. In consideration of the award of this Agreement, the Contractor agrees to waive all rights of subrogation against Indemnitee for losses arising from or related to this Agreement. The obligations of the Contractor under this provision survive the termination or expiration of this Agreement.

5.6 Insurance Requirements. Contractor must procure insurance under the terms and conditions and for the amounts of coverage set forth in Exhibit C against claims that may arise from or relate to performance of the work under this Agreement by Contractor and its agents, representatives, employees, and subcontractors. Contractor and any subcontractors must maintain this insurance until all of their obligations have been discharged, including any warranty periods under this Agreement. These insurance requirements are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement. The City in no way warrants that the minimum limits stated in Exhibit C are sufficient to protect the Contractor from liabilities that might arise out of the performance of the work under this Agreement by the Contractor, the Contractor's agents, representatives, employees, or subcontractors. Contractor is free to purchase such additional insurance as may be determined necessary.

5.7 Cooperation and Further Documentation. The Contractor agrees to provide the City such other duly executed documents as may be reasonably requested by the City to implement the intent of this Agreement.

5.8 Notices. Unless otherwise provided, notice under this Agreement must be in writing and

will be deemed to have been duly given and received either (a) on the date of service if personally served on the party to whom notice is to be given, or (b) on the date notice is sent if by electronic mail, or (c) on the third day after the date of the postmark of deposit by first class United States mail, registered or certified, postage prepaid and properly addressed as follows:

For the City	**For the Contractor**
Name: Christina Pryor	Name: Kal Raman
Title: Purchasing Manager	Title: Principal Consultant
Address: 175 S. Arizona Ave.	Address: P.O. Box 10790
Chandler, AZ 85249	Glendale, AZ 85318
Phone: (480) 782-2403	Phone: (623) 521-5265
Email: christina.pryor@chandleraz.gov	Email: kraman@kuv.com

5.9 Successors and Assigns. City and Contractor each bind itself, its partners, successors, assigns, and legal representatives to the other party to this Agreement and to the partners, successors, assigns, and legal representatives of such other party in respect to all covenants of this Agreement. Neither the City nor the Contractor may assign, sublet, or transfer its interest in this Agreement without the written consent of the other party. In no event may any contractual relation be created between any third party and the City.

5.10 Disputes. In any dispute arising out of an interpretation of this Agreement or the duties required not disposed of by agreement between the Contractor and the City, the final determination at the administrative level will be made by the City Purchasing and Materials Manager.

5.11 Completeness and Accuracy of Contractor's Work. The Contractor must be responsible for the completeness and accuracy of Contractor's services, data, and other work prepared or compiled under Contractor's obligation under this Agreement and must correct, at Contractor's expense, all willful or negligent errors, omissions, or acts that may be discovered. The fact that the City has accepted or approved the Contractor's work will in no way relieve the Contractor of any of Contractor's responsibilities.

5.12 Withholding Payment. The City reserves the right to withhold funds from the Contractor's payments up to the amount equal to the claims the City may have against the Contractor until such time that a settlement on those claims has been reached.

5.13 City's Right of Cancellation. The Parties acknowledge that this Agreement is subject to cancellation by the City under the provisions of Section 38-511, Arizona Revised Statutes (A.R.S.).

5.14 Independent Contractor. For this Agreement the Contractor constitutes an independent contractor. Any provisions in this Agreement that may appear to give the City the right to direct the Contractor as to the details of accomplishing the work or to exercise a measure of control over the work means that the Contractor must follow the wishes of the City as to the results of the work only. These results must comply with all applicable laws and ordinances.

5.15 Project Staffing. Prior to the start of any work under this Agreement, the Contractor must assign to the City the key personnel that will be involved in performing services prescribed in

the Agreement. The City may acknowledge its acceptance of such personnel to perform services under this Agreement. At any time hereafter that the Contractor desires to change key personnel while performing under the Agreement, the Contractor must submit the qualifications of the new personnel to the City for prior approval. The Contractor will maintain an adequate and competent staff of qualified persons, as may be determined by the City, throughout the performance of this Agreement to ensure acceptable and timely completion of the Scope of Services. If the City objects, with reasonable cause, to any of the Contractor's staff, the Contractor must take prompt corrective action acceptable to the City and, if required, remove such personnel from the Project and replace with new personnel agreed to by the City.

5.16 Subcontractors. Prior to beginning the work, the Contractor must furnish the City for approval the names of subcontractors to be used under this Agreement. Any subsequent changes are subject to the City's written prior approval.

5.17 Force Majeure. If either party is delayed or prevented from the performance of any act required under this Agreement by reason of acts of God or other cause beyond the control and without fault of the Party (financial inability excepted), performance of that act may be excused, but only for the period of the delay, if the Party provides written notice to the other Party within ten days of such act. The time for performance of the act may be extended for a period equivalent to the period of delay from the date written notice is received by the other Party.

5.18 Compliance with Laws. Contractor understands, acknowledges, and agrees to comply with the Americans with Disabilities Act, the Immigration Reform and Control Act of 1986 and the Drug Free Workplace Act of 1989. All services performed by Contractor must also comply with all applicable City of Chandler codes, ordinances, and requirements. Contractor agrees to permit the City to verify Contractor's compliance.

5.19 No Israel Boycott. By entering into this Agreement, Contractor certifies that Contractor is not currently engaged in, and agrees for the duration of the Agreement, not to engage in a boycott of Israel as defined by state statute.

5.20 Legal Worker Requirements. A.R.S. § 41-4401 prohibits the City from awarding a contract to any contractor who fails, or whose subcontractors fail, to comply with A.R.S. § 23-214(A). Therefore, Contractor agrees Contractor and each subcontractor it uses warrants their compliance with all federal immigration laws and regulations that relate to their employees and their compliance with§ 23-214, subsection A. A breach of this warranty will be deemed a material breach of the Agreement and may be subject to penalties up to and including termination of the Agreement. City retains the legal right to inspect the papers of any Contractor's or subcontractor's employee who provides services under this Agreement to ensure that the Contractor and subcontractors comply with the warranty under this provision.

5.21 Lawful Presence Requirement. A.RS. §§ 1-501 and 1-502 prohibit the City from awarding a contract to any natural person who cannot establish that such person is lawfully present in the United States. To establish lawful presence, a person must produce qualifying identification and sign a City-provided affidavit affirming that the identification provided is genuine. This requirement will be imposed at the time of contract award. This requirement does not apply

to business organizations such as corporations, partnerships, or limited liability companies.

5.22 Covenant Against Contingent Fees. Contractor warrants that no person has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, and that no member of the Chandler City Council, or any City employee has any interest, financially, or otherwise, in Contractor's firm. For breach or violation of this warrant, the City may annul this Agreement without liability or, at its discretion, to deduct from the Agreement price or consideration, the full amount of such commission, percentage, brokerage, or contingent fee.

5.23 Non-Waiver Provision. The failure of either Party to enforce any of the provisions of this Agreement or to require performance of the other Party of any of the provisions hereof must not be construed to be a waiver of such provisions, nor must it affect the validity of this Agreement or any part thereof, or the right of either Party to thereafter enforce each and every provision.

5.24 Disclosure of Information Adverse to the City's Interests. To evaluate and avoid potential conflicts of interest, the Contractor must provide written notice to the City, as set forth in this Section, of any work or services performed by the Contractor for third parties that may involve or be associated with any real property or personal property owned or leased by the City. Such notice must be given seven business days prior to commencement of the services by the Contractor for a third party, or seven business days prior to an adverse action as defined below. Written notice and disclosure must be sent to the City's Purchasing and Materials Manager. An adverse action under this Agreement includes, but is not limited to: (a) using data as defined in the Agreement acquired in connection with this Agreement to assist a third party in pursuing administrative or judicial action against the City; or (b) testifying or providing evidence on behalf of any person in connection with an administrative or judicial action against the City; or (c) using data to produce income for the Contractor or its employees independently of performing the services under this Agreement, without the prior written consent of the City. Contractor represents that except for those persons, entities, and projects identified to the City, the services performed by the Contractor under this Agreement are not expected to create an interest with any person, entity, or third party project that is or may be adverse to the City's interests. Contractor's failure to provide a written notice and disclosure of the information as set forth in this Section constitute a material breach of this Agreement.

5.25 Data Confidentiality and Data Security. As used in the Agreement, data means all information, whether written or verbal, including plans, photographs, studies, investigations, audits, analyses, samples, reports, calculations, internal memos, meeting minutes, data field notes, work product, proposals, correspondence and any other similar documents or information prepared by, obtained by, or transmitted to the Contractor or its subcontractors in the performance of this Agreement. The Parties agree that all data, regardless of form, including originals, images, and reproductions, prepared by, obtained by, or transmitted to the Contractor or its subcontractors in connection with the Contractor's or its subcontractor's performance of this Agreement is confidential and proprietary information belonging to the City. Except as specifically provided in this Agreement, Contractor or its subcontractors must not divulge data to any third party without the City's prior written consent. Contractor or its subcontractors must not use the data for any purposes except to perform the services required under this Agreement. These prohibitions do not apply to the following data provided to the Contractor or its subcontractors

have first given the required notice to the City: (a) data which was known to the Contractor or its subcontractors prior to its performance under this Agreement unless such data was acquired in connection with work performed for the City; or (b) data which was acquired by the Contractor or its subcontractors in its performance under this Agreement and which was disclosed to the Contractor or its subcontractors by a third party, who to the best of the Contractor's or its subcontractors knowledge and belief, had the legal right to make such disclosure and the Contractor or its subcontractors are not otherwise required to hold such data in confidence; or (c) data which is required to be disclosed by virtue of law, regulation, or court order, to which the Contractor or its subcontractors are subject. In the event the Contractor or its subcontractors are required or requested to disclose data to a third party, or any other information to which the Contractor or its subcontractors became privy as a result of any other contract with the City, the Contractor must first notify the City as set forth in this Section of the request or demand for the data. The Contractor or its subcontractors must give the City sufficient facts so that the City can be given an opportunity to first give its consent or take such action that the City may deem appropriate to protect such data or other information from disclosure. Unless prohibited by law, within ten calendar days after completion or termination of services under this Agreement, the Contractor or its subcontractors must promptly deliver, as set forth in this Section, a copy of all data to the City. All data must continue to be subject to the confidentiality agreements of this Agreement. Contractor or its subcontractors assume all liability to maintain the confidentiality of the data in its possession and agrees to compensate the City if any of the provisions of this Section are violated by the Contractor, its employees, agents or subcontractors. Solely for the purposes of seeking injunctive relief, it is agreed that a breach of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. Contractor agrees that the requirements of this Section must be incorporated into all subcontracts entered into by Contractor. A violation of this Section may result in immediate termination of this Agreement without notice.

5.26 Personal Identifying Information-Data Security. Personal identifying information, financial account information, or restricted City information, whether electronic format or hard copy, must be secured and protected at all times by Contractor and any of its subcontractors. At a minimum, Contractor must encrypt or password-protect electronic files. This includes data saved to laptop computers, computerized devices, or removable storage devices. When personal identifying information, financial account information, or restricted City information, regardless of its format, is no longer necessary, the information must be redacted or destroyed through appropriate and secure methods that ensure the information cannot be viewed, accessed, or reconstructed. In the event that data collected or obtained by Contractor or its subcontractors in connection with this Agreement is believed to have been compromised, Contractor or its subcontractors must immediately notify the City contact. Contractor agrees to reimburse the City for any costs incurred by the City to investigate potential breaches of this data and, where applicable, the cost of notifying individuals who may be impacted by the breach. Contractor agrees that the requirements of this Section must be incorporated into all subcontracts entered into by Contractor. It is further agreed that a violation of this Section must be deemed to cause irreparable harm that justifies injunctive relief in court. A violation of this Section may result in immediate termination of this Agreement without notice. The obligations of Contractor or its subcontractors under this Section must survive the termination of this Agreement.

5.27 Jurisdiction and Venue. This Agreement is made under, and must be construed in accordance with and governed by the laws of the State of Arizona without regard to the

conflicts or choice of law provisions thereof. Any action to enforce any provision of this Agreement or to obtain any remedy with respect hereto must be brought in the courts located in Maricopa County, Arizona, and for this purpose, each Party hereby expressly and irrevocably consents to the jurisdiction and venue of such court.

5.28 Survival. All warranties, representations, and indemnifications by the Contractor must survive the completion or termination of this Agreement.

5.29 Modification. Except as expressly provided herein to the contrary, no supplement, modification, or amendment of any term of this Agreement will be deemed binding or effective unless in writing and signed by the Parties.

5.30 Severability. If any provision of this Agreement or the application to any person or circumstance may be invalid, illegal or unenforceable to any extent, the remainder of this Agreement and the application will not be affected and will be enforceable to the fullest extent permitted by law.

5.31 Integration. This Agreement contains the full agreement of the Parties. Any prior or contemporaneous written or oral agreement between the Parties regarding the subject matter is merged and superseded.

5.32 Time is of the Essence. Time of each of the terms, covenants, and conditions of this Agreement is hereby expressly made of the essence.

5.33 Date of Performance. If the date of performance of any obligation or the last day of any time period provided for should fall on a Saturday, Sunday, or holiday for the City, the obligation will be due and owing, and the time period will expire, on the first day after which is not a Saturday, Sunday or legal City holiday. Except as may otherwise be set forth in this Agreement, any performance provided for herein will be timely made if completed no later than 5:00 p.m. (Chandler time) on the day of performance.

5.34 Delivery. All prices are F.O.B. Destination and include all delivery and unloading at the specified destinations. The Contractor will retain title and control of all goods until they are delivered and accepted by the City. All risk of transportation and all related charges will be the responsibility of the Contractor. All claims for visible or concealed damage will be filed by the Contractor. The City will notify the Contractor promptly of any damaged goods and will assist the Contractor in arranging for inspection.

5.35 Third Party Beneficiary. Nothing under this Agreement will be construed to give any rights or benefits in the Agreement to anyone other than the City and the Contractor, and all duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of City and the Contractor and not for the benefit of any other party.

5.36 Conflict in Language. All work performed must conform to all applicable City of Chandler codes, ordinances, and requirements as outlined in this Agreement. If there is a conflict in interpretation between provisions in this Agreement and those in the Exhibits, the provisions in this Agreement prevail.

5.37 Document/Information Release. Documents and materials released to the Contractor, which are identified by the City as sensitive and confidential, are the City's property. The document/material must be issued by and returned to the City upon completion of the services under this Agreement. Contractor's secondary distribution, disclosure, copying, or duplication in any manner is prohibited without the City's prior written approval. The document/material must be kept secure at all times. This directive applies to all City documents, whether in photographic, printed, or electronic data format.

5.38 Exhibits. The following exhibits are made a part of this Agreement and are incorporated by reference:

Exhibit A - Project Description/Scope of Services
Exhibit B - Compensation and Fees
Exhibit C - Insurance Requirements
Exhibit D - Special Conditions

5.39 Special Conditions. As part of the services Contractor provides under this Agreement, Contractor agrees to comply with and fully perform the special terms and conditions set forth in Exhibit D, which is attached to and made a part of this Agreement.

5.40 Cooperative Use of Agreement. In addition to the City of Chandler and with approval of the Contractor, this Agreement may be extended for use by other municipalities, school districts and government agencies of the State. Any such usage by other entities must be in accordance with the ordinance, charter and/or procurement rules and regulations of the respective political entity.

If required to provide services on a school district property at least five times during a month, the Contractor will submit a full set of fingerprints to the school of each person or employee who may provide such service. The District will conduct a fingerprint check in accordance with A.R.S. 41-1750 and Public Law 92-544 of all Contractors, subcontractors or vendors and their employees for which fingerprints are submitted to the District. Additionally, the Contractor will comply with the governing body fingerprinting policies of each individual school district/public entity. The Contractor, sub-contractors, vendors and their employees will not provide services on school district properties until authorized by the District.

Orders placed by other agencies and payment thereof will be the sole responsibility of that agency. The City will not be responsible for any disputes arising out of transactions made by other agencies who utilize this Agreement.

5.41 Non-Discrimination and Anti-Harassment Laws. Contractor must comply with all applicable City, state, and federal non-discrimination and anti-harassment laws, rules, and regulations.

5.42 Licenses and Permits. Beginning with the Effective Date and for the full term of this Agreement, Contractor must maintain all applicable City, state, and federal licenses and permits required to fully perform Contractor's services under this Agreement.

5.43 Warranties. Contractor must furnish a one-year warranty on all work and services

performed under this Agreement. Contractor must furnish, or cause to be furnished, a two-year warranty on all fixtures, furnishings, and equipment furnished by Contractor, subcontractors, or suppliers under this Agreement. Any defects in design, workmanship, or materials that do not comply with this Agreement must be corrected by Contractor (including, but not limited to, all parts and labor) at Contractor's sole cost and expense. All written warranties and redlines for as-built conditions must be delivered to the City on or before the City's final acceptance of Contractor's services under this Agreement.

5.44 Emergency Purchases. City reserves the rights to purchase from other sources those items, which are required on an emergency basis and cannot be supplied immediately by the Contractor.

5.45 Non-Exclusive Agreement. This agreement is for the sole convenience of the City of Chandler. The City reserves the right to obtain like goods or services from another source when necessary.

5.46 Budget Approval Into Next Fiscal Year. This Agreement will commence on the Effective Date and continue in full force and effect until it is terminated or expires in accordance with the provisions of this Agreement. The Parties recognize that the continuation of this Agreement after the close of the City's fiscal year, which ends on June 30 of each year, is subject to the City Council's approval of a budget that includes an appropriation for this item as expenditure. The City does not represent that this budget item will be actually adopted. This determination is solely made by the City Council at the time Council adopts the budget.

This Agreement shall be in full force and effect only when it has been approved and executed by the duly authorized City officials.

FOR THE CITY	**FOR THE CONTRACTOR**
By: _____	By: Kal Raman
Its: Mayor	Its: Kal Raman, Principal

APPROVED AS TO FORM:

By: _____
City Attorney

ATTEST:

By: _____
City Clerk

EXHIBIT A TO AGREEMENT
SCOPE OF SERVICES

Annual Security and Emergency Preparedness Program

Year	Emergency Management Toolbox (EMT)	Training	Exercise	Assessment/ Planning
1	Develop EMT for W/WW	Annual Refresher Three, 1-hour overview of ERP/NIMS One, 1-hour for Management Team	Simulation Exercise: One Tabletop for Water	Conduct RRA & prepare ERP for WW Conduct facilities inspection (required for WW RRA).
2	Annual Update of EMT	Annual Refresher: Five, 1-hour overview of ERP/NIMS One, 1-hour for Mgmt Team	Simulation Exercise: Five Tabletop (W/WW/SW) One Dept-wide (EOC)	Update COOP plans for all Divisions Annual facilities inspection
3	Annual Update of EMT	Annual Refresher: Five, 1-hour overview of ERP/NIMS One, 1-hour for Mgmt Team	Simulation Exercise: Five Tabletop (W/WW/SW) One Dept-wide (EOC)	Additional technical assistance. Annual facilities inspection.
4	Annual Update of EMT	Annual Refresher: Five, 1-hour overview of ERP/NIMS One, 1-hour for Mgmt Team	Simulation Exercise: Five Tabletop (W/WW/SW) One Dept-wide (EOC)	Additional technical assistance. Annual facilities inspection.
5	Annual Update of EMT	Annual Refresher: Five, 1-hour overview of ERP/NIMS One, 1-hour for Mgmt Team	Simulation Exercise: Five Tabletop (W/WW/SW) One Dept-wide (EOC)	Update RRA/ERP for all Divisions. Water will be due for AWIA re-certification

Other Services

Technical Services

- SOP development.
- Fuel contingency planning.
- Spill Prevention, Control and Countermeasure (SPCC) plans, Storm water Pollution Prevention Plan (SWPPP), Community Right to Know Program.

Training

- ICS/NIMS.
- ADEQ operator certification training (W/WW, Grades 1-4).
- Customized computer-based training courses (safety, emergency readiness, operational).

The Contractor may provide other related services upon request from the City.

EXHIBIT B TO AGREEMENT
COMPENSATION AND FEES

Fee Schedule

The following fees are the all-inclusive cost of the Scope of Services.

Tasks	Details	Year 1	Year 2	Year 3	Year 4	Year 5
Emergency Management Toolbox	Y1: Develop EMT for W/WW Dept. Y2-Y5: Update EMT twice annually	$11,880	$4,200	$4,200	$4,200	$4,200
Risk/Resilience Assessment & Emergency Response Plan	Y1: Conduct RRA/ERP for Wastewater Y5: Update all RRAs. AWIA certification for Water	$53,500				$33,750
Annual Facilities Inspection	Y1: W/WW; submit updated Inspection Summary Tool (Excel spreadsheet) Y2-Y5: W/WW/SW	$12,430	$15,600	$15,600	$15,600	$15,600
COOP Plan	Y2: Develop COOP Plan for entire PW Dept.		$52,700			
Plans/Procedures	Y4: Development of additional plans, policies, procedures			$18,400	$18,400	
Annual Refresher Training	Y1: Three, 1-hour in-person training for Water only Y2-Y5: Five, 1-hour in-person training; review of ERP/ICS concepts for W/WW/SW employees Y1-Y5: One, 1-hour in-person training for Mgmt Team	$5,000	$15,000	$15,000	$15,000	$15,000
Tabletop Exercise/Drill	Y1: One (1) 4-hr TTX for Water only Y2-Y5: Five (5) 4-hr TTX for W/WW/SW	$7,600	$38,000	$38,000	$38,000	$38,000
Department EOC Exercise	Y2-Y5: One 4-hour Dept-wide functional exercise of DOC; limited mobilization of field staff		$10,950	$10,950	$10,950	$10,950
	TOTAL FEES	**$90,410**	**$136,450**	**$102,150**	**$102,150**	**$117,500**

Hourly Fees

The following hourly fees will be the basis of the fee schedule for any services requested by the City in addition to the Scope of Services.

Role	Hourly Fee
Principal	$125
Senior Associate/SME	$125
Associate/PM	$105
Administrative	$50

EXHIBIT C TO AGREEMENT
INSURANCE

INSURANCE

General.

A. At the same time as execution of this Agreement, the Contractor shall furnish the City a certificate of insurance on a standard insurance industry ACORD form. The ACORD form must be issued by an insurance company authorized to transact business in the State of Arizona possessing a current A.M. Best, Inc. rating of A-7, or better and legally authorized to do business in the State of Arizona with policies and forms satisfactory to City. Provided, however, the A.M. Best rating requirement shall not be deemed to apply to required Workers' Compensation coverage.

B. The Contractor and any of its subcontractors shall procure and maintain, until all of their obligations have been discharged, including any warranty periods under this Agreement are satisfied, the insurances set forth below.

C. The insurance requirements set forth below are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement.

D. The City in no way warrants that the minimum insurance limits contained in this Agreement are sufficient to protect Contractor from liabilities that might arise out of the performance of the Agreement services under this Agreement by Contractor, its agents, representatives, employees, subcontractors, and the Contractor is free to purchase any additional insurance as may be determined necessary.

E. Failure to demand evidence of full compliance with the insurance requirements in this Agreement or failure to identify any insurance deficiency will not relieve the Contractor from, nor will it be considered a waiver of its obligation to maintain the required insurance at all times during the performance of this Agreement.

F. Use of Subcontractors: If any work is subcontracted in any way, the Contractor shall execute a written contract with Subcontractor containing the same Indemnification Clause and Insurance Requirements as the City requires of the Contractor in this Agreement. The Contractor is responsible for executing the Agreement with the Subcontractor and obtaining Certificates of Insurance and verifying the insurance requirements.

Minimum Scope and Limits of Insurance. The Contractor shall provide coverage with limits of liability not less than those stated below.

A. *Commercial General Liability-Occurrence Form.* Contractor must maintain "occurrence" form Commercial General Liability insurance with a limit of not less than $2,000,000 for each occurrence, $4,000,000 aggregate. Said insurance must also include coverage for products and completed operations, independent contractors, personal injury and advertising injury. If any Excess insurance is utilized to fulfill the

requirements of this paragraph, the Excess insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

B. *Automobile Liability-Any Auto or Owned, Hired and Non-Owned Vehicles*
Vehicle Liability: Contractor must maintain Business/Automobile Liability insurance with a limit of $1,000,000 each accident on Contractor owned, hired, and non-owned vehicles assigned to or used in the performance of the Contractor's work or services under this Agreement. If any Excess or Umbrella insurance is utilized to fulfill the requirements of this paragraph, the Excess or Umbrella insurance must be "follow form" equal or broader in coverage scope than underlying insurance.

C. *Workers Compensation and Employers Liability Insurance*: Contractor must maintain Workers Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Contractor employees engaged in the performance of work or services under this Agreement and must also maintain Employers' Liability insurance of not less than $1,000,000 for each accident and $1,000,000 disease for each employee.

D. *Professional Liability.* If the Agreement is the subject of any professional services or work performed by the Contractor, or if the Contractor engages in any professional services or work adjunct or residual to performing the work under this Agreement, the Contractor must maintain Professional Liability insurance covering errors and omissions arising out of the work or services performed by the Contractor, or anyone employed by the Contractor, or anyone whose acts, mistakes, errors and omissions the Contractor is legally liable, with a liability limit of $1,000,000 each claim and $2,000,000 all claims. In the event the Professional Liability insurance policy is written on a "claims made" basis, coverage must extend for three years past completion and acceptance of the work or services, and the Contractor, or its selected Design Professional will submit Certificates of Insurance as evidence the required coverage is in effect. The Design Professional must annually submit Certificates of Insurance citing that the applicable coverage is in force and contains the required provisions for a three year period.

Additional Policy Provisions Required.

A. *Self-Insured Retentions or Deductibles.* Any self-insured retentions and deductibles must be declared and approved by the City. If not approved, the City may require that the insurer reduce or eliminate any deductible or self-insured retentions with respect to the City, its officers, officials, agents, employees, and volunteers.

1. The Contractor's insurance must contain broad form contractual liability coverage.

2. The Contractor's insurance coverage must be primary insurance with respect to the City, its officers, officials, agents, and employees. Any insurance or self-insurance maintained by the City, its officers, officials, agents, and employees shall be in excess of the coverage provided by the Contractor and must not contribute to it.

3. The Contractor's insurance must apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

4. Coverage provided by the Contractor must not be limited to the liability assumed under the indemnification provisions of this Agreement.

5. The policies must contain a severability of interest clause and waiver of subrogation against the City, its officers, officials, agents, and employees, for losses arising from Work performed by the Contractor for the City.

6. The Contractor, its successors and or assigns, are required to maintain Commercial General Liability insurance as specified in this Agreement for a minimum period of three years following completion and acceptance of the Work. The Contractor must submit a Certificate of Insurance evidencing Commercial General Liability insurance during this three year period containing all the Agreement insurance requirements, including naming the City of Chandler, its agents, representatives, officers, directors, officials and employees as Additional Insured as required.

7. If a Certificate of Insurance is submitted as verification of coverage, the City will reasonably rely upon the Certificate of Insurance as evidence of coverage but this acceptance and reliance will not waive or alter in any way the insurance requirements or obligations of this Agreement.

B. *Insurance Cancellation During Term of Contract/Agreement.*

1. If any of the required policies expire during the life of this Contract/Agreement, the Contractor must forward renewal or replacement Certificates to the City within ten days after the renewal date containing all the required insurance provisions.

2. Each insurance policy required by the insurance provisions of this Contract/Agreement shall provide the required coverage and shall not be suspended, voided or canceled except after 30 days prior written notice has been given to the City, except when cancellation is for non-payment of premium, then ten days prior notice may be given. Such notice shall be sent directly to Chandler Law-Risk Management Department, Post Office Box 4008, Mailstop 628, Chandler, Arizona 85225. If any insurance company refuses to provide the required notice, the Contractor or its insurance broker shall notify the City of any cancellation, suspension, non-renewal of any insurance within seven days of receipt of insurers' notification to that effect.

A. *City as Additional Insured.* The policies are to contain, or be endorsed to contain, the following provisions:

1. The Commercial General Liability and Automobile Liability policies are to contain, or be endorsed to contain, the following provisions: The City, its officers, officials,

agents, and employees are additional insureds with respect to liability arising out of activities performed by, or on behalf of, the Contractor including the City's general supervision of the Contractor; Products and Completed operations of the Contractor; and automobiles owned, leased, hired, or borrowed by the Contractor.

2. The City, its officers, officials, agents, and employees must be additional insureds to the full limits of liability purchased by the Contractor even if those limits of liability are in excess of those required by this Agreement.

EXHIBIT D TO AGREEMENT
SPECIAL CONDITIONS

NONE

CHANDLER arizona
Community of Innovation

City Council Memorandum **Public Works & Utilities** **Memo No.** UA21-051

Date: April 19, 2021
To: Mayor and Council
Thru: Joshua H. Wright, Acting City Manager
Debra Stapleton, Assistant City Manager
John Knudson, Public Works and Utilities Director
From: Paul Roy, Utility Operations Manager
Subject: Sole Source Purchase of Houston Service Industries Blower Repair Services, Parts, and Equipment

Proposed Motion:

Move City Council approve the sole source purchase of Houston Service Industries (HSI) blower repair services, parts, and equipment, from Atlas Copco Power Technique North America, LLC, in an amount not to exceed $190,000.

Background/Discussion:

The Airport Water Reclamation Facility (AWRF), located at 905 E. Queen Creek Road, utilizes centrifugal low pressure blowers for the purpose of supplying dissolved oxygen to the biology responsible for treatment of municipal wastewater. This contract will allow for a field evaluation of the aeration facilities to determine steps necessary to optimize the system. This contract also includes the overhaul of Blower Unit No. 8 which is in need of repair. Due to the size, cost, and complexity of the aeration blowers at AWRF, factory service and support is necessary to repair Blower Unit No. 8 and perform the system evaluation and optimization, as well as to provide follow-up factory support.

Evaluation:

The Public Works and Utilities Department utilizes HSI blowers, parts and equipment for various processes. Atlas Copco Power Technique North America, LLC, is the sole source supplier of HSI repair services and equipment. Staff recommends the purchase of HSI repair services and equipment from Atlas Copco Power Technique North America, LLC, as a sole source.

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
615.3960.5219.0.0	Wastewater Operating	Other Professional Services	$190,000	N

CHANDLER arizona
Community of Innovation

City Council Memorandum **City Clerk's Office** **Memo No.** N/A

Date:	April 19, 2021
To:	Mayor and Council
Thru:	Joshua H. Wright, Acting City Manager Sean Duggan, Police Chief
From:	
Subject:	Photo Enforcement

Proposed Motion:

Move City Council approve Agreement No. PD5-961-3521, Amendment No. 1, with American Traffic Solutions, Inc., dba Verra Mobility, for photo enforcement, in a combined amount not to exceed $2,500,000, for the period of five years beginning April 1, 2021 through March 31, 2026.

Background/Discussion:

The City first entered into an agreement for the photo enforcement program in February 2007. On September 24, 2015, City Council approved the renewal of this contract through March 31, 2021, with the option of up to one five-year extensions.

The goal of the photo enforcement program is to reduce overall accidents and further reduce the severity of accidents that do occur. Studies conducted in Chandler show that there is a statistically significant reduction in accidents at intersections that are photo enforced. The Police Department's experience with photo enforcement as a tool to reduce accidents and increase traffic safety has been positive.

Expert witnesses will be provided by the Contractor as reasonably necessary to establish the accuracy, calibration, maintenance, repair records, technical operations, and effectiveness of the Axis photo enforcement system for contested citations. After presentation of such testimony, the City may request additional testimony from a Contractor expert witness for challenges beyond standard violation complaint appearances. Testimony by all Contractor witnesses will be provided at no additional cost to the City.

In the event that this program generates positive cash flow, all funds will be used by the Police Department and Traffic Engineering for traffic safety enhancements, including signage, roadway improvements, and other items that increase traffic safety in Chandler.

If the contract is terminated for convenience, the Contractor will be compensated for non-amortized costs incurred for installation. Staff and the Contractor will collaborate for a seamless transition.

Evaluation:

On September 24, 2015, City Council approved an agreement with American Traffic Solutions, Inc., dba Verra Mobility, for the photo enforcement program, for a five-year period, with the option of up to one five-year extensions. The City and Contractor have agreed to add expert testimony services to the Agreement. The fee per actionable activation will be adjusted from $20 to $20.75. All other terms and conditions remain the same.

Financial Implications:

Cost: $500,000 per year

Fiscal Impact

Account No.	Fund Name	Program Name	Dollar Amount	CIP Funded Y/N
101.1290.5263.0.0.0	General Fund	Photo Enforcement	$500,000	N

Attachments

Amendment No. 1 Traffic Solutions

CHANDLER
arizona

City Clerk Document No. _____

City Council Meeting Date: March 25, 2021

AMENDMENT TO CITY OF CHANDLER AGREEMENT
PHOTO ENFORCEMENT
CITY OF CHANDLER AGREEMENT NO. PD5-961-3521

THIS AMENDMENT NO. 1 (Amendment No. 1) is made and entered into by and between the City of Chandler, an Arizona municipal corporation (City), and American Traffic Solutions, Inc. dba Verra Mobility, (Contractor), (City and Contractor may individually be referred to as Party and collectively referred to as Parties) and made March 3, 2021 (Effective Date).

RECITALS

WHEREAS, the Parties entered into an agreement for the photo enforcement program (Agreement); and

WHEREAS, the term of the Agreement was April 1, 2016 through March 31, 2021, with the option of up to one five-year extension; and

WHEREAS, the Parties wish to exercise the first option through this Amendment to extend the Agreement for five years.

AGREEMENT

NOW THEREFORE, the Parties agree as follows:

1. The recitals are accurate and are incorporated and made a part of the Agreement by this reference.

2. Section 4, Price is amended to read as follows: The City will pay the Contractor the per unit cost set forth in Revised Exhibit B attached hereto and made a part of this Amendment No. 1 by this reference. Total payments made to the Contractor during the term of this Amendment No. 1 will not exceed $2,500,000.

3. Section 5, Term is amended to read as follows: The Agreement is extended for a five-year period, April 1, 2021 through March 31, 2026.

4. Section 7, Support is amended to include the following:
7.3 Expert witnesses will be provided by Contractor as reasonably necessary to establish the accuracy, calibration, maintenance, repair records, technical operations, and effectiveness of the Contractor's equipment and systems for contested citations. After presentation of such testimony, the City may request additional testimony from a Contractor expert witness for challenges beyond standard violation complaint appearances. Testimony by all Contractor witnesses will be provided at no additional cost to the City.

5. All other terms and conditions of the Agreement remain unchanged and in full force and effect. If a conflict or ambiguity arises between this Amendment No. 1 and the Agreement, the terms and conditions in this Amendment No. 1 prevail and control.

IN WITNESS WHEREOF, the Parties have entered into this Amendment on the Effective Date.

FOR THE CITY

By: _____

Its: Mayor

FOR THE CONTRACTOR

By: _____

Its: Executive Vice President, Government Solutions

APPROVED AS TO FORM:

By: _____
City Attorney

ATTEST:

By: _____
City Clerk

REVISED EXHIBIT B
PRICE PAGE

Payment Billing

Payment to the Contractor for service provided shall be made for all actionable activations occurring the previous 30 days. An actionable activation is an activation where the images of the driver and license plate are identifiable for court purposes and the driver's gender/age matches the registered owner's or the nomination protocol for rental or business owned vehicles has produced a person who's gender/age matches the image. All instances where the gender/age of the registered owner and the driver appear to match will be considered actionable even if this is later shown to be false.

The City will not be responsible for payment to the Contractor for any image, which is determined by the Contract Administrator to not be an actionable activation.

Price per Actionable Activation: $20.75