City Council Regular Meeting
City Hall - Council Chambers
1900 N. Civic Square
Goodyear, AZ 85395
Monday, April 28, 2025
5:00 p.m.

Mayor
Joe Pizzillo

Vice Mayor
Wally Campbell

Councilmember
Brannon Hampton

Councilmember
Laura Kaino

Councilwoman
Vicki Gillis

Councilmember
Benita Beckles

Councilmember
Trey Terry



PUBLIC COMMENTS/APPEARANCES FROM THE FLOOR
Please complete a speaker card and submit it to the City Clerk prior to the meeting being convened, if possible. Each speaker is limited to three (3) minutes. Once the City Clerk has called your name, step up to the lectern and begin by clearly stating your name for the record and whether you are a Goodyear resident.

NON-AGENDA ITEMS
Members of the public may address the City Council regarding any non-agenda item within the jurisdiction of the City Council. The City Council will listen to comments and may take any of the following actions:

- Respond to criticism.
- Request that staff investigate and report on the matter.
- Request that the matter be scheduled on a future agenda.

AGENDA ITEMS
Members of the public may address the City Council regarding any item on the Consent, Public Hearing and/or Business portions of the agenda. Each speaker's name will be called in turn once the item has been reached and after City staff have completed their presentation.

PROCEDURES
Pursuant to A.R.S. § 38-431.02, notice is hereby given to the members of the Goodyear City Council and to the general public that the Council of the city of Goodyear will hold a meeting open to the public. Public body members of the city of Goodyear will attend either in person or by telephone conference call and/or video communication. The Goodyear City Council may vote to go into Executive Session, pursuant to A.R.S. § 38-431.03(A)(3), which will not be open to the public, to discuss certain matters. Meetings are conducted in accordance with the City Council Meetings Council Rules of Procedure adopted by Resolution No. 2025-2441.



City Clerk's Office: 1900 N. Civic Square, Goodyear, AZ 85395 (623) 882-7830
www.goodyearaz.gov/cityclerk
City Council Meeting Live Broadcast: https://www.facebook.com/goodyearazgov/videos

Monday, April 28, 2025 5:00 p.m. Meeting Agenda

CALL TO ORDER

ROLL CALL

PLEDGE OF ALLEGIANCE AND INVOCATION BY MAYOR PIZZILLO

COMMUNICATIONS

1. **RECOGNITION OF MILLENNIUM HIGH SCHOOL GIRLS BASKETBALL TEAM**

2. **PROCLAMATION RECOGNIZING WEEK OF THE YOUNG CHILD**

PUBLIC COMMENTS/APPEARANCES FROM THE FLOOR

CONSENT

3. **APPROVAL OF MINUTES**

   RECOMMENDATION

   Approve the April 7, 2025 Regular Meeting draft minutes. (Jasmine Pernicano, City Clerk)

4. **APPROVE BUDGET AMENDMENTS & RELATED EXPENDITURE AUTHORITY**

   RECOMMENDATION

   Approve budget amendments and related expenditure authority. (Ryan Bittle, Finance Manager)

5. **MEMORANDUM OF UNDERSTAND (MOU) WITH GOVERNOR'S OFFICE OF HIGHWAY SAFETY (GOHS) TO FORMALIZE DRUG RECOGNITION EXPERTS (DREs) OFFICER SUPPORT**

   RECOMMENDATION

   Approve the MOU and provide authorization and direction to take action and execute documents necessary to carry out the intent of the agreement. (Brian Issitt, Chief of Police)

6. **2024 INTEGRATED WATER MASTER PLAN ADOPTION**

RECOMMENDATION

Adopt the 2024 Integrated Water Master Plan (IWMP). (Barbara Chappell, Water Services Director)

7. **VACATE AND ABANDON CERTAIN RIGHT OF WAY LOCATED NORTH OF INDIAN SCHOOL ROAD AND EAST OF SOUTH CITRUS ROAD**

RECOMMENDATION

ADOPT RESOLUTION NO. 2025-2461 VACATING AND ABANDONING A PORTION OF RIGHT-OF-WAY LOCATED ALONG THE MID SECTION LINE WITHIN SECTION 23, TOWNSHIP 2 NORTH, RANGE 2 WEST. (Colton Blyle, Real Estate Specialist)

8. **AMENDMENT TO ARTICLES 3-4, 3-5, AND 3-6 OF GOODYEAR CITY CODE RELATED TO PROCUREMENT PROVISIONS**

RECOMMENDATION

ADOPT ORDINANCE NO. 2025-1630 AMENDING ARTICLES 3-4, 3-5, AND 3-6, OF GOODYEAR CITY CODE RELATED TO PROCUREMENT PROVISIONS. (Jared Askelson, Finance Director)

PUBLIC HEARINGS

The following actions will take place for each public hearing item:

A. Open the Public Hearing
B. Staff Presentation
C. Applicant Presentation (if applicable)
D. Receive Public Comment
E. Close the Public Hearing

9. **REZONE APPROXIMATELY 267 ACRES FROM THE LAS PALMAS PLANNED AREA DEVELOPMENT (PAD) TO I-10 CITRUS GATEWAY PAD**

RECOMMENDATION

ADOPT ORDINANCE NO. 2025-1631 CONDITIONALLY REZONING APPROXIMATELY 267 ACRES LOCATED AT THE SOUTHWEST CORNER OF N. CITRUS ROAD AND W. ROOSEVELT STREET, TO BE KNOWN AS I-10 CITRUS GATEWAY, FROM THE LAS PALMAS PLANNED AREA DEVELOPMENT (PAD) TO THE I-10 CITRUS GATEWAY PAD. (Guadalupe Ortiz Cortez, Principal Planner)

10. **PENSKE TRUCK LEASING ANNEXATION**

RECOMMENDATION

ADOPT ORDINANCE NO. 2025-1632 EXTENDING AND INCREASING THE CORPORATE LIMITS OF THE CITY OF GOODYEAR, MARICOPA COUNTY, STATE OF ARIZONA BY ANNEXING APPROXIMATELY 4.92 ACRES OF PROPERTY GENERALLY LOCATED ON THE SOUTH SIDE OF WEST MCDOWELL ROAD, JUST WEST OF THE 183RD DRIVE ALIGNMENT. (Justin Gabrielson, Senior Planner)

BUSINESS

11. **ADOPTION OF RESOLUTION APPROVING AN INTERGOVERNMENTAL AGREEMENT FOR THE ANNEXATION AND PROVISION OF CITY SERVICES TO LIBERTY ELEMENTARY SCHOOL DISTRICT NO. 25 PROPERTY**

RECOMMENDATION

ADOPT RESOLUTION NO. 2025-2462 APPROVING THE INTERGOVERNMENTAL AGREEMENT FOR THE ANNEXATION AND PROVISION OF CITY SERVICES TO LIBERTY ELEMENTARY SCHOOL DISTRICT NO. 25 PROPERTY. (Kini Knudson, Deputy City Manager)

12. **ANNEXATION NEAR PERRYVILLE AND YUMA ROADS**

RECOMMENDATION

Authorize staff to initiate the annexation of approximately 31.4 acres of property, generally located 650-feet east of the northeast corner of South Perryville Road and West Yuma Road. (Guadalupe Ortiz Cortez, Principal Planner)

13. **SOUTH PERRYVILLE ROAD ANNEXATION, ADJACENT TO LA PRIVADA PARCEL 5**

RECOMMENDATION

Authorize staff to initiate the annexation of approximately 0.978 acres of property along South Perryville Road, adjacent to La Privada Parcel 5. (Guadalupe Ortiz Cortez, Principal Planner)

INFORMATION ITEMS

Comments, commendations, report on current events and presentations by Mayor, Councilmembers, staff or members of the public. The Council may not propose, discuss, deliberate or take any legal action on the information presented, pursuant to A.R.S. § 38-431.02.

- Reports from the Mayor and City Council

  This may include current events and activities as well as requests for information or future agenda items.

- Report from the City Manager

  This may include updates from events, staff summary, update of legislative issues, clarification on items being requested by City Council and Manager's update on Council Related Matters.

FUTURE MEETINGS

Future meetings are tentatively scheduled as follows:

May 5, 2025	Council Meeting	5:00 p.m.

ADJOURNMENT

THE CITY OF GOODYEAR ENDEAVORS TO MAKE ALL PUBLIC MEETINGS ACCESSIBLE TO PERSONS WITH DISABILITIES. With 48-hour advance notice, special assistance can be provided for sight and/or hearing-impaired persons at this meeting. Reasonable accommodations will be made upon request for persons with disabilities or non-English speaking residents. Please call the City Clerk (623) 882-7830 or Arizona Relay (TDD) 7-1-1 to request an accommodation to participate in this public meeting.

For Non-English assistance please contact the City Clerk at (623) 882-7830.

Si necesita asistencia o traducción en español, favor de llamar al menos 48 horas antes de la reunión al (623) 882-7830.

POSTING VERIFICATION
This agenda was posted on 4/23/2025 at 5:26 p.m. by vm.

ITEM #: 1.
DATE: 04/28/2025
AI #:2572

CITY COUNCIL COMMUNICATION

STAFF PRESENTER(S): Joe Pizzillo, Mayor

SUBJECT:
RECOGNITION OF MILLENNIUM HIGH SCHOOL GIRLS BASKETBALL TEAM

ITEM #: 2.
DATE: 04/28/2025
AI #:2573

CITY COUNCIL COMMUNICATION

STAFF PRESENTER(S): Joe Pizzillo, Mayor

SUBJECT:
PROCLAMATION RECOGNIZING WEEK OF THE YOUNG CHILD

ITEM #: 3.
DATE: 04/28/2025
AI #:2618

APPROVAL OF MINUTES

SUBJECT
APPROVAL OF MINUTES

RECOMMENDATION
Approve the April 7, 2025 Regular Meeting draft minutes. (Jasmine Pernicano, City Clerk)

Attachments

April 7, 2025 Regular Meeting Minutes

City Council Regular Meeting
City Hall - Council Chambers
1900 N. Civic Square
Goodyear, AZ 85395

Monday, April 7, 2025	5:00 p.m.	Meeting Minutes

CALL TO ORDER

Mayor Pizzillo called the Regular Meeting to order at 6:00 p.m.

ROLL CALL

Present: **Mayor Joe Pizzillo**; **Vice Mayor Wally Campbell**; **Councilmember Brannon Hampton**; **Councilmember Laura Kaino**; **Councilwoman Vicki Gillis**; **Councilmember Benita Beckles**; **Councilmember Trey Terry**

Staff Present: City Manager Wynette Reed; City Attorney Roric Massey; City Clerk Jasmine Pernicano

PLEDGE OF ALLEGIANCE AND INVOCATION BY COUNCILMEMBER TERRY

PUBLIC COMMENTS/APPEARANCES FROM THE FLOOR

There were no public comments.

CONSENT

MOTION BY Councilmember Laura Kaino, SECONDED BY Vice Mayor Wally Campbell to APPROVE Consent Agenda items 1 through 4. The motion carried as follows:

AYE: **Mayor Joe Pizzillo**, **Vice Mayor Wally Campbell**, **Councilmember Brannon Hampton**, **Councilmember Laura Kaino**, **Councilwoman Vicki Gillis**, **Councilmember Benita Beckles**, **Councilmember Trey Terry**

Passed - Unanimously

1. **APPROVAL OF MINUTES**
Approve the March 24, 2025 Regular Meeting draft minutes. (Jasmine Pernicano, City Clerk)

2. **APPROVAL AND ACCEPTANCE OF RELEASE OF LIABILITY AGREEMENT**

RECOMMENDATION
ADOPT RESOLUTION NO. 2025-2457 APPROVING AND ACCEPTING THE TERMS OF A RELEASE OF LIABILITY AGREEMENT WITH IMAGETREND, LLC. (Roric Massey, City Attorney)

3. **FY2026 – FY2027 MEMORANDUM OF UNDERSTANDING BETWEEN THE CITY OF GOODYEAR AND UNITED GOODYEAR FIREFIGHTERS LOCAL 4005**

RECOMMENDATION
ADOPT RESOLUTION NO. 2025-2458 APPROVING A NEW MEMORANDUM OF UNDERSTANDING BETWEEN THE CITY OF GOODYEAR AND THE UNITED GOODYEAR FIREFIGHTERS LOCAL 4005 COMMENCING ON JULY 1, 2025 THROUGH JUNE 30, 2027. (Vicki Lackey, Deputy Human Resources Director and Justin Fair, Deputy City Manager)

4. **FY2026 – FY2027 MEMORANDUM OF UNDERSTANDING BETWEEN THE CITY OF GOODYEAR AND GOODYEAR POLICE OFFICERS ASSOCIATION**

RECOMMENDATION
ADOPT RESOLUTION NO. 2025-2459 APPROVING A NEW MEMORANDUM OF UNDERSTANDING BETWEEN THE CITY OF GOODYEAR AND THE GOODYEAR POLICE OFFICERS ASSOCIATION COMMENCING ON JULY 1, 2025 THROUGH JUNE 30, 2027. (Vicki Lackey, Deputy Human Resources Director and Justin Fair, Deputy City Manager)

BUSINESS

5. **COMMUNITY FUNDING POLICY FOR GRANT AWARDS TO NONPROFIT ORGANIZATIONS**

Christina Panaitescu, Community Partnership Program Manager, provided an overview of community funding and presented the subcommittee's recommendation, which focuses on non-grant awards to non-profit organizations. She shared that, pending council approval, the upcoming application cycle was scheduled to open on April 12, with the subcommittee reviewing submissions before presenting a recommendation to the council.

Council expressed gratitude and thanked Ms. Panaitescu for bringing this forward.

MOTION BY Councilmember Brannon Hampton, **SECONDED BY Councilmember Trey Terry to ADOPT RESOLUTION NO. 2025-2460 ADOPTING THE REVISED CITY OF GOODYEAR COMMUNITY FUNDING POLICY ENTITLED "COMMUNITY FUNDING POLICY FOR GRANT AWARDS TO NONPROFIT ORGANIZATIONS." The motion carried as follows:**

AYE: **Mayor Joe Pizzillo**, **Vice Mayor Wally Campbell**, **Councilmember Brannon Hampton**, **Councilmember Laura Kaino**, **Councilwoman Vicki Gillis**, **Councilmember Benita Beckles**, **Councilmember Trey Terry**

Passed - Unanimously

INFORMATION ITEMS

Councilmember Hampton highlighted the Goodyear Lakeside Music Festival. He also mentioned participating in the beam signing ceremony for the new Goodyear High School.

FUTURE MEETINGS

Future meetings are tentatively scheduled as follows:

April 14, 2025	Council Meeting	5:00 p.m.

EXECUTIVE SESSION

A VOTE MAY BE HELD TO CALL AN EXECUTIVE SESSION FOR THE FOLLOWING:

6. Pursuant to ARS 38-431.03(A)(3)(4) & (7) for discussion and consultation for legal advice with the city's attorney; for discussion or consultation with the attorneys of the public body in order to consider its position and instruct its attorneys regarding the public body's position regarding contracts that are the subject of negotiations; and for discussions or consultations with designated representatives of the public body in order to consider its position and instruct its representatives regarding negotiations for the purchase, sale or lease of real property involving the ADOT expansion of the Loop 303.

MOTION BY Vice Mayor Wally Campbell, **SECONDED BY Councilmember Trey Terry to CONVENE an Executive Session. The motion carried as follows:**

AYE: **Mayor Joe Pizzillo**, **Vice Mayor Wally Campbell**, **Councilmember Brannon Hampton**, **Councilmember Laura Kaino**, **Councilwoman Vicki Gillis**, **Councilmember Benita Beckles**, **Councilmember Trey Terry**

Passed - Unanimously

Council moved into Executive Session at 6:12 p.m.

ADJOURNMENT OF EXECUTIVE SESSION

Mayor Pizzillo adjourned the Executive Session at 6:50 p.m.

RECONVENE REGULAR MEETING

Mayor Pizzillo reconvened the Regular Meeting at 6:50 p.m.

ADJOURNMENT

There being no further business to discuss, Mayor Pizzillo adjourned the Regular Meeting at 6:51 p.m.

_____ _____

Jasmine Pernicano, City Clerk Joe Pizzillo, Mayor

Date:_____

CERTIFICATION

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the CITY COUNCIL REGULAR MEETING of the city of Goodyear, Arizona, held on April 7, 2025. I further certify that the meeting was duly called and held and that a quorum was present.

Dated this ____ day of _____, 2025. SEAL:

_____

Jasmine Pernicano, City Clerk

ITEM #: 4.
DATE: 04/28/2025
AI #:2576

CITY COUNCIL ACTION REPORT

SUBJECT: APPROVE BUDGET AMENDMENTS & RELATED EXPENDITURE AUTHORITY

STAFF PRESENTER(S): Ryan Bittle, Finance Manager

SUMMARY

Approve Budget Amendments

STRATEGIC PLAN ALIGNMENT



RECOMMENDATION

Approve budget amendments and related expenditure authority. (Ryan Bittle, Finance Manager)

FISCAL IMPACT

Fiscal impacts are outlined in the attached report. The citywide budget total remains unchanged within the Adopted State Expenditure Limitation.

BACKGROUND AND PREVIOUS ACTIONS

Budget amendments requiring City Council approval are presented as necessary throughout the year. The FY2025 expenditure limitation budget was adopted on June 12, 2024.

STAFF ANALYSIS

Budget transfers are permitted by Arizona Revised Statute 42-17106(B), which provides authorization for cities and towns to exceed expenditures in a budget item after final adoption of a city/town budget by transferring appropriations between budget items. All budget transfers are completed within city policy established by Resolution 2022-2256. Review of budget transfers keeps the Council and public informed about the city's current fiscal year revenues and expenditures. The Budget Amendment Report is included as Attachment A.

Attachments

Attachment A Budget Amendment Report

City Council - Budget Amendments Report - FY2025

Council Agenda Date: 4/28/2025

Date	Transfer Journal No.	Reason Needed	Amount	Funding From	Funding To
3/27/2025	2025-09-981	Move fund from the City Manager's Office 1-Time Contingency to Public Works' 1-Time General Fund budget to replace the current canopy in the South Parking Lot with a cantilevered canopy for greater ease of parking vehicles.	$90,000	1-Time General Fund Contingency - CMO	Public Works One-Time General Fund
3/18/2025	2025-09-547	Due to an increase in permit activity above forecasted projections, additional funding for FY2025 is necessary to fulfill the city's commitments and ensure compliance with the reimbursements tied to development agreements for projects #40003 & #40004. The FY2026 revenue projections have been updated accordingly to reflect current activity.	$650,000	Development Impact Fees 1-Time Fund Balance	Development Impact Fee Funds

ITEM #: 5.
DATE: 04/28/2025
AI #:2564

CITY COUNCIL ACTION REPORT

SUBJECT: MEMORANDUM OF UNDERSTAND (MOU) WITH GOVERNOR'S OFFICE OF HIGHWAY SAFETY (GOHS) TO FORMALIZE DRUG RECOGNITION EXPERTS (DREs) OFFICER SUPPORT

STAFF PRESENTER(S): Brian Issitt, Chief of Police

SUMMARY

The Governor's Office of Highway Safety (GOHS) provides substantial resources for the training of law enforcement officers in the Drug Recognition Experts (DRE) program. The Goodyear Police department provides an officer who is responsible for coordinating West Valley Regional DRE training and events. GOHS is requesting to formalize the collaboration between GOHS and the department in fiscal year 2025 for the role of the West Valley Regional DRE Coordinator, effective starting October 1, 2024 until September 30, 2025. Approval will be retroactive to the effective date.

STRATEGIC PLAN ALIGNMENT

SAFE & VIBRANT COMMUNITY

RECOMMENDATION

Approve the MOU and provide authorization and direction to take action and execute documents necessary to carry out the intent of the agreement. (Brian Issitt, Chief of Police)

FISCAL IMPACT

The officer that is assigned as the West Valley Regional DRE coordinator is funded in the Police department's General Fund base budget.

BACKGROUND AND PREVIOUS ACTIONS

The police department has received funding for overtime to support enforcement efforts through GOHS funding in previous fiscal years. The department has some of the highest driving while impaired arrest numbers in the state. As part of the enforcement effort, drug recognition experts are critical to ensuring that proper field-testing and documentation is completed. GOHS indicated that in 2023, they would like to provide funding for a DRE west valley coordinator to conduct standard training. In fiscal year 2024, a Goodyear officer began conducting the coordination efforts for GOHS receiving overtime reimbursement through GOHS Enforcement grant funding. GOHS notified the department of its desire to formalize the agreement for West Valley Regional DRE coordination at the end of FY24.

STAFF ANALYSIS

The officer assigned the West Valley Regional DRE Coordinator responsibilities will provide support and expertise to assist training coordinators throughout the west valley. This includes developing, revising and delivering training materials for focus areas determined by GOHS. In fiscal year 2024, the traffic unit had 56 hours of overtime dedicated to DRE coordination. By formalizing the agreement with GOHS, this coordination effort is allocated $40,000 in reimbursement through GOHS and is not funded through the grant. This allows for the grant funding to be dedicated to enforcement. This is an opportunity for the department to continue to demonstrate it's commitment to identifying impaired drivers. The department is recommending approval of the MOU, which is included as Attachment A.

Attachments

Attachment A - GOHS MOU DRE

KATIE HOBBS
GOVERNOR

J.M. "JESSE" TORREZ
DIRECTOR
GOVERNOR'S HIGHWAY SAFETY REPRESENTATIVE

MEMORANDUM OF UNDERSTANDING

GOHS – West Valley Regional DRE Coordinator

The Arizona Drug Evaluation and Classification program has gained national recognition for its effectiveness in identifying drug-impaired drivers. The primary objective of this program is to train and certify law enforcement officers as Drug Recognition Experts (DREs). DREs play a critical role in distinguishing between drug influence and medical or mental health conditions. These certified DREs are invaluable in addressing the significant impact of drug and alcohol-impaired driving on public safety. The DRE School, however, is highly demanding and requires a strong commitment from participants.

The Governor's Office of Highway Safety (GOHS) invests substantial resources in the training of law enforcement officers, reinforcing Arizona's leadership in the DRE program. Arizona extends its expertise beyond the state by offering training to officers from other states and countries. This Memorandum of Understanding (MOU) is intended to formalize the collaboration between **Officer Aaron Price of the Goodyear Police Department** and GOHS in order to strengthen and expand these training initiatives.

- **GOHS Responsibilities:**
  - Allocate federal grant funding for coordinator positions dedicated to training activities.
  - Facilitate communication, logistics, and the coordination of training sessions.
  - Collect and analyze monthly activity reports submitted by coordinators to ensure compliance with National Highway Traffic Safety Administration (NHTSA) standards.

- **GOHS West Valley Regional DRE Coordinator Responsibilities:**
  - Develop and deliver comprehensive curricula and training materials for the identified focus areas.
  - Provide ongoing support, resources, and expertise to assist training coordinators.
  - Submit detailed monthly activity reports to GOHS, documenting the progress, scope, and outcomes of the training programs.

This MOU will be effective from Federal Fiscal 2025 Starting October 1, 2024 and remain in effect until September 30, 2025 unless terminated earlier by either party through written notice of 30 days.

By signing below, all parties agree to the terms and conditions outlined in this Memorandum of Understanding.

Wynette Reed, City Manager City of Goodyear	Date
Brian Issitt, Chief of Police City of Goodyear	Date
Roric Massey, City Attorney City of Goodyear	Date
Jasmine Pernicano, City Clerk Governor's Office of Highway Safety	Date
J.M. "Jesse" Torrez, Director Governor's Office of Highway Safety	Date

This MOU represents a commitment to collaboration aimed at improving public safety through enhanced training for law enforcement professionals in Arizona and beyond.

ITEM #: 6.
DATE: 04/28/2025
AI #:2519

CITY COUNCIL ACTION REPORT

SUBJECT: 2024 INTEGRATED WATER MASTER PLAN ADOPTION

STAFF PRESENTER(S): Barbara Chappell, Water Services Director

SUMMARY

Council will be asked to adopt the updated 2024 Integrated Water Master Plan (IWMP). Water Services Department's (Water Services) Fiscal Year (FY) 2025 Strategic Plan action item within the infrastructure focus area is intended to review the current condition and future needs of the water and wastewater systems. The deliverable from this action item is the updated 2024 IWMP. The City's IWMP was last updated in 2016.

STRATEGIC PLAN ALIGNMENT



RECOMMENDATION

Adopt the 2024 Integrated Water Master Plan (IWMP). (Barbara Chappell, Water Services Director)

FISCAL IMPACT

The 2024 IWMP identifies infrastructure needs and will be used to inform future Capital Improvement Programs, Development Impact Fee Programs, and water/wastewater fees/rate studies. These future infrastructure investments will be brought before Council for action at the appropriate time.

BACKGROUND AND PREVIOUS ACTIONS

On November 13, 2023, Council adopted Resolution No. 2023-2363 adopting the City of Goodyear FY2025-2027 strategic plan. In the adopted Strategic Plan under the Infrastructure Focus Area, the Water Services Department (Water Services) has a Water and Wastewater Analysis action item to review the current condition and future needs of the water and wastewater systems.

The Water and Wastewater Analysis action item is included in the updated FY2025-2028

Strategic Plan, which Council adopted at its November 18, 2024, meeting through Resolution No. 2024-2434 ADOPTING THE CITY OF GOODYEAR FY2025-2028 STRATEGIC PLAN.

The city's IWMP is essential to continue to meet or exceed industry standards for water and sewer services, while planning and expanding the Water Services Department's systems for anticipated growth. The IWMP is a dynamic master planning process for municipal water and wastewater services that accounts for the current population, while also predicting future economic development, residential growth, and redevelopment activities. Additionally, the city's planning processes must also account for water resource availability, drought management, and new water quality regulations.

For a city growing as rapidly as Goodyear and with the ever-changing landscape of water resources in Arizona, the IWMP should be updated every five years to provide critical information for our capital and infrastructure improvement plans, to help guide our city's growth strategies, and to formulate our service rates and development impact fees.

Water Services staff presented the updated 2024 IWMP to Council at its Work Session on March 3, 2025.

STAFF ANALYSIS

The updated 2024 IWMP (Attachment A) analyzed in significant detail the current condition of our water and wastewater systems, as well as formulating 5-year and 10-year planning horizons. The updated 2024 IWMP also reviewed the City's build-out plans for our service area, but in less detail. Since the growth Goodyear has experienced since the 2016 IWMP far exceeded its predictions, Water Services staff spent a significant amount of time analyzing current service levels and system needs.

The updated 2024 IWMP effort also utilized the city's recently adopted Goodyear General Plan 2035 in coordination with some of the City's larger developers in order to identify the needs to support anticipated growth for the next ten years.

There are several important recommendations identified within the updated 2024 IWMP, which include:

1. Water Supply Development Strategies for Rainbow Valley: Explore ideas for how to provide utility services to support development in the Rainbow Valley area.
2. Expand 157th Water Reclamation Facility by 2030: Due to the rapid growth, the water reclamation facility located on 157th Avenue needs to be expanded. The expansion project is currently in the design phase, and due to the pace of growth in the City, the construction phase is anticipated to begin once the design work is finished. The expansion is projected to support 10 years of growth for the area.
3. Expand the Surface Water Treatment Facility by 2030: When the surface water treatment facility was constructed, there was a second phase anticipated in the 2035 - 2040 timeframe. Due to the rapid growth the City has been experiencing, it is anticipated that this facility will need to be expanded in 2030. The project will expand the capacity of facility from 8 million gallons per day (MGD) to 16 MGD.

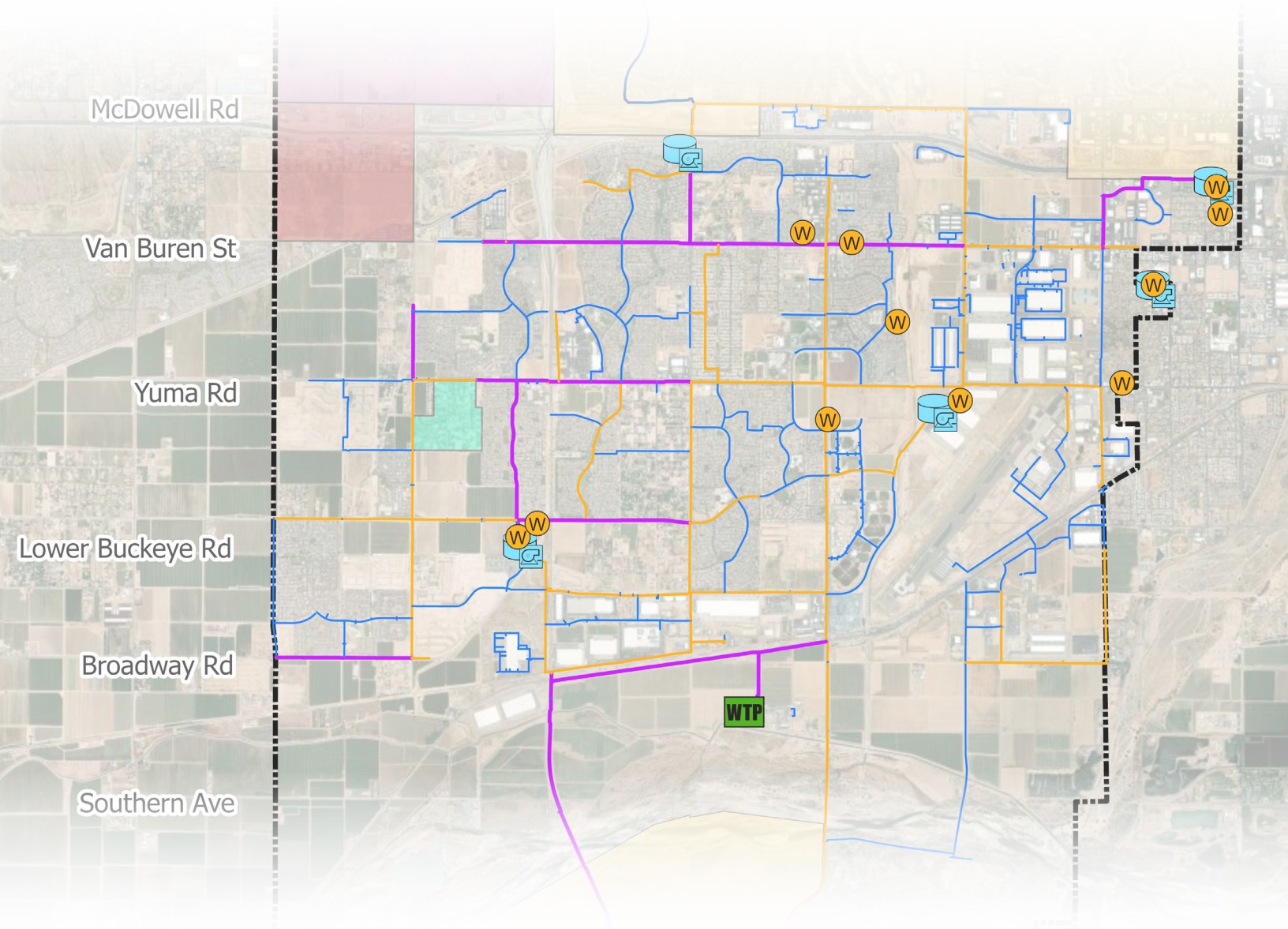
Attachments

Attachment A - 2024 IWMP

Prepared for
CITY OF GOODYEAR

2024 Integrated Water Master Plan

FINAL / April 2025



carollo

CITY OF GOODYEAR WATER

2024 Integrated Water Master Plan

2024 Integrated Water Master Plan

FINAL / April 2025



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Abbreviations

$/lf	cost per linear foot
A.A.C.	Arizona Administrative Code
AACE	Association for the Advancement of Cost Engineering
AACEI	Association for the Advancement of Cost Engineering International
AADF	average annual daily flow
AAWS	Analysis of Assured Supply
ac-ft	acre-feet
AD	average day
Adaman	Adaman Mutual Water Company
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
AFY	acre-feet per year
AMA	Active Management Area
AOHI	area of hydrologic impact
APS	Arizona Public Service
ARC	Arizona Reconsultation Committee
AS&R	annual storage and recovery
ASR	aquifer storage and recovery
AWBA	Arizona Water Banking Authority
AWP	Advanced Water Purification
AWS	Assured Water Supply
AWTF	advanced water treatment facility
AZ-303	Arizona State Route 303
bls	below land surface
BOR	Bureau of Reclamation
BPS	booster pump station
BWCDD	Buckeye Water Conservation Drainage District
CAGRD	Central Arizona Groundwater Replenishment District
CAP	Central Arizona Project
Carollo	Carollo Engineers, Inc.
CAWCD	Central Arizona Water Conservation District
CAWS	Certificates of Assured Water Supply
CCI	Construction Cost Index
CIP	Capital Improvement Projects
City	City of Goodyear
CMAR	Construction Manager at Risk
CSIF	CAP/SRP Interconnection Facility

d/D	depth over diameter
DAWS or Designation	Designation of Assured Water Supply
DCP	Drought Contingency Plan
DPP	Drought Preparedness Plan
DPR	direct potable reuse
DU	dwelling unit
DWF	dry weather flow
ENR CCI	Engineering News Record Construction Cost Index
ft	feet
ft bgs	feet below ground surface
ft/day	feet per day
ft/ft	feet per foot
ft/sec	feet per second
GIS	Geographic Information System
GMA	Groundwater Management Act
gpd	gallons per day
gpd/ac	gallons per day per acre
gpm	gallons per minute
GRIC	Gila River Indian Community
GSF	Groundwater Savings Facility
HGL	hydraulic grade lines
HOA	Homeowners Association
HSI	Hydro Systems, Inc.
I-10	Interstate Highway 10
ICS	intentionally created surplus
IFC	International Fire Code
IGFR	Irrigation Grandfathered Rights
IIP	Infrastructure Improvement Plan
in	inch(es)
INA	Irrigation Non-Expansion Area
IPR	indirect potable reuse
IWMP	Integrated Water Master Plan
LTSC	long-term storage credit
M&I	Municipal and Industrial
MAF	million acre-feet
MCC	motor control center
MD	maximum day

MDAWS	Modified Designation of Assured Water Supply
MG	million gallons
mgd	million gallons per day
mi	mile(s)
MSA	Member Service Area
NIA	Non-Indian Agriculture
PFAS	polyfluoroalkyl substances
PGAN	Phoenix Goodyear Airport North
PGAS	Phoenix Goodyear Airport South
PH	peak hour
PRV	pressure reducing valve
psi	pounds per square inch
PVC	polyvinyl chloride
PWWF	peak wet weather flow
RO	reverse osmosis
RPAG	Recovery Planning Advisory Group
SAT	soil aquifer treatment
SCADA	supervisory control and data acquisition
SPC	system pressure criteria
sq mi	square mile(s)
SRP	Salt River Project
SRVWUA	Salt River Valley Water Users' Association
SSO	sanitary sewer overflows
STEM	science, technology, engineering, and math
SWTP	surface water treatment plant
TDS	total dissolved solids
US&R	Underground storage and recovery
USBR	United States Bureau of Reclamation
USF	Underground Storage Facility
UWSRA	Underground Water Storage and Recovery Act
WERT	Water Emergency Response Team
WPA	water planning area
WPA 1	Water Planning Area 1
WPA 2	Water Planning Area 2
WPA 3	Water Planning Area 3
WPA 4	Water Planning Area 4
WPA 5	Water Planning Area 5
WRF	wastewater reclamation facility

WRF	water reclamation facility
WS	water storage
WSRV	West Salt River Valley
WWF	wet weather flow

CHAPTER 1 INTRODUCTION

The City of Goodyear (City) began this Integrated Water Master Plan (IWMP) to plan the water resources, water, wastewater, and reclaimed water infrastructure to support growth using a common set of flow projection assumptions. The IWMP assumptions are based on the City's 2035 General Plan.

1.1 2016 Integrated Water Master Plan

The City's previous master plan was the 2016 Integrated Water Master Plan (IWMP). This plan brought together the water resources and infrastructure systems into one coordinated plan with flow projections based on the General Plan land use.

One of the key outcomes of the 2016 IWMP was a set of Capital Improvement projects that when implemented, enables the City to strengthen its water delivery infrastructure after the financial stresses of the Great Recession. The City worked with a Citizens committee to help obtain support for the additional infrastructure needed, and then worked very hard to implement the 2016 IWMP's recommendations. Because of these actions, the City began the 2024 IWMP in a much stronger position for water supply and delivery infrastructure.

The 2016 IWMP outlined a strategy to deliver the City's Central Arizona Project (CAP) allocation by wheeling water through the Interconnect at the Granite Reef Dam to the Salt River Project (SRP) canals and then pumping the water from there to a surface water treatment facility within the City. Up until this time the City had no way to take physical possession of its CAP allocation, so recharging the CAP water in remote facilities was the only option. As a result, the City was not able to count the full CAP allocation in its water resource portfolio. After the 2016 IWMP was completed, the City was able to construct Phase 1 of the water treatment plant, which significantly advanced the City's position as a reliable water delivery provider for a growing community.

The surface water treatment plant was located near the 157th Avenue Water Reclamation Facility so that in the future a direct potable reuse (DPR) facility could be built to treat reclaimed water and deliver it for potable use at a lower infrastructure cost because the facilities are co-located.

1.2 2024 IWMP Project Objectives

After the 2016 IWMP was completed, numerous changes occurred, creating the need for the 2024 IWMP. In addition to the new surface water treatment plant, the City has experienced explosive growth in Central Goodyear with unprecedented industrial growth and increased housing densities with the construction of a significant number of high-density developments. To illustrate the extent of growth since the last master plan, Figure 1.1 shows the water distribution system pipes that have been added to the Goodyear water system since the 2016 IWMP.

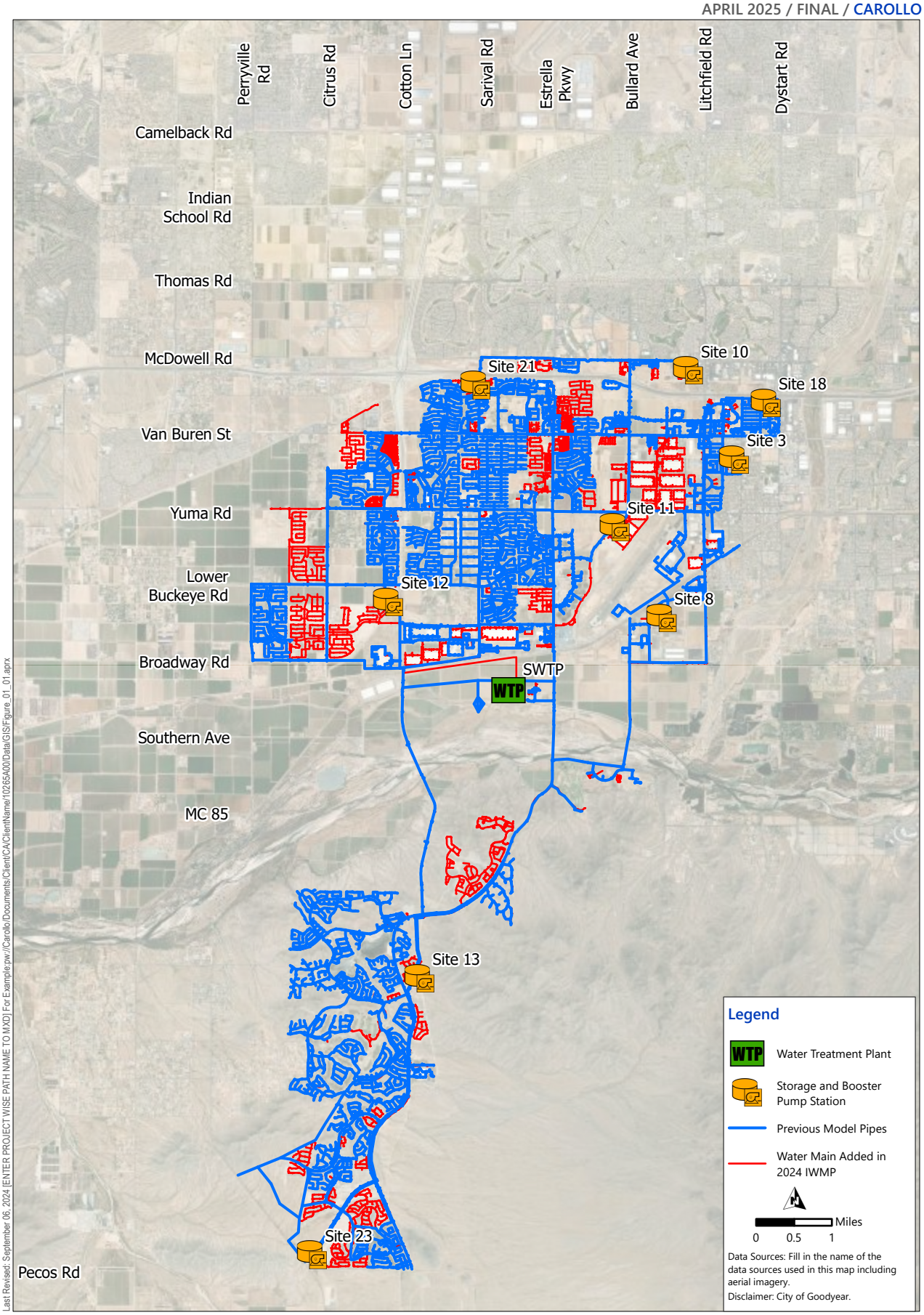


Figure 1.1 Water Mains Added to the Goodyear Water System Since the 2016 IWMP

In June 2023, the Arizona Department of Water Resources (ADWR) issued a determination that groundwater resources were over-allocated and new development within the West Salt River Valley groundwater sub-basin required a water supply other than groundwater. During this same time period, the City and neighboring cities need to renew their Designation of Assured Water (DAWS) to demonstrate that water supplies are adequate to support growth in the coming years. This DAWS renewal is being done against a backdrop of cuts to the Colorado River allocations due to drought, and an increased interest in development in the Rainbow Valley sub-basin which was not included in ADWR's moratorium on development using groundwater.

The City has several specific objectives which the 2024 IWMP addresses. These objectives include:

1. Submit an application and support approval of the City's modified DAWS.
2. Establish flow projections based on growth defined in the City's 2035 General Plan for development through 2040 that can be used to establish flow projections upon which the timing of major capital improvements can be established.
3. Determine the next steps to take to strengthen the City's water resource portfolio, including water supplies to serve future development in Rainbow Valley.
4. Evaluate the adequacy of the City's water, wastewater, and reclaimed water infrastructure for current and projected development, including land areas where housing density has grown, potentially increasing water demand.
5. Develop strategies to fully utilize the City's reclaimed water resource to augment the City's water resource portfolio.
6. Develop a Capital Improvement Program to help justify funding requirements and guide expansion of the water, wastewater, and reclaimed water systems.

1.3 2024 IWMP Chapters

1.3.1 Chapter 2: Planning Framework

The Planning Framework Chapter contains a definition of the Goodyear planning area boundary, and the City's land use plan that defines the type of development to be used throughout the City. The City's water billing data is used to develop water unit demands to calculate water use. The City's population projections are used to establish growth rates for the planning periods of the 2024 IWMP. Then the flow projections are established for the water, wastewater, and reclaimed water systems.

1.3.2 Chapter 3: Water Resources

The Water Resources Chapter summarizes the regulations governing water resources in the State of Arizona. The City's water resource portfolio is described, including surface water, groundwater, and reclaimed water supplies. Water resources are compared against the flow projections established in Chapter 2 for drought scenarios to determine the conditions under which the City can supply projected demands and the conditions under which demands will need to be curtailed.

1.3.3 Chapter 4: Water Infrastructure Master Plan

The Water Infrastructure Master Plan contains an evaluation of the City's water delivery system under current conditions and under the planning periods established for the 2024 IWMP. The timing of the next expansion to the surface water treatment plant is established, along with the timing of additional well production and treatment. The requirements to create a new pressure zone in the Central zone are established. Infrastructure needed to serve new development throughout the City, including Rainbow Valley is defined.

1.3.4 Chapter 5: Wastewater Infrastructure Master Plan

The Wastewater Infrastructure Master Plan contains an evaluation of the City's wastewater collection system under current conditions and under the planning periods established for the 2024 IWMP. The timing of the next expansion to the wastewater reclamation facilities is established. Infrastructure needed to serve new development throughout the City, including Rainbow Valley, is also defined.

1.3.5 Chapter 6: Reclaimed Water Infrastructure Master Plan

The Reclaimed Water Infrastructure Master Plan contains a plan to expand the reclaimed water system so that the City can fully benefit from the reclaimed water produced within the City. This plan includes improvements to the soil aquifer treatment (SAT) site, aquifer storage and recovery wells, and a spreading basin in Rainbow Valley.

1.3.6 Chapter 7: Capital Improvement Program

The Capital Improvement Program Chapter contains the unit costs that were used to identify the costs for recommended infrastructure components. Then the planning level costs for water, wastewater, and reclaimed water system projects are provided, phased by planning period. Projects that would be funded by developers are also given but are not included in the City's CIP project list.

CHAPTER 2 PLANNING FRAMEWORK

2.1 Introduction

This 2024 IWMP requires a common set of assumptions that define the service area, growth rate, timing of development, population growth, and flow projections for water resources, and the water, wastewater, and reclaimed water infrastructure systems. Planning water resources are also needed as part of the City's modified DAWS application that is being completed as a part of the IWMP. A common set of assumptions is critical to make sure that capital projects are coordinated among water and wastewater systems, and that a defensible set of Capital Improvement Projects (CIP) is provided in the IWMP.

The scope of work for the City's IWMP includes this planning framework that defines the water, wastewater, and reclaimed water flow projections for the existing (2023), five-year (2028), ten-year (2033), 15-year (2038), and buildout planning periods. The recommendations of this IWMP are based on this planning framework.

The planning framework chapter includes the following major sections:

- Study Area.
- Land Use Plan.
- Population Growth Projections.
- Water Demand Projections.
- Wastewater Flow Projections.
- Reclaimed Water Flow Projections.

2.2 Study Area

The City is located in Maricopa County, approximately 13 miles west of central Phoenix. The Interstate Highway 10 (I-10) passes through the northern part of the City and crosses the Arizona State Route 303 North (AZ-303). The Gila River runs through the planning area approximately 5 miles south of the I-10. The City Planning Area encompasses 250 square miles (sq mi). The planning area, shown in Figure 2.1, includes City boundaries as well as the five water planning areas (WPA).

- Water Planning Area 1 (WPA 1) consists of the EPCOR and Liberty Utilities Planning Areas. The population and water demand projections for the EPCOR and Liberty Utilities area are not included in this plan. However, the City collects wastewater from the EPCOR service area, so the wastewater flow projections are included for the EPCOR service area. Figure 2.2 presents the wastewater service area boundary.
- Water Planning Area 2 (WPA 2) is from the I-10 to the Gila River. Arizona Water Company provides service to a small area on the northeast corner of Van Buren and Perryville Road. The Utility of Greater Buckeye Inc. provides service to an area at the southeast corner of Yuma Road and Citrus Road. There are also some areas that have homes with septic systems and therefore do not contribute flows to the City's wastewater system.

- Water Planning Area 3 (WPA 3) is located between the Gila River to Pecos Road. Estrella Mountain Ranch is the primary development in this planning area, but it also includes King Ranch, Sierra Vista Foothills, and a portion of Terrasante.
- Water Planning Area 4 (WPA 4) is located between Pecos Road and Atterson Road. This planning area is currently undeveloped but has several planned developments, including a portion of Terrasante, Rainbow Valley, Estrella Highlands, Estrella, Madeira, and Arnold Baker 320.
- Water Planning Area 5 (WPA 5) is located between Patterson Road to the City's southern planning area. Amaranth is the primary planned development in WPA 5.

2.3 Land Use Plan

This section describes the City's land use plan. Land use is used to establish water demand projections which then become wastewater and reclaimed water flows.

Land use classifications were obtained from the City's General Plan 2035, supplemented by specific development plans when available. In the absence of a development report, the Geographic Information System (GIS) aerial photographs were used to determine the type of development. For residential land areas, the parcel layer was used to determine the housing density per acre. When needed, land use classifications in the GIS were modified to more accurately represent land uses corresponding to the actual development.

Figure 2.3 presents the land use classifications used for this IWMP.

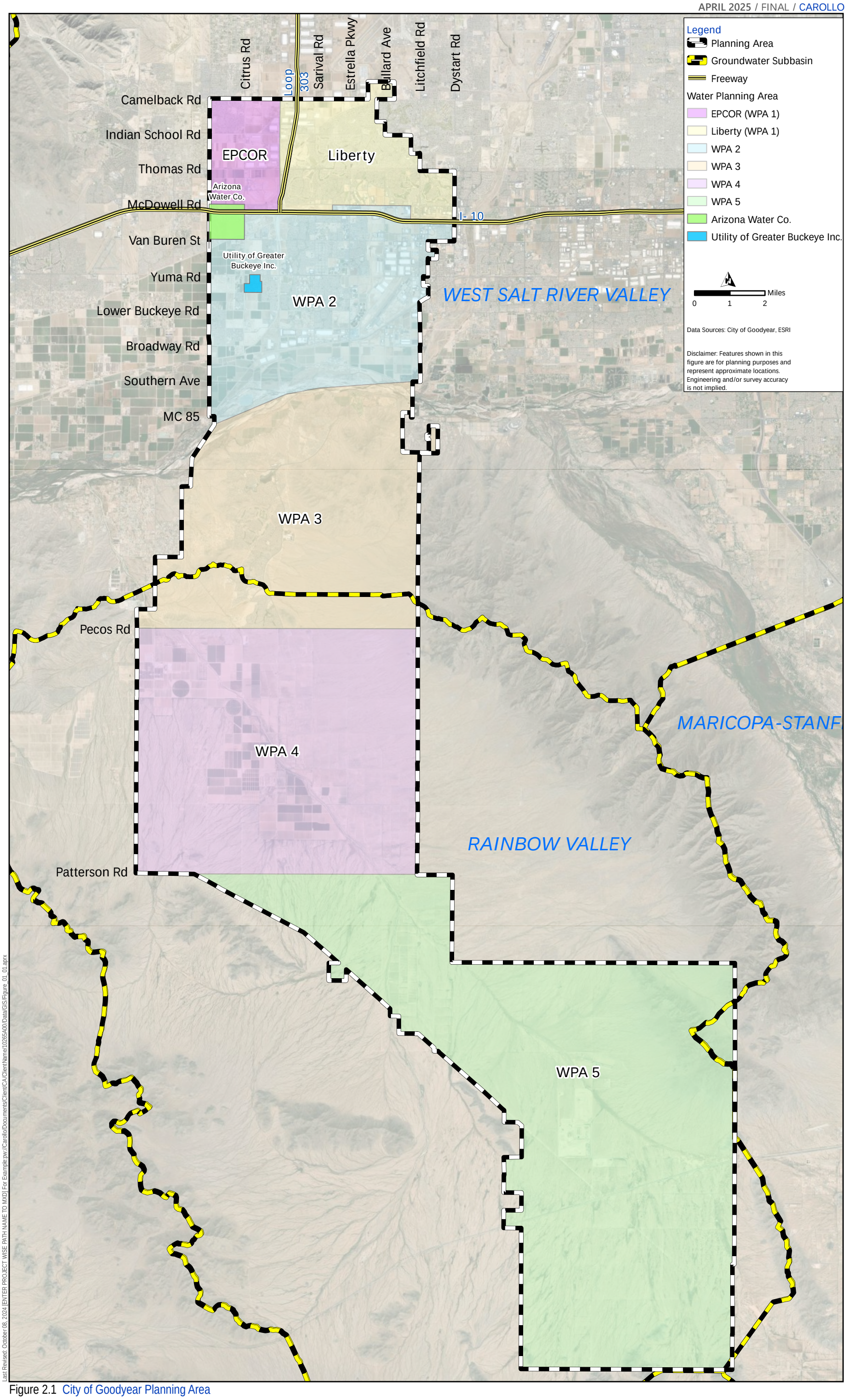
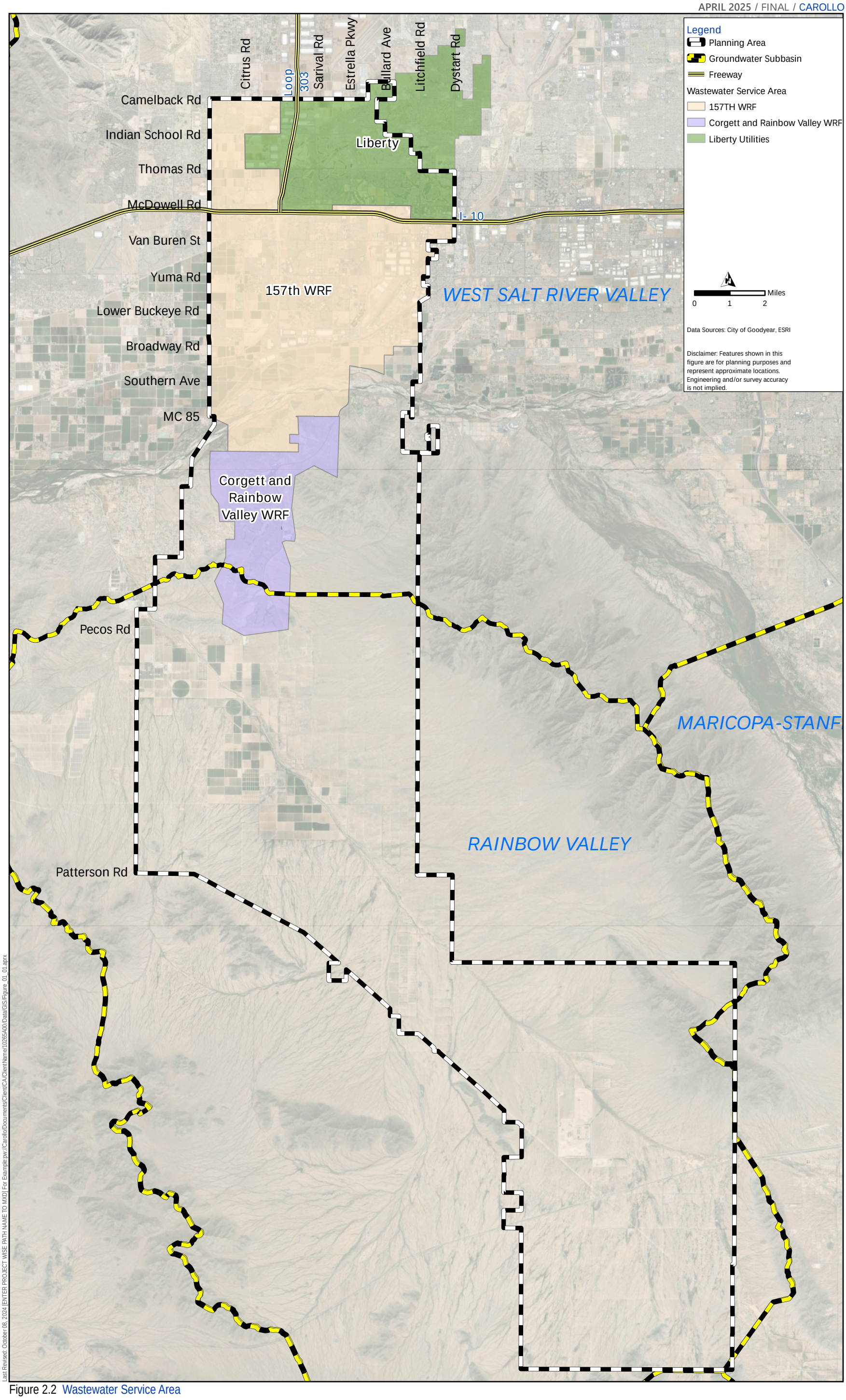
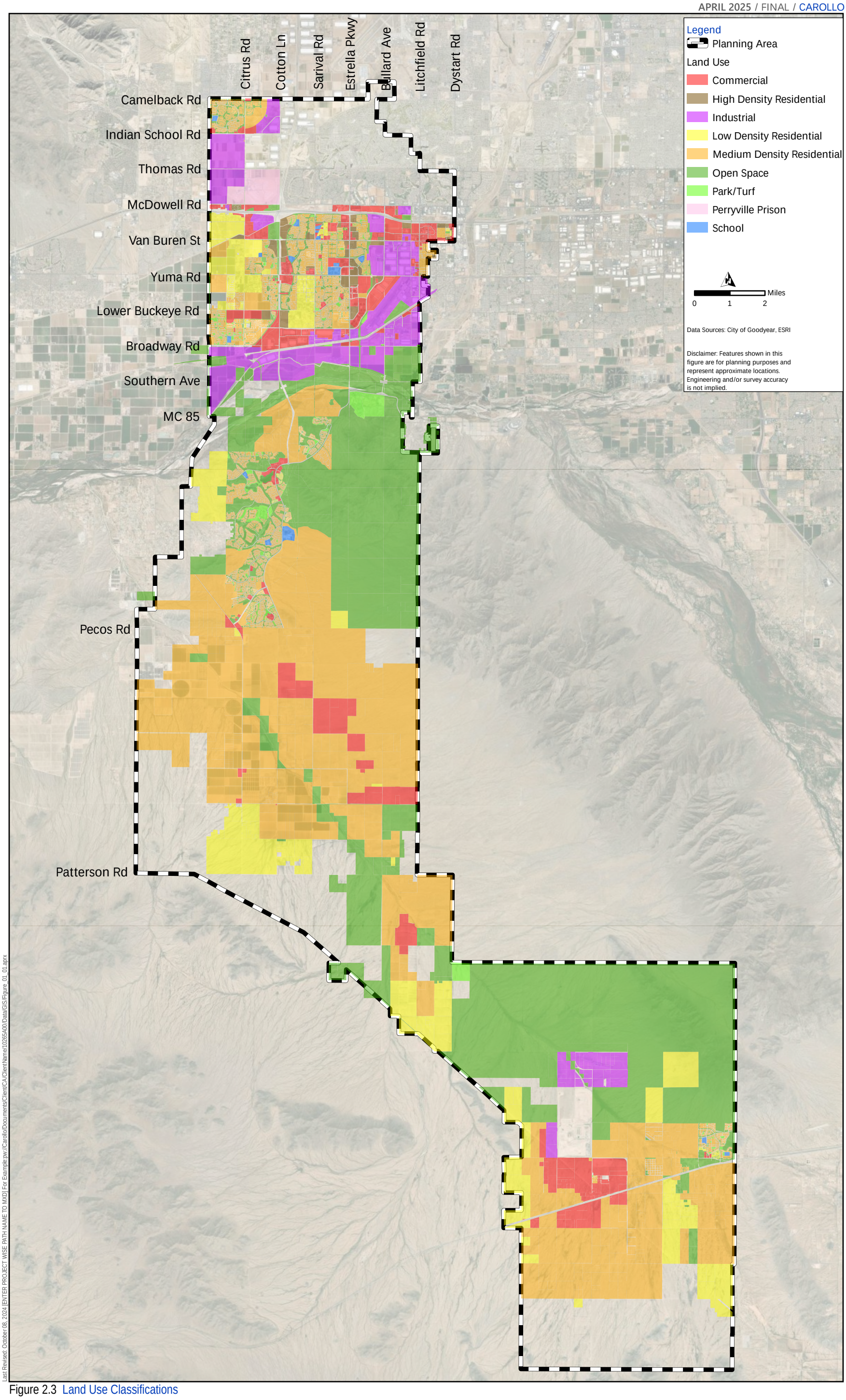


Figure 2.1 City of Goodyear Planning Area



Last Revised: October 09, 2024 [ENTER PROJECT WISE PATH NAME TO MXD] For Example:pw://Carollo/Documents/Client/CA/ClientName/110265A00/Data/GIS/Figure_01_01.aprx

Figure 2.2 Wastewater Service Area
CITY OF GOODYEAR
2024 INTEGRATED WATER MASTER PLAN



Last Revised: October 08, 2024 [ENTER PROJECT WISE PATH NAME TO MXD] For Example:pw://Carollo/Documents/Client/CA/ClientName/10265A00/Data/GIS/Figure_01_01.aprx

Figure 2.3 Land Use Classifications
CITY OF GOODYEAR
2024 INTEGRATED WATER MASTER PLAN

2.4 Population Growth Projections

Estimated population growth projections in the IWMP are used to align the rate of water demand growth throughout the City with the anticipated rate of population increase. The population projection used in this IWMP is influenced by the City's population projection in the 2022 revised ADWR report. Population growth was also set to align with the population growth rate in the general Plan 2035.

A few assumptions were made on the land use density to predict the estimated annual growth. The residential land use has an assumed population density of 2.3 people/DU (dwelling unit). Low-density, medium-density, and high-density residential housing densities are assumed to be 4, 6, and 18 DU per acre respectively.

Table 2.1 presents the historical population for the years 2019 to 2023 and the projected population through buildout. Also shown in Table 2.1 is the water service area population, which excludes the population north of McDowell Road that is served by EPCOR and Liberty Utilities. As shown in Table 2.1, the City's water service area population is expected to more than double by 2038, increasing from 63,830 people in 2023 to 132,239 in 2038. The population growth rate for the planning period ranges from 5.0 percent (years 2023 to 2028) to 3.8 percent (years 2033 to 2038) per year. Figure 2.4 presents the historical water service area population for years 2019 to 2023 and projected water and sewer service area population through 2038.

Table 2.1 City of Goodyear Water and Wastewater Service Area Historical and Projected Populations

Year	Population In Water Service Area(1)	Population in Sewer Service Area(2)
2019	53,939	
2020	58,896	
2021	58,794	
2022	63,830	
2023	65,367	71,971
2028	83,371	92,530
2033	104,713	116,811
2038	126,435	139,689
Buildout	706,762	723,867

Notes:
(1) Historical water service area population is from the City of Goodyear Water Withdrawal and Use Annual Report.
(2) Historical population in the sewer service area of WPA is not known.

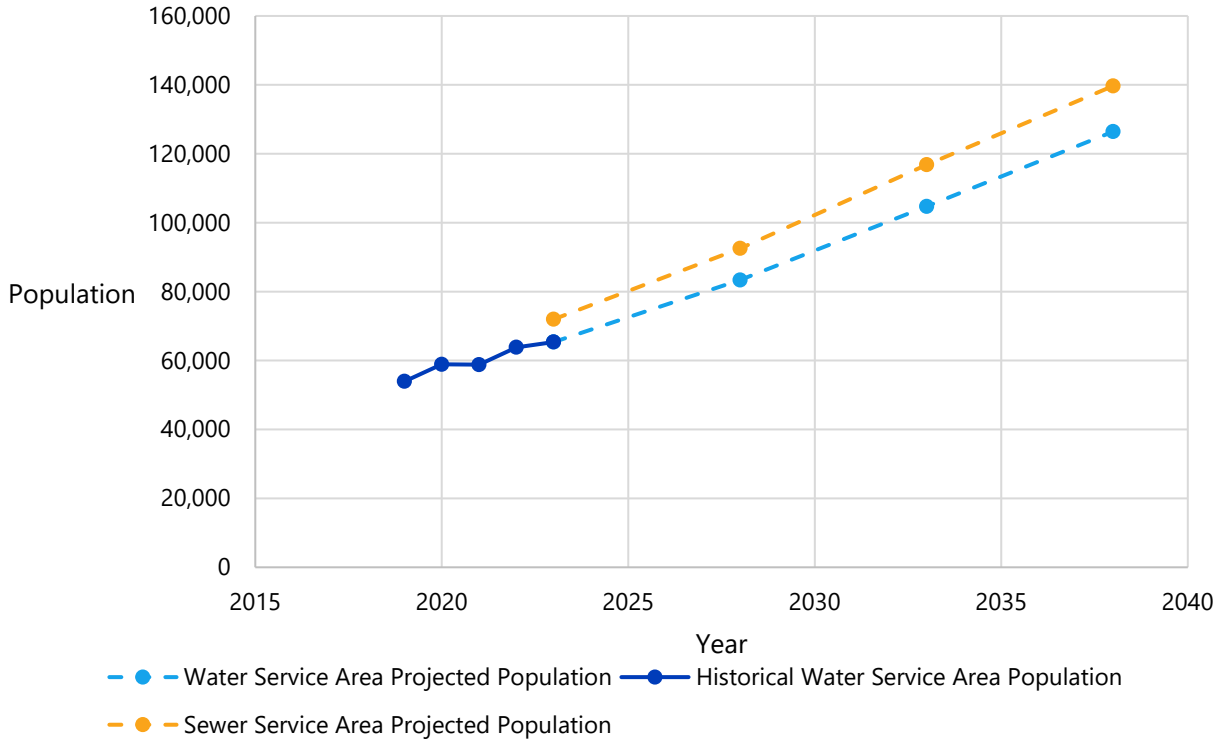


Figure 2.4 Population Growth Projections

2.4.1 Future Development

The rate and location of growth within the City was established based on population growth estimates applied to undeveloped lands and on the expected timing of future development. Undeveloped lands that are expected to develop in the future were assigned a developed percentage for each future planning period. The development percentages were then adjusted as required to match the population projections. Land areas for which development plans are not established were assumed to be fully developed by buildout.

There are several residential developments in WPAs 3 and 4 that are expected to start construction within the next fifteen years. These developments are Arnold Baker 320, Estrella, Estrella Highlands, King Ranch, Sierra Vista Foothills, Rainbow Valley, and Terrasante. Figure 2.5 presents the planned developments in WPAs 3, 4, and 5.

The status of development in each planning period is presented graphically to visualize the rate and location. Figure 2.6, Figure 2.7, Figure 2.8, and Figure 2.9 present the 2023, 2028, 2033, 2038 development percentages, respectively. Figure 2.10 presents the areas that are assumed to be fully developed by buildout. The lands that are shown as developing by buildout are the planned developments that currently have an analysis of assured water supply, or other means of obtaining a water supply. Although other land areas are shown as potentially developing based on the land use plan in Figure 2.3, without a potential water supply, development planning for these land areas may be deferred to a future time when the necessary water supplies are identified.

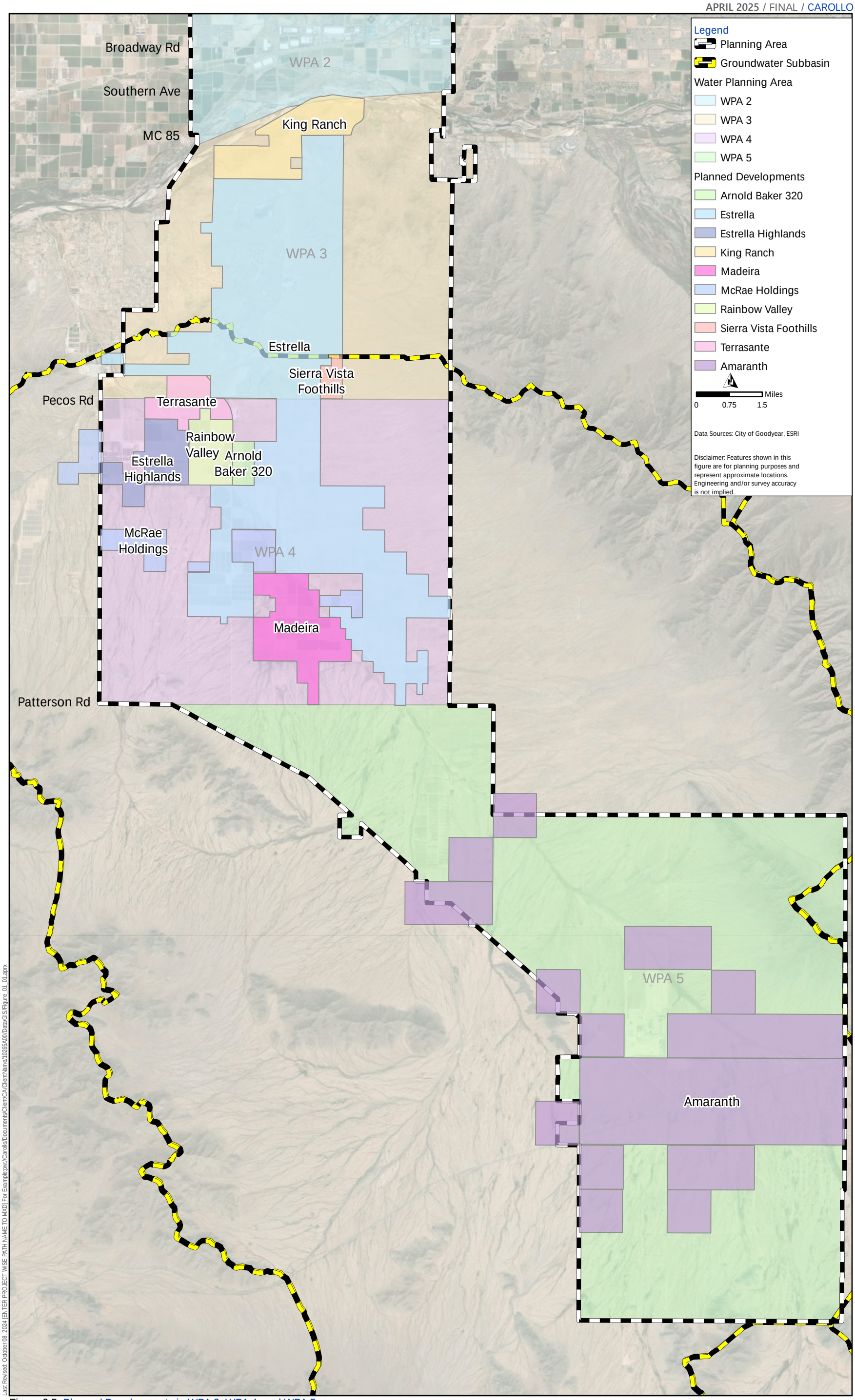


Figure 2.5 Planned Developments in WPA 3, WPA 4, and WPA 5

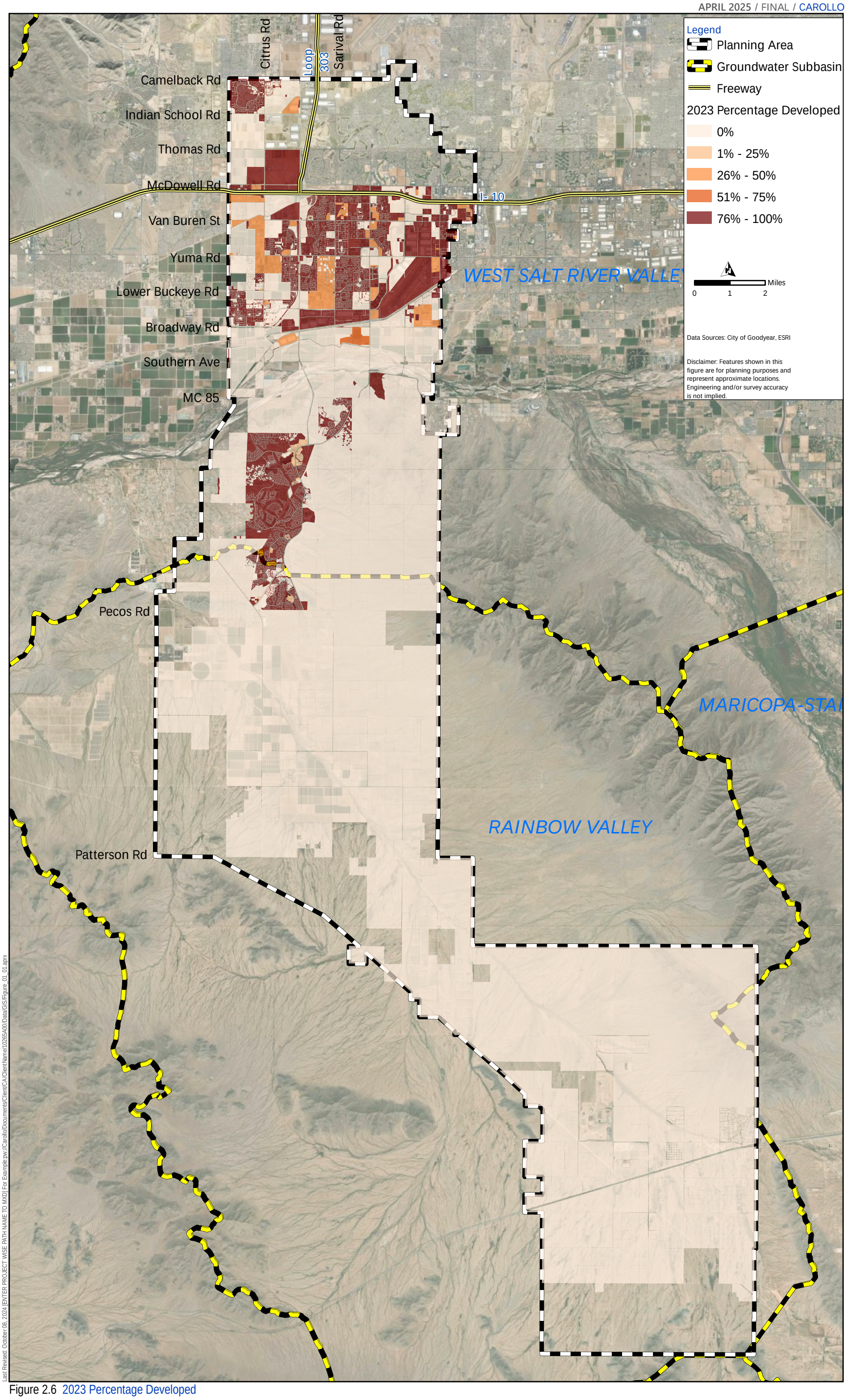


Figure 2.6 2023 Percentage Developed

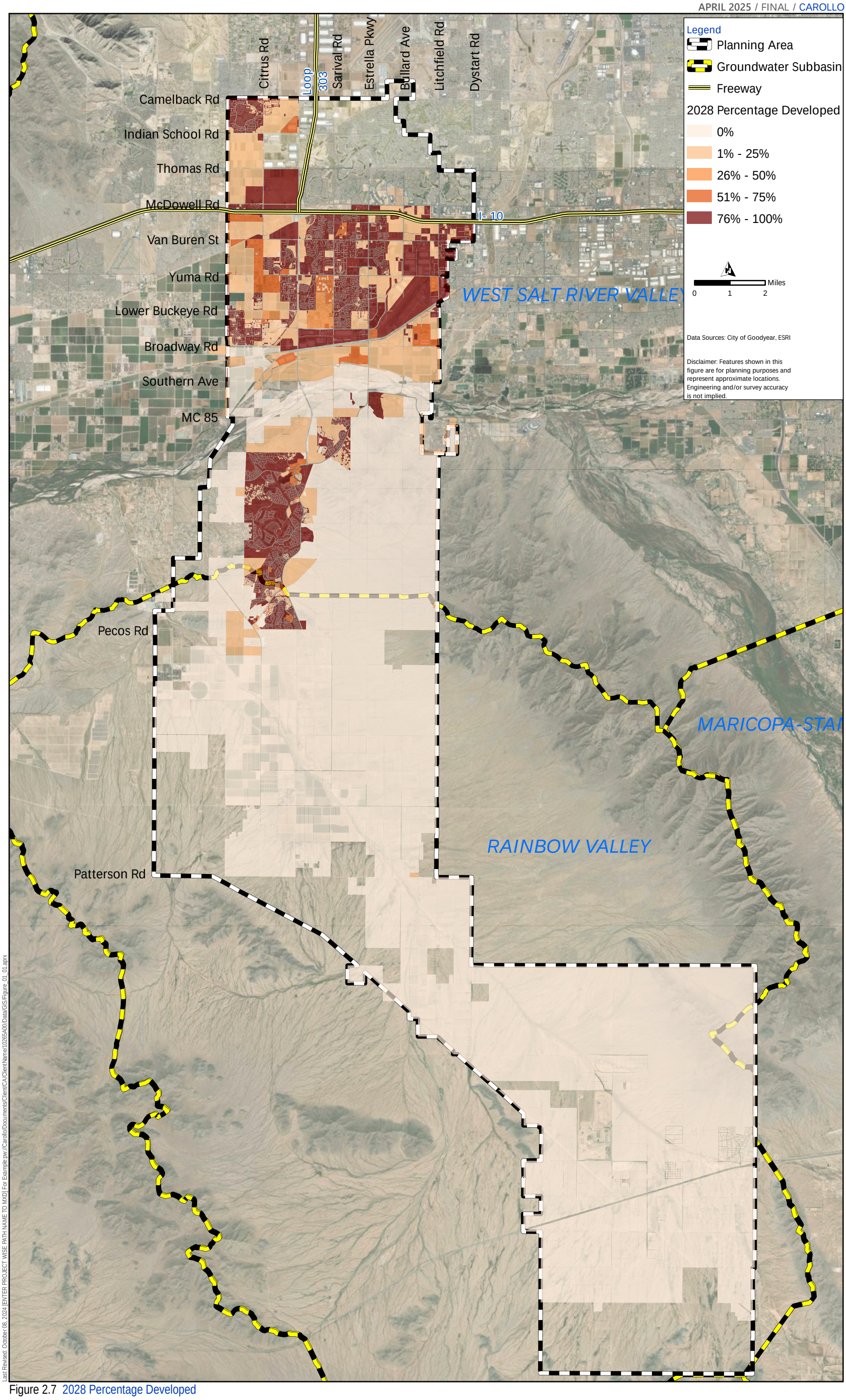
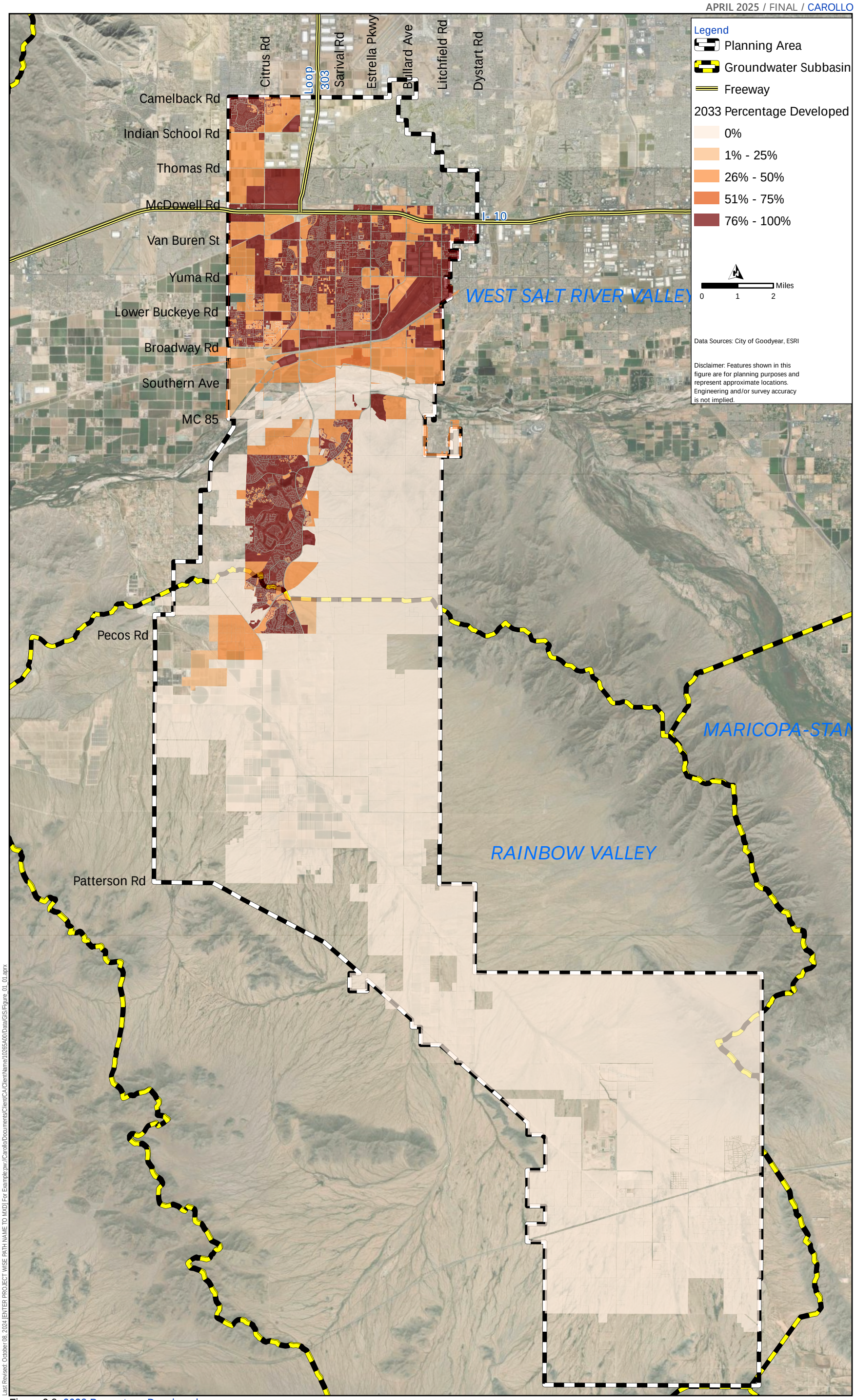


Figure 2.7 2028 Percentage Developed
CITY OF GOODYEAR
2024 INTEGRATED WATER MASTER PLAN



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Figure 2.8 2033 Percentage Developed
CITY OF GOODYEAR
2024 INTEGRATED WATER MASTER PLAN

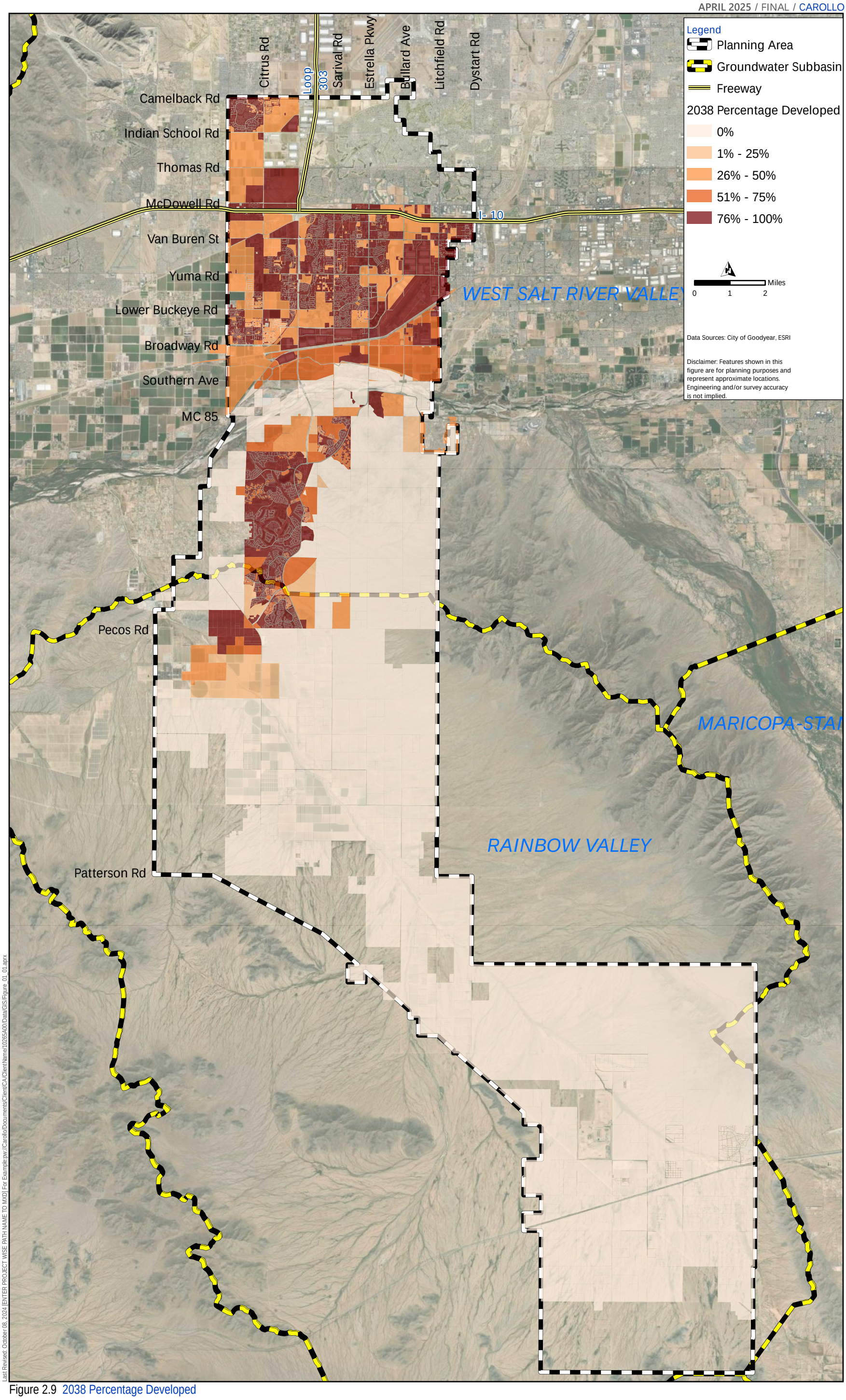


Figure 2.9 2038 Percentage Developed
CITY OF GOODYEAR
2024 INTEGRATED WATER MASTER PLAN

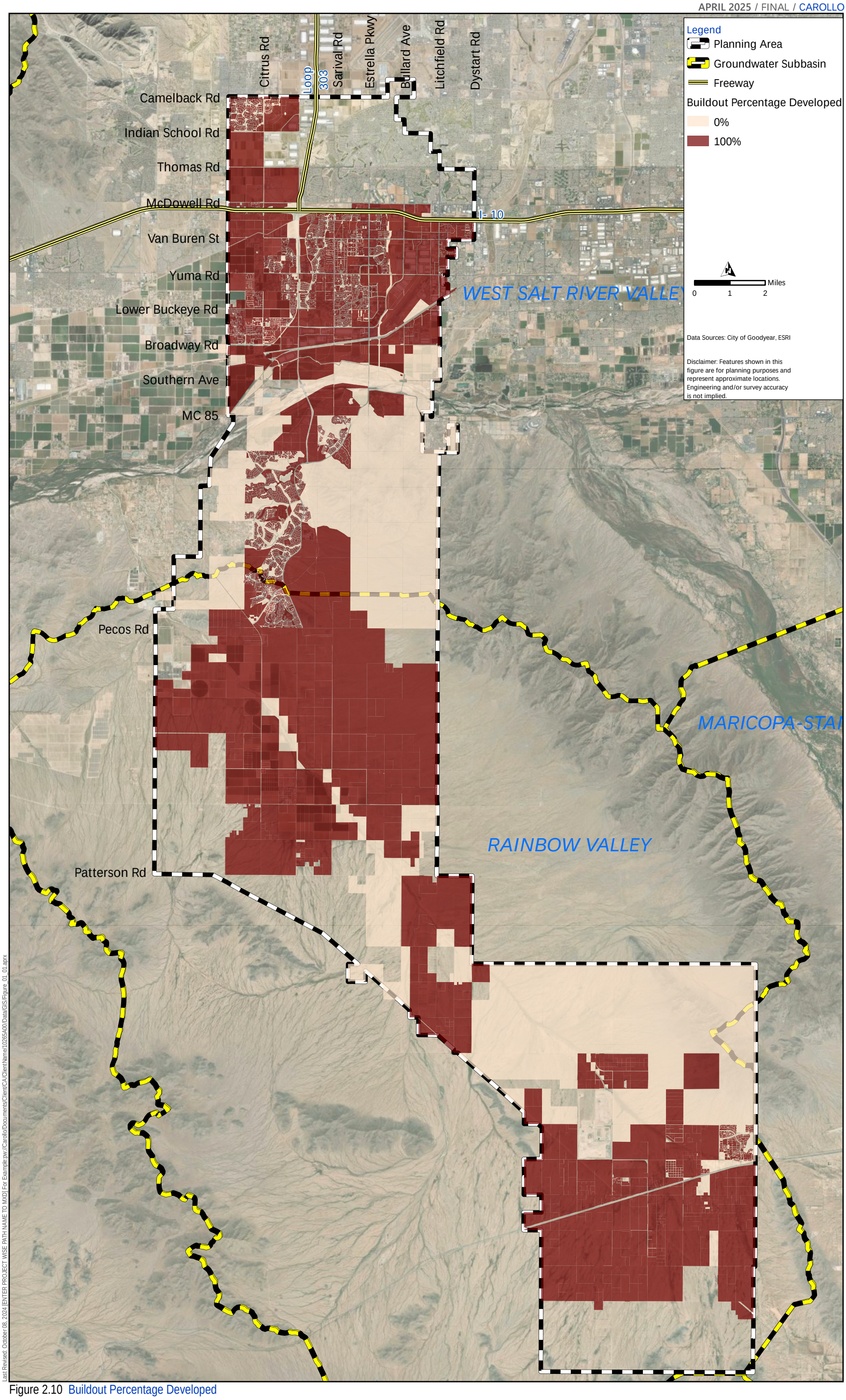


Figure 2.10 Buildout Percentage Developed

2.5 Water Demand Projections

This section summarizes historical water demand and consumption levels, unit water demands by land use classification, and the projected future water demands.

2.5.1 Historical Water Consumption and Demands

2.5.1.1 Historical Water Consumption and Demands

The City's historical water consumption and demands were evaluated to establish the following:

- Daily peaking factors.
- Unit water demands by land use classification.

The unit water demands by land use classification serve as the basis for the future water demand projections. Future development by land use category is assumed to have the same water use per acre as existing development.

Table 2.2 presents the City's yearly water demand value by source for the years 2017 through 2023. Figure 2.11 presents the City's yearly potable water demand graphically.

Table 2.2 Historical Water Demand by Source

Year	Well Total (mgd)	Surface Water (mgd)	Liberty Utilities (mgd)(1)	Total (mgd)
2017	8.5	0.0	0.1	**8.6**
2018	8.5	0.0	0.3	**8.8**
2019	8.5	0.0	0.3	**8.8**
2020	10.2	0.0	0.1	**10.4**
2021	11.0	0.8	0.0	**11.9**
2022	7.7	3.8	0.0	**11.5**
2023	8.9	3.6	0	**12.5**

Notes:
mgd - million gallons per day
(1) Water delivered to Liberty Utilities.

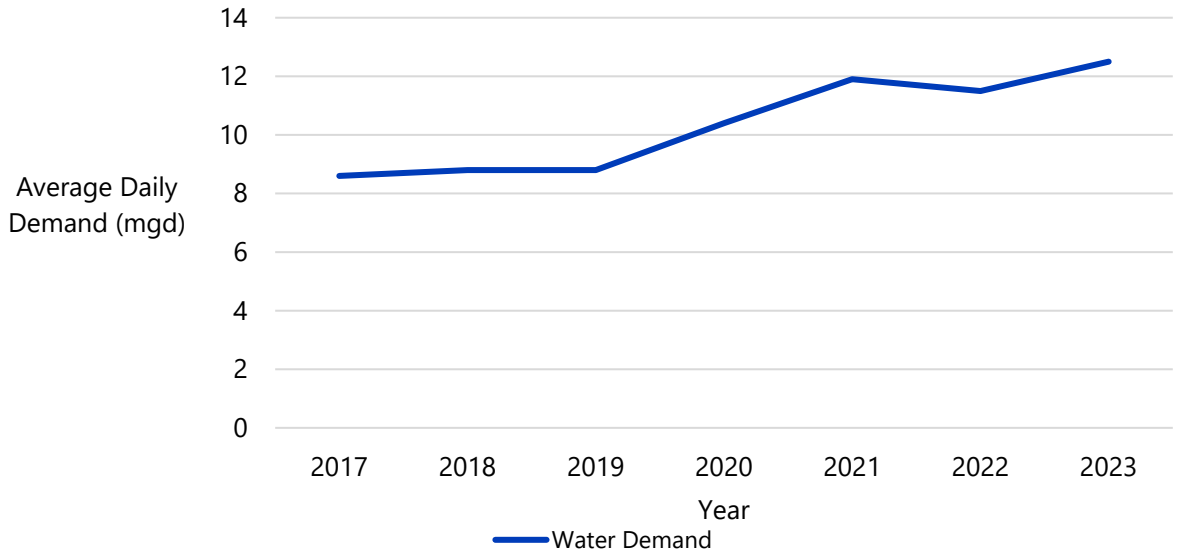


Figure 2.11 Average Water Demand for Years 2017 through 2023

The City's customer billing database contains monthly customer billing information for approximately 21,405 accounts, and each account contains information on water use, customer classification, and geographic location. Table 2.3 presents the City's monthly water consumption for the years 2019 through 2023. Figure 2.12 presents the monthly water consumption for each year. As shown in Figure 2.12 the maximum month water consumption changes seasonally based on weather and customer usage patterns. Peaking factors developed from this monthly data are used to adjust water demands on a seasonal basis to plan infrastructure needs during peak demand periods. The City's maximum water demand day generally falls into the maximum month. The maximum daily demand is usually 10 to 15 percent higher than the maximum monthly demand. The maximum day (MD) to average daily peaking factor of 1.7 was used in the 2016 IWMP and remains a reasonable factor to use to estimate maximum daily demands.

Table 2.3 Historical Monthly Consumption

Month	2019	2020	2021	2022	2023
January	5.9	5.8	5.6	5.9	6.1
February	5.6	5.4	5.3	6.0	5.9
March	5.2	5.0	5.9	8.2	7.2
April	5.3	6.7	8.6	7.6	7.2
May	8.2	7.3	8.6	9.5	9.5
June	7.8	9.0	10.8	11.8	10.9
July	8.8	12.8	12.4	11.8	12.5
August	11.5	11.0	9.5	10.8	14.3
September	9.6	11.8	9.6	13.4	14.0
October	8.2	10.6	10.3	9.9	12.9
November	9.1	9.1	8.5	10.6	11.0
December	5.3	9.2	9.4	7.1	10.4
Maximum	**11.5**	**12.8**	**12.4**	**13.4**	**14.3**
Minimum	**5.2**	**5.0**	**5.3**	**5.9**	**5.9**
Average	**7.5**	**8.7**	**8.7**	**9.4**	**10.2**
Maximum Month/Average Day Peaking Factor	**1.5**	**1.5**	**1.4**	**1.4**	**1.4**

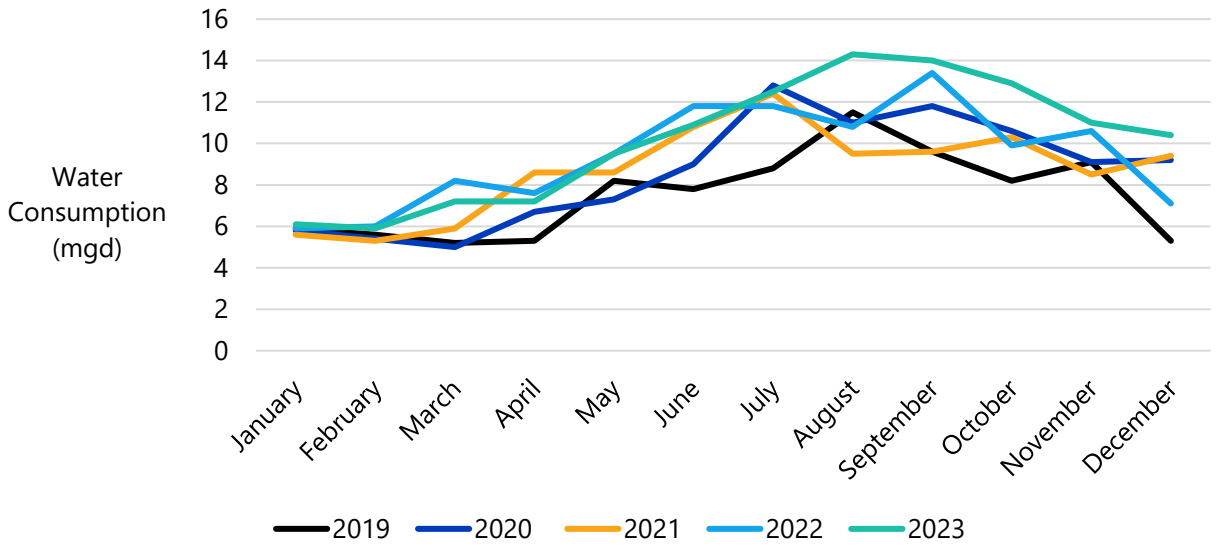


Figure 2.12 Monthly Billing Data for Years 2019 through 2023

2.5.2 Unit Water Demands

Unit water demands are an estimate of average annual water use expressed on a per-acre basis for each land use classification. Unit water demands were established based on 2022 and 2023 water consumption data, currently developed land within the study area, and the 2022 ADWR Annual Water Use Report. The unit water demands then served as the basis for estimating future water use for undeveloped lands.

The unit water demands were calculated using the following steps:

1. The City's customer billing records for 2023 were organized and summed up by land use type.
2. The parcels within the study area were designated as either developed or undeveloped to obtain a measure of the developed acreage. The developed net acreage was assumed to be 85 percent of gross developed acreage to account for streets, sidewalks, alleys, etc. that are covered by the parcel but do not contribute to the flow.
3. Total water consumption was divided by the developed net acres for each land use classification to get the unit water demands.

Table 2.4 presents the unit water demands calculated from billing data and land use, which were then used to develop demand projections in each planning year. The water demand factors in Table 2.4 are lower than the planning level unit demand factors that the City uses for planning new developments. It is common practice, and appropriate to use higher planning level unit demand factors for development that has not yet been constructed to make sure that infrastructure is appropriately sized fur future flows. The unit demand factors based on actual water use are appropriate for water resources and treatment plant infrastructure planning.

Table 2.4 Residential Water Demand Factors

Residential/Non-Residential	Land Use Classification	Unit Water Demand Used in the IWMP Projections (gpd/ac)
Residential	Low Density Residential	400
	Medium Density Residential	1,600
	High Density Residential	1,900
Non-Residential	Commercial	690
	Industrial	520
	Park/Turf	1,620
	School	1,870
	Open Space	0

gpd/ac - gallons per day per acre

The calculated unit water demands were compared with the consumption based on customer billing data as a check on the land use-based water consumption projections. Table 2.5 presents the comparison between 2023 billed water consumption and 2023 projected water consumption by land use classification. The results show that the calculated consumption is close to the billing data to within 0.8 percent, which is a strong correlation.

The City has estimated non-revenue water at 6.3 percent. Non-revenue water is the water not accounted for in underreporting meters and leakage in the water distribution system. In Arizona, non-revenue water is expected to be below 10 percent, and the City is effectively managing non-revenue water. Unmetered water is primarily water used by the City in the water treatment process. This water includes the brine streams from water production Sites 11 and 12 that have reverse osmosis (RO) treatment, and process water from the surface water treatment plant. This water is delivered to the wastewater collection system and is not released into the water distribution system. Construction water is used primarily for dust control at construction sites. The delivery point for this water varies and would be eliminated with buildout.

Table 2.5 Unit Demand Factor and Billing Data Comparison

Land Use Classification	Developed Acreage (acres)	Unit Water Demand (gpd/ac)	Calculated Water Demand (mgd)	2023 Customer Billing Consumption (mgd)
Low Density Residential	459	400	0.2	0.2
Medium Density Residential	3,886	1,600	6.2	6.4
High Density Residential	149	1,900	0.3	0.4
Commercial	1,768	690	1.2	1.3
Industrial	1,783	520	0.9	0.7
Park/Turf	512	1,620	0.8	0.9
School	259	1,870	0.5	0.2
Open Space	0.00	0.00	0.00	0.0
Total Customer Consumption (mgd)			**10.1**	**10.2**
Non-Revenue Water (mgd)(1)			**0.65**	**0.64**
Unmetered + Construction(3)			**1.4**	**1.39**
Water Demand (mgd)			**12.15**	**12.23**
Percent Difference			**- 0.65 %**	

Notes:
(1) Non-revenue water is calculated as 6.3% of the total water consumption.
(2) Water Demand is equal to Total Customer Consumption + Non-Revenue Water + Unmetered + Construction (estimated to be 1.4 mgd).
(3) The Unmetered + Construction for the 2023 Customer Billing Consumption is based on the 2022 ADWR Report. The total demand from construction is 0.35 mgd and the total demand for unmetered demand is 1.04 mgd.

Table 2.6 contains the unit water demands to be used for development planning purposes for sizing infrastructure in developments that have not yet been constructed.

Table 2.6 Unit Demands to be used for Development Planning

Land Use	Allocation	Unit
Single Family	402	gpd/unit
Single Family (WPA 3)	317	gpd/unit
Multi-Family	135	gpd/Unit
Commercial	1700	gpd/ac
Industrial	1000	gpd/ac

2.5.3 Water Demand Projections

The following assumptions were made in preparing the water consumption and demand projections:

- Water consumption for the parcels that are currently 100 percent developed were assumed to be the same as 2023 consumption.
- Water consumption for the parcels that are currently undeveloped were calculated based on the estimated developed acreage multiplied by the unit water demand for the land use classification of the parcel.
- Water demand projections are based on the water consumption plus an additional 6.3 percent due to non-revenue water and another 1.40 mgd due to unmetered plus construction use. The 1.40 mgd is an estimate based on the 2022 ADWR Report. The unmetered plus construction water use is used for flow projections but will not be included in the hydraulic model.

Table 2.7 presents the historical and projected water consumption and water demand. Figure 2.13 presents the water demand projections graphically. Table 2.8 summarizes the water demand projections by land use classification. The City's water demand is projected to increase by 70 percent in the next 15 years from 12.3 mgd to 20.3 mgd, with medium density residential classifications constituting 4.7 mgd of the increased demand.

Table 2.7 Historical and Projected Water Consumption and Demand

Year	Water Consumption (mgd)	Water Demand (mgd)
Historical(1)		
2019	7.5	8.8
2020	8.7	10.4
2021	8.9	11.9
2022	9.4	11.4
2023	10.3	12.3
Projected		
2028	12.0	14.2
2033	14.7	17.0
2038	17.8	20.3
Buildout	**79.9**	**84.9**

Notes:
(1) Historical water demand is from the City of Goodyear Water Withdrawal and Use Annual Report.

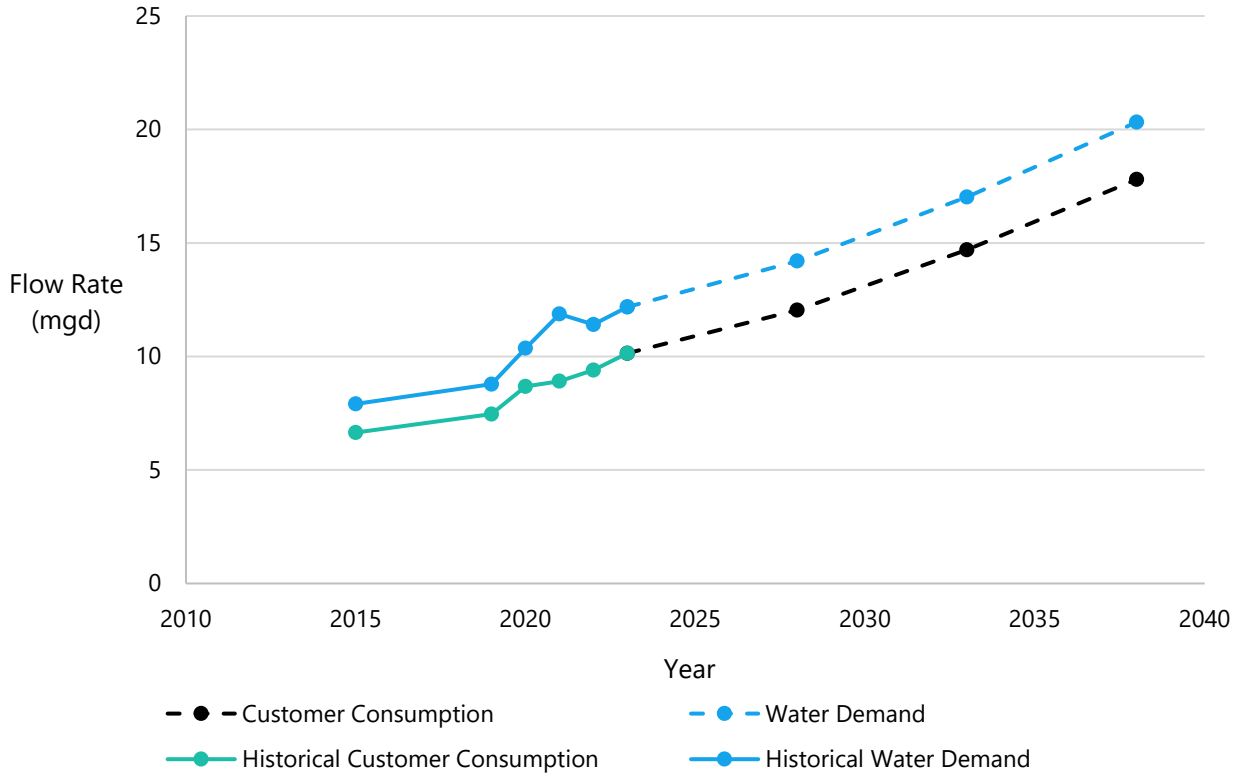


Figure 2.13 Historical and Projected Water Consumption and Water Demand

Table 2.8 Water Demand Projections by Land Use Classification

Land Use Classification	Projected Water Demand (mgd)				
	2023	2028	2033	2038	Buildout
Low Density Residential	0.18	0.28	0.39	0.43	4.10
Medium Density Residential	6.22	6.99	8.55	10.87	63.27
High Density Residential	0.28	0.69	0.87	1.00	1.44
Commercial	1.22	1.43	1.67	1.80	5.38
Industrial	0.93	1.25	1.67	2.04	3.36
School	0.48	0.47	0.48	0.48	0.53
Park/Turf	0.83	0.94	1.07	1.18	1.79
Total Customer Consumption	**10.14**	**12.05**	**14.70**	**17.80**	**79.87**
Non-Revenue Water (mgd)(1)	**0.64**	**0.76**	**0.93**	**1.12**	**5.03**
Unmetered + Construction	**1.40**	**1.40**	**1.40**	**1.40**	**0.00**
Water Demand (mgd)	**12.18**	**14.21**	**17.03**	**20.32**	**84.90**

Notes:
(1) Non-revenue water is calculated as 6.3% of the total water Consumption.

Table 2.9 and Table 2.10 present the projected water demand categorized by planning area and by Rainbow Valley Sub-basin developments. WPA 2 shows the greatest increase in water demand through 2038 because this zone is closest to the existing water infrastructure and is more likely to expand in the near-term. An understanding of water demands by planning area is useful in planning infrastructure requirements.

The developments in the Rainbow Valley Sub-basin are projected to have a demand of approximately 3.2 mgd in the next 15 years. Of those developments, Estrella contributes the highest demand and has the highest growth within the planning periods.

Table 2.9 Water Demand Projections by Planning Area

Water Planning Area	Projected Water Demand (AFY)				
	2023	2028	2033	2038	Buildout
WPA 2	8,980	10,380	11,760	12,670	14,820
WPA 3	4,680	5,400	6,560	8,110	13,980
WPA 4	0.00	140	760	1,950	36,770
WPA 5	0.00	0	0	0	29,580
Total	**13,660**	**15,920**	**19,080**	**22,730**	**94,610**

AFY - acre-feet per year

Table 2.10 Water Demand Projections by Rainbow Valley Sub-basin Developments

Developments by Planning Area	Projected Water Demand (AFY)				
	2023	2028	2033	2038	Buildout
WPA 3					
Estrella (Inside the Rainbow Valley Sub-basin)	870	1,000	1,320	1,760	3,170
Sierra Vista Foothills	0	0	0	240	460
Terrasante	0	50	230	520	520
Outside the Identified Developments	0	0	0	0	140
Total	**870**	**1,050**	**1,550**	**2,520**	**4,290**
WPA 4					
Arnold Baker 320	0	0	0	140	510
Estrella (Inside the Rainbow Valley Sub-basin)	0	0	0	0	12,840
Estrella Highlands	0	0	250	560	2,230
Madeira	0	0	0	0	3,300
McRae Holdings	0	0	0	0	2,130
Rainbow Valley	0	90	180	610	1,610
Terrasante	0	40	330	640	640
Outside the Identified Developments	0	0	0	0	13,510
Total	**0**	**130**	**760**	**1,950**	**36,770**
WPA 5					
Amaranth	0	0	0	0	19,700
Outside the Identified Developments	0	0	0	0	9,880
Total	**0**	**0**	**0**	**0.00**	**29,580**

2.5.4 Current, Committed, and Projected Water Demands

The City has designated parcels as a current, committed, and planned for water resources planning purposes. A parcel categorized as current has been developed and is receiving water. A parcel classified as committed has been platted and the City has a formal commitment to supply water. Parcels classified as planned have a future water use estimate that provides an indication of how much water needs to be obtained to serve the land areas through buildout. The City reports the committed water resources each year on the ADWR annual report to demonstrate that the City has enough water supplies to serve water to customers that will be coming. The parcel designation is updated with changes on an ongoing basis. Figure 2.14 presents the parcels labeled as current, committed, and planned for the master plan development. Parcel designations may change in future planning years. Table 2.11 summarizes the current, committed, and planned customer consumption and required demand.

Table 2.11 Water Demand Projections by Current, Committed, and Planned

Land Use	Net Acres	Consumption (AFY)	Demand (AFY)
Current(1)	10,116	11,290	13,570
Committed	2,024	3,480	3,700
Projected	53,979	74,550	79,250
Total Water Demand	**66,119**	**89,320**	**96,520**

Notes:
(1) Current Demand includes Unmetered + Construction of 1,568 AFY (1.4 mgd).

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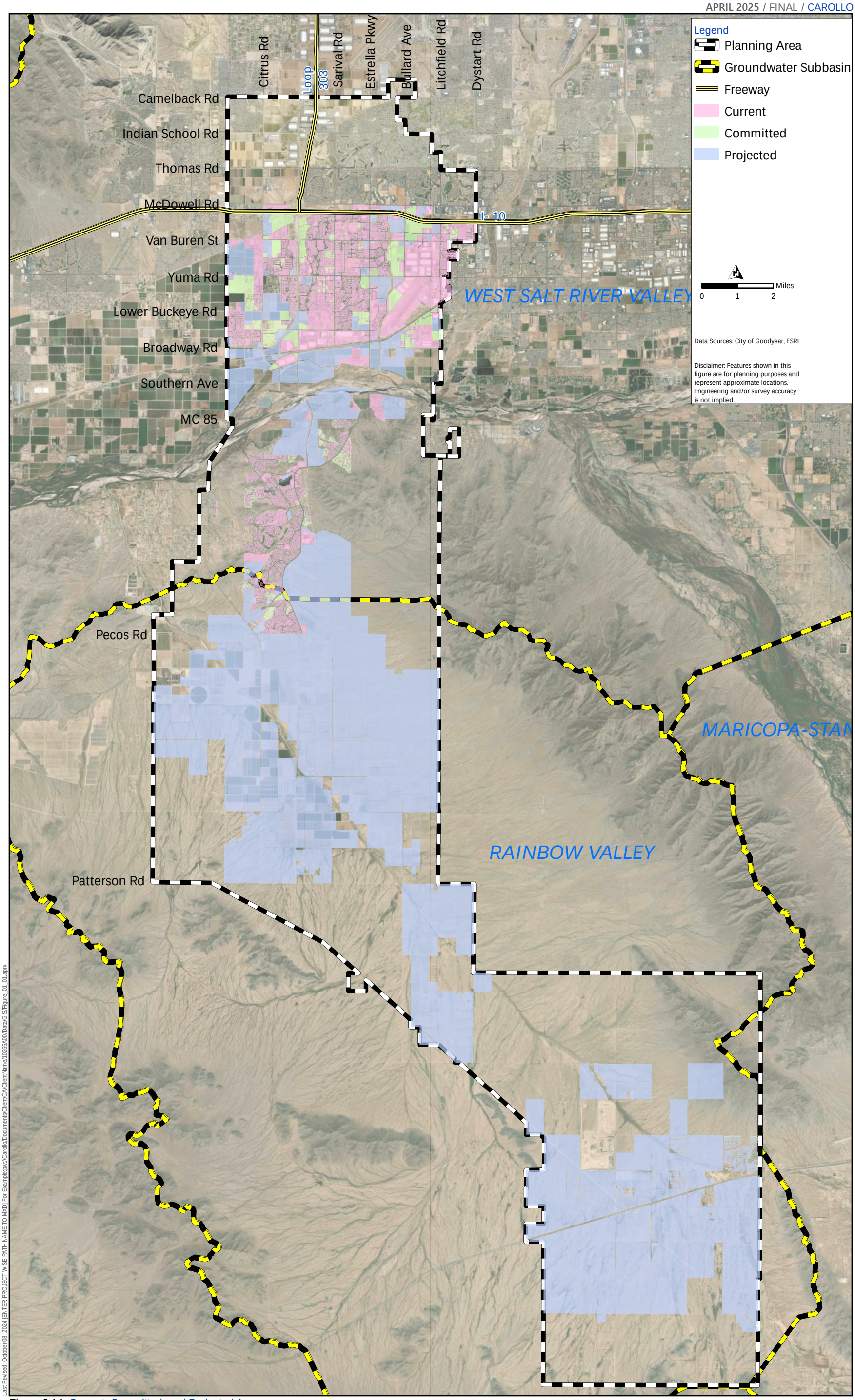


Figure 2.14 Current, Committed, and Projected Areas

2.5.5 Water Conservation

The City is in an arid climate where limited water resources are becoming increasingly expensive. A part of any water resources strategy in Arizona is to make the best use of currently available water resources. To initially determine how well the City is using its water resources, an evaluation of how much water is delivered to City customers is returned to the wastewater system where the water can be treated and reused. Table 2.12 presents this evaluation.

Table 2.12 Evaluation of Goodyear Potable Water Supplies that Become Wastewater

Calculation Variable	Item	Amount (mgd)
a	2023 Water Demand	12.2
b	2023 Potable Water Consumption	10.2
c	City's unmetered water delivered to the collection system	0.9
d	Metered Demand for Turf Irrigation	0.9
e = b-d	Potable Water Delivered to Customers with a Wastewater Return Flow	9.3
f	Wastewater Flow to Water Reclamation Facilities	6.5
g	Wastewater Flow Originating Outside Goodyear Potable Water Delivery Area (North of I-10)	0.45
h = f-g-c	Wastewater Flow Originating in Potable Water Delivery Area	5.15
i = h/e	Wastewater to Delivered Potable Water Ratio	0.55
j = h/a	Wastewater Return Rate	0.42

Notes:
(1) Water demand and consumption are taken from Table 2.5.
(2) Wastewater flows are taken from flow monitoring in the summer of 2023 and water reclamation plant inflow records, 2023.

The metered demand for turf irrigation only considers potable water deliveries. Reclaimed water is sent to the Buckeye Irrigation District, reclaimed water supply pond, and irrigated common areas in Estrella Mountain Ranch. Estrella has used reclaimed water for turf irrigation exclusively in the last couple of years, but they also have access to private wells to fill the lakes if necessary. Despite this fact, the wastewater to potable water ratio in Table 2.12 is high relative to other Maricopa County communities, indicating a lower outdoor water use. The 2016 IWMP indicated that 60 percent of total water demand was used outside. Table 2.12 shows that only 42 percent of total water use is outside consumptive use. In the eight years since the 2016 IWMP was completed, outdoor water use has decreased slightly. A portion of the City's demand growth in the past eight years has been industrial and commercial demands with little outdoor water use, which has increased the wastewater return rate.

In May 2018 the City's Water Conservation Committee completed a series of recommendations for improving water conservation which are documented in a Recommendation Plan Report. We recommend continued implementation of the recommendations in the Recommendation Plan Report to continue reducing water use for current and future water customers. Opportunities still exist to reduce outdoor consumptive water use and water use at commercial and industrial sites.

2.6 Wastewater Flow Projections

2.6.1 Historical Wastewater Flows

The City's historical wastewater flow information was evaluated to establish seasonal flow patterns and prepare future wastewater flow projections. Table 2.13 presents the City's historical wastewater flow from 2019 through 2023 at all the City's wastewater reclamation facilities (WRF). Historical flows are shown graphically in Figure 2.15. Wastewater flows have fluctuated from year to year over this period, due at least in part to the flows from industrial sites like Microsoft.

Table 2.13 Historical Monthly Wastewater Flows

Month	Average Monthly Historical Wastewater Flow at all the City's WRFs (mgd)				
	2019	2020	2021	2022	2023
January	4.37	5.07	5.81	5.32	6.00
February	4.03	5.46	5.83	5.27	6.21
March	4.3	5.23	7.16	5.17	6.40
April	4.17	4.97	5.85	5.59	7.01
May	4.21	5.32	6.45	5.65	6.84
June	4.8	5.8	5.87	5.77	6.23
July	4.95	6.06	6.18	5.91	6.43
August	5.19	5.51	5.88	5.69	6.11
September	4.73	5.29	4.81	6.30	5.26
October	4.63	5.48	4.96	5.85	5.93
November	4.53	5.34	5.07	5.88	5.40
December	4.31	5.18	5.13	5.97	6.40
Maximum	**5.19**	**6.06**	**7.16**	**6.30**	**7.01**
Minimum	**4.03**	**4.97**	**5.75**	**5.17**	**5.26**
Average	**4.52**	**5.39**	**4.81**	**5.70**	**6.19**
Monthly Peaking Factor	**1.15**	**1.12**	**1.25**	**1.11**	**1.13**
Water to Wastewater Ratio	**0.51**	**0.52**	**0.40**	**0.50**	**0.42**

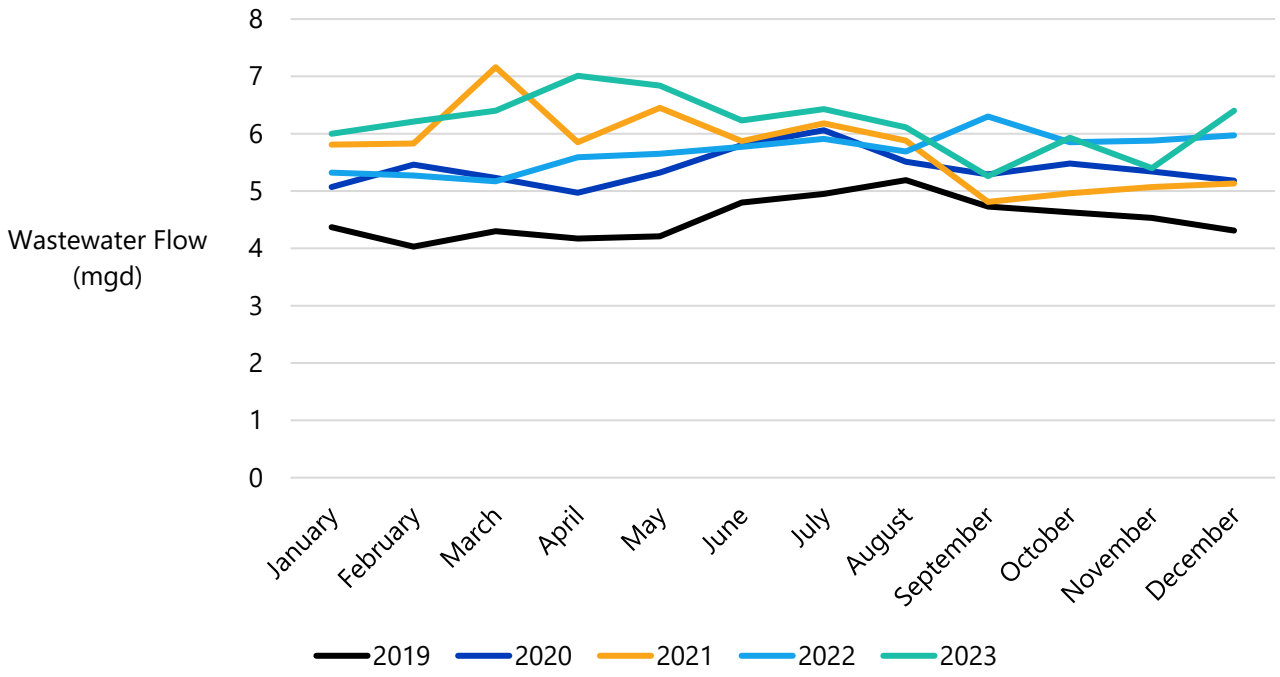


Figure 2.15 Monthly Flowmeter Data for Years 2019 through 2022

2.6.2 Flow Monitoring Field Test

ADS conducted a flow monitoring program to determine wastewater flows throughout the collection system in June 2023. Flow monitoring was performed over a two-week period at 16 flow monitoring sites. In addition to the flow monitoring sites, data was collected at the WRFs at 1-hour intervals.

Observations from the flow monitoring sites helped identify average and peak sewer flows. Data collected from the flow monitoring program was used to establish basin flows, develop diurnal patterns, and to calibrate the collection system hydraulic model.

The sites for temporary metering were selected through discussions with the City. Figure 2.16 shows the location of the flowmeters and their tributary areas.

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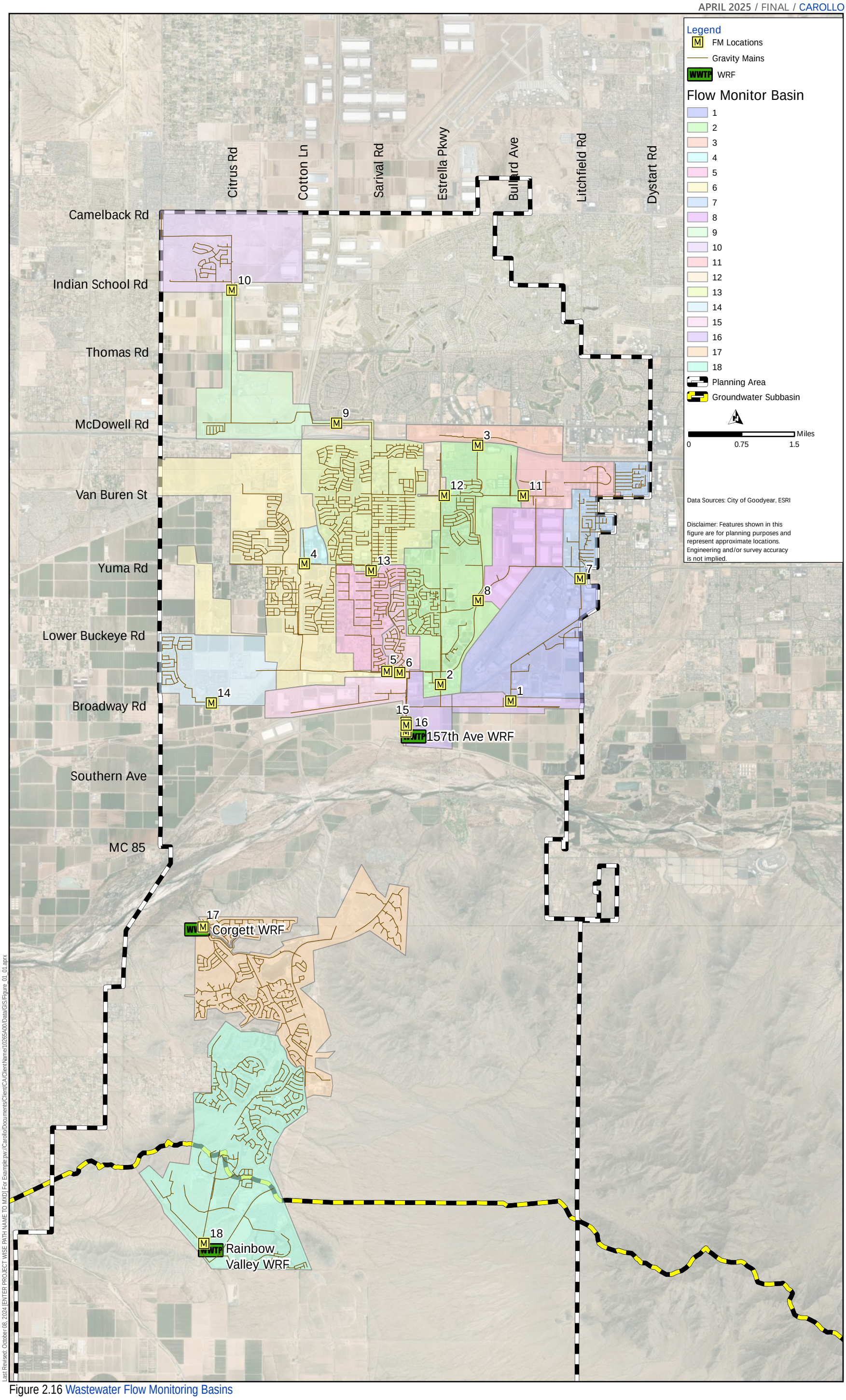


Figure 2.16 Wastewater Flow Monitoring Basins

2.6.3 Wastewater Flow Projections

Wastewater flows were developed for each WRF basin using flow monitoring data and the wastewater return rate. These factors represent the portion of potable water returned to the collection system as wastewater flow.

The following assumptions were made when developing the projected wastewater flows:

- Septic systems were assumed to not connect to sewer until buildout.
- Future wastewater flows were based on the return to sewer ratio for each of the wastewater WRFs as shown in Table 2.14. It is assumed that future developments in WPA 4 will connect to the Rainbow Valley WRF and developments in King Ranch will connect to the 157th Avenue WRF. All developments in WPA 5 are assumed to have a water to wastewater ratio of 49 percent.

Using this approach, the land use classification, growth rates, growth timing, and other assumptions built into the water projections apply to the wastewater flows at each planning period.

Table 2.15 summarizes the projected wastewater flows through buildout by land use classification. Figure 2.17 shows the total projected wastewater flow at each planning period. Figure 2.18 presents the flow projections into each of the WRFs. In the next fifteen years, the 157th Avenue WRF is projected to have the highest increase flow of about 2.4 mgd. Rainbow Valley is also expected to have a greater increase in flow due to the new developments in WPA 4.

Table 2.14 Wastewater Flow Projections by WRF

WWTP	Projected Wastewater Flow (mgd)				
	2023	2028	2033	2038	Buildout
157th Avenue	5.22	6.16	7.13	7.84	10.69
Corgett	0.47	0.53	0.59	0.64	0.70
Rainbow Valley	0.54	0.62	0.92	1.47	8.38
Waterman Wash	0.00	0.00	0.00	0.00	2.41
WPA 5	0.00	0.00	0.00	0.00	12.17
Total	**6.23**	**7.31**	**8.64**	**9.95**	**34.35**

Table 2.15 Wastewater Flow Projections by Land Use Classification

Land Use Classification	Projected Wastewater Flow (mgd)				
	2023	2028	2033	2038	Buildout
Low Density Residential	0.10	0.16	0.23	0.25	1.85
Medium Density Residential	3.23	3.60	4.22	5.01	24.80
High Density Residential	0.17	0.40	0.51	0.59	0.84
Commercial	0.71	0.82	0.95	1.03	2.55
Industrial	0.57	0.82	1.15	1.43	2.32
School	0.25	0.25	0.25	0.25	0.27
Perryville Prison	0.84	0.84	0.84	0.84	0.84
Park/Turf	0.36	0.42	0.49	0.55	0.88
Total	**6.23**	**7.31**	**8.64**	**9.95**	**34.35**

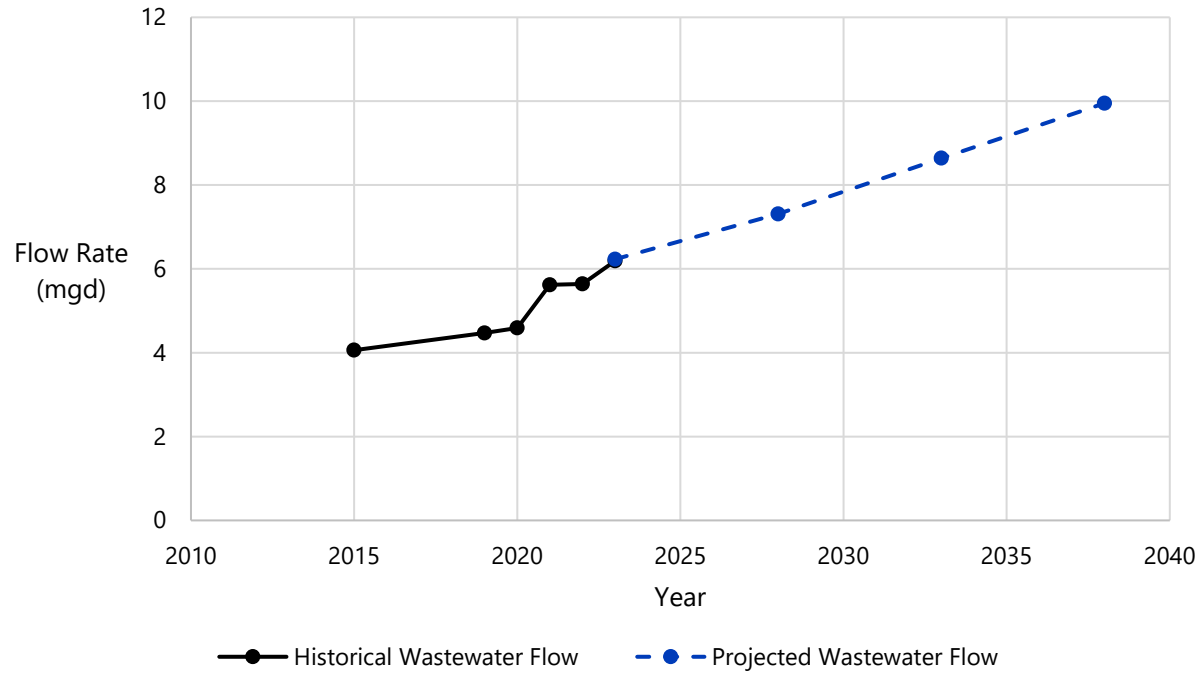


Figure 2.17 Historical and Projected Wastewater Flows

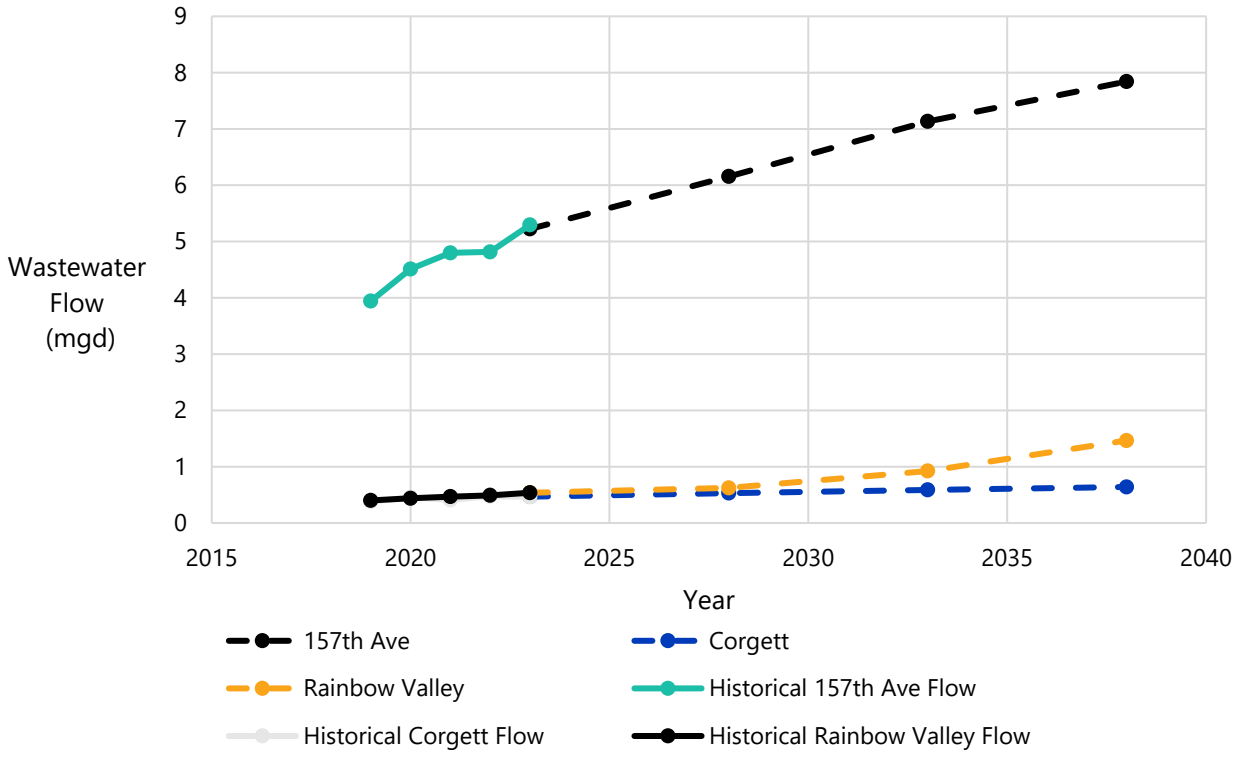


Figure 2.18 Wastewater Flow Projections into the WRFs

Table 2.16 presents the City's wastewater projections by wastewater flow basin and Table 2.17 presents the Rainbow Valley Sub-basin developments projected wastewater flow.

Table 2.16 Wastewater Flow Projections by Flowmeter Basin

Flow Monitoring Basin	Projected Wastewater Flow (mgd)				
	2023	2028	2033	2038	Buildout
1	0.33	0.39	0.45	0.49	0.55
2	0.70	0.86	0.96	1.04	1.27
3	0.05	0.07	0.08	0.09	0.11
4	0.01	0.01	0.01	0.01	0.02
5	0.16	0.17	0.18	0.18	0.19
6	0.73	0.90	1.11	1.21	1.69
7	0.26	0.29	0.29	0.29	0.30
8	0.10	0.11	0.12	0.12	0.15
9	0.89	0.92	0.95	0.97	1.04
10	0.32	0.40	0.50	0.57	0.81
11	0.08	0.09	0.10	0.11	0.14
12	0.03	0.03	0.03	0.03	0.03
13	0.86	0.91	0.95	0.98	1.08
14	0.27	0.30	0.35	0.39	0.50
15	0.28	0.30	0.33	0.36	0.38
16	0.00	0.03	0.06	0.09	0.13
17	0.61	0.69	0.77	0.84	0.96
18	0.54	0.59	0.72	0.86	1.24
Outside the Flow Monitoring Basin Boundaries	0.01	0.25	0.68	1.32	23.76
Total	**6.23**	**7.31**	**8.64**	**9.95**	**34.35**

Table 2.17 Wastewater Flow Projections by Rainbow Valley Sub-basin Developments

Land Use Classification	Projected Wastewater Flow (mgd)				
	2023	2028	2033	2038	Buildout
WPA 3					
Estrella (Inside the Rainbow Valley Sub-basin)	0.18	0.22	0.29	0.39	0.76
Sierra Vista Foothills	0.00	0.00	0.00	0.05	0.11
Terrasante	0.00	0.01	0.05	0.12	0.12
Other	0.00	0.00	0.00	0.00	0.02
Total	**0.18**	**0.23**	**0.34**	**0.56**	**1.01**
WPA 4					
Arnold Baker 320	0.00	0.00	0.00	0.03	0.12
Estrella (Inside the Rainbow Valley Sub-basin)	0.00	0.00	0.00	0.00	3.07
Estrella Highlands	0.00	0.00	0.06	0.13	0.53
Madeira	0.00	0.00	0.00	0.00	0.79
McRae Holdings	0.00	0.00	0.00	0.00	0.51
Rainbow Valley	0.00	0.01	0.04	0.13	0.38
Terrasante	0.00	0.00	0.07	0.15	0.15
Other	0.00	0.00	0.00	0.00	3.23
Total	**0.00**	**0.01**	**0.17**	**0.44**	**8.78**
WPA 5					
Amaranth	0.00	0.00	0.00	0.00	8.10
Other	0.00	0.00	0.00	0.00	4.06
Total	**0.00**	**0.00**	**0.00**	**0.00**	**12.16**

2.7 Reclaimed Water

2.7.1 Flow Projections

Reclaimed water flows are important for planning water resources with reclaimed water as a supply component. Additionally, reclaimed water flow projections are used to plan and size reclaimed water infrastructure. Reclaimed water production estimates are based on the City's historical wastewater flow records and wastewater return flow records. Wastewater return flow is assumed to be 93 percent based on experience with numerous wastewater plants. Table 2.18 presents the total projected reclaimed wastewater flow at each planning period.

Table 2.18 Historical and Projected Reclaimed Water Flows

Year	Reclaimed Water Flow (mgd)					
	157th Avenue	Corgett	Rainbow Valley	Waterman Wash	WPA 5	Total
Historical						
2019	3.67	0.35	0.37	0.00	0.00	**4.39**
2020	4.20	0.42	0.41	0.00	0.00	**5.03**
2021	4.46	0.38	0.44	0.00	0.00	**5.28**
2022	4.48	0.44	0.46	0.00	0.00	**5.38**
Projected						
2023	5.11	0.46	0.53	0.00	0.00	**6.10**
2028	5.72	0.49	0.58	0.00	0.00	**6.79**
2033	6.63	0.55	0.86	0.00	0.00	**8.04**
2038	7.29	0.60	1.36	0.00	0.00	**9.25**
Buildout	**9.94**	**0.65**	**7.80**	**2.24**	**11.31**	**31.94**

Table 2.19 presents the reclaimed water by Rainbow Valley Sub-basin developments. This table is important to plan reclaimed water resource availability in Rainbow Valley and for sizing the capacity of the Rainbow Valley WWTP.

Table 2.19 Reclaimed Water Flow Projections by Rainbow Valley Sub-basin Developments

Water Planning Area and Development	Projected Reclaimed Water Demand (mgd)				
	2023	2028	2033	2038	Buildout
WPA 3					
Estrella (Inside the Rainbow Valley Sub-basin)	0.18	0.20	0.27	0.36	0.71
Sierra Vista Foothills	0.00	0.00	0.00	0.05	0.10
Terrasante	0.00	0.01	0.05	0.11	0.11
Other	0.00	0.00	0.00	0.00	0.02
Total	**0.18**	**0.21**	**0.32**	**0.52**	**0.94**
WPA 4					
Arnold Baker 320	0.00	0.00	0.00	0.03	0.11
Estrella (Inside the Rainbow Valley Sub-basin)	0.00	0.00	0.00	0.00	2.86
Estrella Highlands	0.00	0.00	0.05	0.12	0.50
Madeira	0.00	0.00	0.00	0.00	0.73
McRae Holdings	0.00	0.00	0.00	0.00	0.47
Rainbow Valley	0.00	0.02	0.04	0.13	0.36
Terrasante	0.00	0.01	0.07	0.14	0.14
Other	0.00	0.00	0.00	0.00	3.00
Total	**0.00**	**0.03**	**0.16**	**0.42**	**8.17**
WPA 5					
Amaranth	0.00	0.00	0.00	0.00	7.53
Other	0.00	0.00	0.00	0.00	3.78
Total	**0.00**	**0.00**	**0.00**	**0.00**	**11.31**

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CHAPTER 3 WATER RESOURCES

3.1 Introduction

This chapter presents the water resources master plan for the City as part of the 2024 IWMP. The City has a diverse water resources portfolio consisting of surface water, groundwater, wastewater effluent (reclaimed water), and stored water credits. The City's surface water comes from the Colorado River and is delivered through the SRP canal system to City-owned water conveyance infrastructure that supplies Goodyear's Surface Water Treatment Plant (SWTP). The City owns and operates potable groundwater production wells distributed throughout the northern part of the City's water service area and also receives groundwater from the Adaman Mutual Water Company (Adaman). Reclaimed water produced at the City's water reclamation facilities is delivered for beneficial uses including irrigation and for recharge at the City's SAT site to promote aquifer sustainability and offset potable groundwater pumping.

The City has obtained and maintains a DAWS from the ADWR. This demonstrates that the City has secured the water resources required to provide a physical, legal, and continuously available water supply for its water service area for 100 years.

This chapter of the IWMP contains the following sections:

- Regulatory Framework.
- Water Resources Portfolio.
- Water Supply and Demand Balance.
- Future Water Supply Opportunities.
- Water Supply Development Strategies for Rainbow Valley.
- Drought Response and Water Conservation.
- Recommended Strategies to Manage water Supplies and Demands.

The water resources plan of the IWMP provides strategic direction for the City in deploying water resources to meet demands of current customers and future growth. The recommendations acknowledge a need for the City to provide a physical supply to meet demands while maintaining consistency with the management goal of the Phoenix Active Management Area (AMA). This means achieving safe yield of groundwater by utilizing renewable supplies to meet demands or through groundwater replenishment.

3.2 Regulatory Framework

Arizona water law has multiple systems of water rights that separately govern the use of Arizona surface water, CAP water, groundwater and reclaimed water. The State of Arizona developed its water laws beginning in 1919 with the Public Water Code regulating Arizona surface water. The more recent major body of water law was enacted in 1980 and is commonly referred to as the Groundwater Code. The Groundwater Code identifies areas where groundwater supplies are in jeopardy because of severe overdraft and need intensive management. These are known as the AMAs.

Generally, Arizona's water laws are intended to provide for and promote orderly use of the State's available water resources. Additional statutes also impact the acquisition and use of Colorado River water, including the CAP, and reclaimed water (referred to as "effluent" in the statutes).

Arizona's water statutes are complex, but necessary to protect and efficiently use this valuable resource. A combination of statutes, rules, court decisions, and other legal agreements collectively govern the quantity of water available to the City. These documents and rulings specify how water can be conveyed, and how and where the City can use it. Understanding how these legal and institutional issues impact the strategies and tactics needed to protect the City's water supplies is key to maintaining a robust water resources portfolio. It is also required to effectively manage existing water resources while planning for the acquisition of future water supplies needed to serve growth.

The following sections summarize and highlight some of the key components of many of the regulations and institutional constraints important to water resources planning for the City. Since these brief regulation summaries are interpretations, the City is encouraged to rely on official regulatory language and legal interpretation when implementing management strategies.

3.2.1 1980 Groundwater Management Act

Prior to 1980, specific areas of Arizona observed declining groundwater levels at alarming rates. A combination of local, state, and federal interests recognized the continued decline of groundwater levels threatened the economy and welfare of the State. To reverse this trend, the Legislature enacted the Groundwater Management Act (GMA) or Groundwater Code, which in specific areas of Arizona regulates the use of groundwater to maintain a balance between withdrawal and natural and artificial recharge. This balance is known as "safe yield".

The GMA created four initial AMAs in locations that were experiencing severe groundwater overdraft and were potentially at risk for continued declining groundwater levels with existing and projected urban growth. The City is within the Phoenix AMA. The statutory water management goal for the Phoenix AMA is to achieve safe yield by 2025.

The GMA has five primary provisions that apply to the City and the Phoenix AMA:

- Establishment of a program of groundwater rights and permits.
- Preparation of five water management plans for each AMA (for four decades beginning in 1980, and a final management plan for years 2020 through 2025) including mandatory conservation requirements.
- Development of a program that demonstrates an assured water supply for new growth.
- Metering and measuring water pumped from wells (with some exceptions for wells pumping less than 35 gallons per minute [gpm]).
- Reports on annual water withdrawal and use.

3.2.2 Assured Water Supply

The Assured Water Supply (AWS) program included in the 1980 GMA was strengthened by the adoption of the AWS administrative rules in 1995. Individuals wishing to develop and sell subdivided land with an AMA (defined as six or more subdivided lots) must demonstrate the availability of sufficient renewable water supplies to meet the proposed new development's demands for 100 years. One way to demonstrate this is for a water provider, such as the City, to establish and maintain a DAWS (or Designation); new subdivisions can then be approved for development within the water provider's service area.

There are five requirements for demonstrating an AWS:

- Sufficient water supplies must be physically, legally, and continuously available for a 100-year period.
- The water provider must have the financial capability to install the required facilities to treat and deliver water.
- The quality of the water sources must meet the Arizona Department of Environmental Quality's requirements.
- Uses of the water must be consistent with the Management Goal of the AMA.
- Uses of the water must be consistent with the conservation requirements of the AMA Management Plan.

The AWS Rules limit the amount of groundwater a City with a Designation (designated municipal provider) may withdraw to be consistent with the management goal of the AMA. Understanding this provision is complicated and based on several legal distinctions, but critical to determining how water supplies must be managed by a designated provider such as the City.

The difference between physical water management and "paper water" accounting is important. For example, all water physically located underground for the purposes of determining the amount of water that is "physically available," is considered groundwater. This "underground water" may have several legal titles such as long-term storage credits (LTSCs), incidental recharge credits, etc. However, because of the physical availability of the AWS designation criteria, the credits held by a water provider are meaningless if there is insufficient water physically present in the aquifer to pump. Physical availability must be achieved and maintained prior to applying the paper water accounting process.

There is a component of legally defined groundwater the City can use without incurring a replenishment obligation. This groundwater is maintained in the provider's groundwater allowance account. This account is comprised of several legal subclasses of water, described as follows:

- The initial, or "Phase-In," groundwater allowance is computed as a percentage of the provider's historical water use.
- Incidental recharge is considered water that has returned to the aquifer from system leaks, excess water applied to landscapes, and stormwater flow. The groundwater allowance account is increased annually by an incidental recharge factor applied to the provider's total water use.

The groundwater allowance may also be increased through extinguishment of Grandfathered Groundwater Rights, which require a provider to seek, obtain and pledge these credits to their groundwater allowance account. A provider may also increase its allowable groundwater pumping by becoming a member service area of the Central Arizona Groundwater Replenishment District (CAGRD) (refer to Section 3.2.4). A portion of remediated groundwater pumped as part of the Phoenix-Goodyear Airport North (PGAN) and Phoenix-Goodyear Airport South (PGAS) Superfund sites, within the City's service area, was approved by ADWR for inclusion in the City's groundwater allowance.

3.2.3 Groundwater Rights

The GMA established several classes of groundwater rights pertaining to most groundwater pumping within an AMA. These rights include:

- **Service Area Rights –** This is the classification of the groundwater rights held by the City. These may also be issued to irrigation districts for the delivery of groundwater to their member lands. Service area rights are unique in that they have the ability to be expanded, and they are the only groundwater rights that can still be created within an AMA. There are specific procedures for expanding/extending existing service area rights, and for establishing new or "satellite" service areas.
- **Irrigation Grandfathered Rights (IGFR) –** These rights are, in general terms, held by commercial agricultural landowners.
- **Type 1 Non-Irrigation Grandfathered Right (Type 1 Rights) –** These rights are derived from lands that were originally relying on IGFRs, but for specific reasons retired the land from agriculture and needed a legal right for the landowner to continue using groundwater for non-agricultural reasons.
- **Type 2 Non-Irrigation Grandfathered Right (Type 2 Rights) –** These rights are held by non-agricultural groundwater users and were issued after passage of the GMA. These rights can be leased, all or in part, or sold in entirety, for use anywhere within the AMA.

The number of IGFRs and Type 2 Rights can only be reduced over time as no new IGFRs, or Type 2 Rights can be created in the AMA. Type 1 Rights could theoretically increase in number but only through the retirement of IGFRs, which are typically awarded a reduced groundwater entitlement for non-agricultural water uses.

The term "Grandfathered Rights" is derived from the fact that water uses in existence for the five years prior to enactment of the GMA (1975 – 1980) were "grandfathered in" and awarded the right to continue pumping and using groundwater. This includes irrigated lands that were converted to a non-irrigation use during a specific qualifying period prior to 1980; these lands were issued Type 1 Rights. Type 1 Rights created after the GMA by retiring IGFRs are still considered grandfathered rights since their origin is from irrigation grandfathered rights. These groundwater right provisions will become particularly important to the City as it extends its service further into Rainbow Valley.

3.2.4 Central Arizona Groundwater Replenishment District

In 1990, the State Legislature authorized legislation to establish Groundwater Replenishment Districts. The CAGRD, which is a division of the Central Arizona Water Conservation District (CAWCD), was established in 1993 with voluntary membership. The purpose of the CAGRD is to provide a mechanism for landowners and water providers to demonstrate an AWS under the AWS rules. The CAGRD recharges unused CAP water, or other renewable water supplies, to offset groundwater pumping by its members. CAWCD owns

and operates several underground water storage facilities including the Agua Fria, Hieroglyphic Mountains, Tonopah Desert, and Superstition Mountains projects in which CAGRD can store water. The CAGRD can also store water in Groundwater Savings Facilities (GSFs).

The City has membership in CAGRD as a Member Service Area (MSA) with a replenishment agreement for a maximum of 15,940 AFY. This agreement provides the City with a mechanism to prove consistency with the management goal of the AMA. The CAGRD is not currently required to replenish groundwater in the same physical location where it was extracted. It can replace groundwater pumping anywhere within the AMA.

3.2.5 Recharge, Underground Storage and Recovery, and Replenishment

In 1986, the State promulgated the Underground Water Storage and Recovery Act (UWSRA) to regulate the recharge, storage, and recovery of all classes of water. The UWSRA allows renewable supplies to be recharged and stored underground to meet future demands, and encourages the use of excess renewable supplies, such as CAP water and reclaimed water, which would otherwise remain unused.

The distinction between recharge and underground storage and recovery (US&R) is simple. Water can be recharged by any party without the intent to later recover the recharged water for its use (considered to be a "donation" to the AMA). US&R is the practice of storing water underground for recovery and future use. The statutes also include regulations for replenishment. This is the practice of replacing groundwater previously pumped from the aquifer by a specific party.

Underground storage projects involve two types of permits, namely the Underground Storage Facility (USF) Permit and the Water Storage (WS) Permit. The USF permit regulates the process of underground storage, and the WS Permit is issued for the purposes of accruing credits. The USF has two types of physical facilities, namely constructed and managed. Constructed facilities include facilities that are specifically built to facilitate storage such as spreading basins, injection wells, and vadose zone wells. The managed facility permit governs when water is discharged to a natural stream and water is allowed to infiltrate through natural processes.

The UWSRA was amended in 1990 to include provisions for a third type of recharge identified as "indirect" or "in lieu" through a GSF. Using a GSF is an indirect recharging method which allows a water provider to deliver reclaimed water or CAP water for use by another party, such as an agricultural irrigation district, in lieu of pumped groundwater. The water provider gains storage credits for the amount of water delivered, with the same legal identity (CAP water, reclaimed water, etc.) equal to the amount not pumped by the irrigation district minus a 5 percent cut for the aquifer. Reclaimed water is exempt from this cut.

At present, only water used by agricultural irrigators in excess of their own CAP allocation can be counted as credits. This point is virtually moot today, however, since most irrigation districts have relinquished their allocations to CAP water or will in the near future. It is possible under the statutes that water could be delivered to a groundwater-using, non-agricultural water user (i.e., a golf course) to accomplish the same thing.

An amendment to the UWSRA was added which established annual storage and recovery (AS&R) accounts. This addition allows for the use of USFs and wells to store and recover water annually without having to build costly treatment and conveyance facilities. Water stored under an AS&R permit must be recovered in the same calendar year as it was stored. This is one approach to using reclaimed water (indirect potable reuse [IPR]) without the expense of DPR, along with long-term storage and recovery.

To recover stored water credits, a recovery well permit is required. An existing well may be permitted as a recovery well if it is demonstrated that other wells in the vicinity will not be harmed by the recovery of the stored water. The water recovered from the well retains the identity of the water (as previously discussed) when it was stored.

3.3 Water Resources Portfolio

The City has developed a water resources portfolio that includes surface water supplies from the Colorado River, groundwater, and reclaimed water. The City owns twelve potable groundwater production wells and receives bulk groundwater deliveries from the Adaman Mutual Water Company through three wells. The City currently utilizes its reclaimed water supply for direct non-potable reuse and recharge (at the SAT site) and recovery via the City's production wells.

The following water resources are the major components of the City's existing water resources portfolio, each of which is discussed in subsequent sections:

1. Colorado River Supplies consisting of the CAP Municipal and Industrial (M&I) allocation, and the Gila River Indian Community (GRIC) lease.
2. Groundwater, which:
    a. Can be pumped without replenishment including the phase-in and incidental recharge allowances as determined by the ADWR.
    b. Is available through a bulk water delivery agreement with Adaman.
    c. Is produced as remediated groundwater through the PGAN and PGAS Superfund projects, which is exempted from replenishment requirements through 2050.
3. Reclaimed water.
4. Long-term storage credits derived from recharge and storage of reclaimed water and CAP water.

The yield and delivery capability of each of the City's water resources is impacted by the following:

1. Hydrologic/climatologic effects (i.e., drought impacts and climate change).
2. Institutional restrictions on the location of use.
3. The location of service area demand.
4. Impacts from groundwater contamination and remediation activities at the PGAN and PGAS Superfund sites.
5. Capacity of the water transmission and distribution infrastructure to deliver water to customers.

The following sections discuss each of the City's water resources from the perspective of resource evaluation, drought yield implications, and operational considerations.

Locations of the City's water resources planning area and major water resources features including the SAT site, City groundwater wells, and GSFs near the City's service area are shown in Figure 3.1.

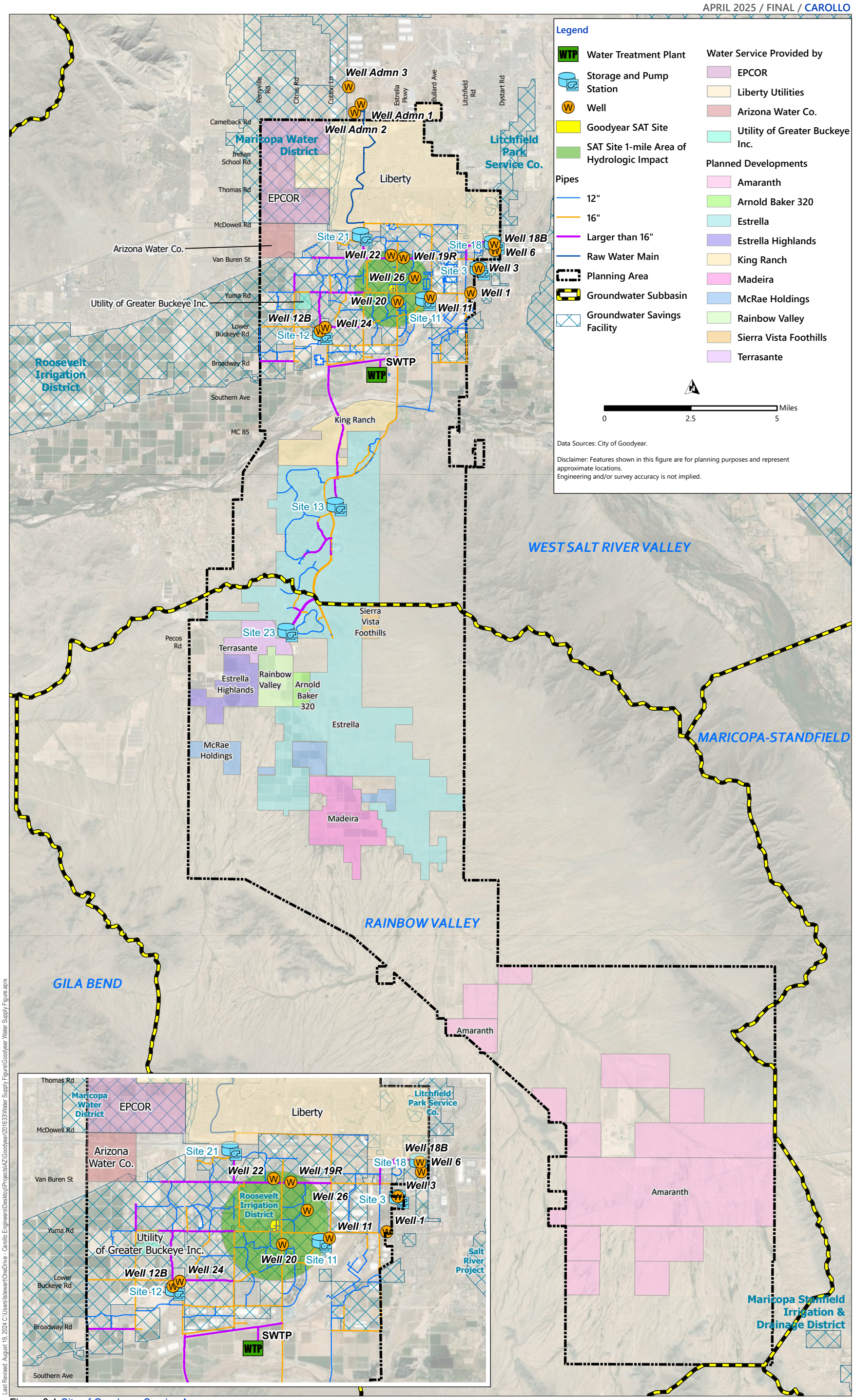


Figure 3.1 City of Goodyear Service Area

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3.3.1 Colorado River Supplies

The CAP is designed to deliver approximately 1.5 million acre-feet (MAF) of Colorado River water annually to central and southern Arizona. The estimated annual water supply available for delivery from the CAP in normal water years is 1.415 MAF. A total of 620,678 acre-feet (ac-ft) has been contracted by M&I entities, including the City. The remainder includes CAP Indian and other contracted water and uncontracted Non-Indian Agricultural (NIA) priority water.

3.3.1.1 Resource Evaluation

The City currently has a subcontract for 10,742 AFY of M&I priority CAP water and a GRIC lease for 7,000 AFY of CAP water (also M&I priority). These supplies may be used anywhere within the City's service area. In the City's 2016 Designation, the use of CAP water was limited to recharge and recovery because the City did not have a means to treat and deliver CAP water directly to its customers at the time.

The City's SWTP began operating in 2022. This facility has a rated capacity of 8 mgd (8,960 AFY) and is used to treat a portion of the City's CAP water. Currently, the City's SWTP can reliably treat a maximum of 6.5 mgd (7,280 AFY). In February 2017, the City entered into an agreement with the Salt River Valley Water Users' Association (SRVWUA) and the SRP Agricultural Improvement and Power District. The current agreement term is through the year 2066 and allows the City to wheel its CAP water allocation through the CAP/SRP Interconnection Facility (CSIF) located adjacent to the Granite Reef Diversion Dam and through the SRVWUA Water Delivery System. The agreement states that the City can lease a volume of 25,000 AFY of capacity in the CSIF. The infrastructure and agreements put in place after the City's 2016 Designation significantly increased the City's ability to use CAP water to meet demands.

The City can also store CAP water based on its permitted recharge volumes for several USFs and GSFs. The City's total permitted annual storage volume is 112,500 AFY. The annual volume of CAP water that can be recovered is limited by the maximum recovery well permit volume of the City's recovery wells. All the City's wells are permitted as recovery wells.

3.3.1.2 Drought Yield Implications

The Colorado River is experiencing a nearly 23-year drought. Drought, climate aridification, and over-allocation of the Colorado River's resources has led to alarming declines in Lake Mead's water levels. Lake Mead serves as the governing reservoir for delivering Colorado River water to the Lower Basin States (California, Nevada, and Arizona) and Mexico. This "structural deficit" in Lake Mead has been recognized for many years.

In 2007, interim shortage guidelines were established to reduce water deliveries to Arizona and Nevada once Lake Mead elevations dropped below 1075 feet. These reduced deliveries were agreed upon by the Lower Basin States to develop an intentionally created surplus (ICS) to prevent the water level in Lake Mead from dropping below 1025 feet, which is the lowest practical operational level for maintaining water deliveries.

The 2007 interim guidelines are temporary and remain in effect until December 31, 2025. In 2019, the Unites States Bureau of Reclamation (USBR) recognized the need for additional mitigation measures to address declining water levels in Lake Mead. The USBR then facilitated the development of the Drought Contingency Plan (DCP) with separate agreements for the Upper and Lower Basin states. The DCP went into effect on May 20, 2019, and effectively builds on the 2007 interim guidelines by establishing additional voluntary reductions for all the lower basin states as well as reduced water deliveries to Mexico through the Binational Water Scarcity Contingency Plan.

Under the DCP, Colorado River resources delivered annually to Arizona could be reduced between 192,000 acre-feet and 720,000 acre-feet (between 7 and 23 percent of the total Colorado River apportionment to the State). Cuts to specific subcontractors will be based on water right priority. All of the City's CAP water is M&I/Indian Priority, which is at a lower risk of being cut until the higher DCP tiers are reached.

Arizona continues to work with the other Colorado River Basin states to develop operational concepts for a sustainable river system. In March 2024, Arizona, California, and Nevada presented a post-2026 Operations Plan to the USBR. Within the state, the Arizona Reconsultation Committee (ARC) is working on details of how this proposed plan will be implemented in Arizona's and identifying potential impacts to Arizona water users. The City is represented and actively engaged in the ARC.

For the IWMP, the approach taken to evaluate the City's susceptibility to long-term drought was to assume a 30 to 65 percent total cut of CAP water as a potential condition for each IWMP planning period (refer to Section 3.4).

Arizonan Water Banking Authority

In 1996, the Arizona Water Banking Authority (AWBA) was created to store unused portions of Arizona's share of the Colorado River water underground. The AWBA is in the process of storing 4.28 MAF of LTSCs, which includes 2.67 MAF for Arizona's use. These credits can be recovered (pumped) during a shortage period to provide back-up water supplies for Arizona water users. This process is known as "firming," and the water reserved in store through the process is referred to as "firmed water." The unused CAP water serves the following purposes:

- Firming a percentage of subcontracted amounts in times of shortages or disruption of the CAP system.
- Meeting the management plan objectives of the Arizona Groundwater Code.
- Assisting in the settlement of Native American water right claims.
- Exchanging water supplies to assist Colorado River communities.

In January 2014, a draft report by the AWBA, ADWR, and the CAP was released entitled "Recovery of Water Stored by the Arizona Water Banking Authority." This report outlined strategies for firming M&I subcontractors which included direct recovery, indirect recovery, and credit exchange methods for providing the firming coverage. Shortage amounts and timing of these shortage conditions are also discussed based on Colorado River modeling studies.

In 2021, a joint update was released by the AWBA, ADWR, CAWCD, and the Recovery Planning Advisory Group (RPAG) that includes an updated analysis of projected AWBA firming volumes, estimated recovery capacity needs, and an updated operational timeline to further refine the procedural steps for recovery implementation. Firmed water is intended to be recovered for delivery to M&I sub-contractors if and when Tier 3 reductions begin.

For shortages to the M&I priority pool, the AWBA will distribute credits provided the following conditions exist:

- AWBA has credits available to firm the supply.
- CAP's recovery schedule is consistent with statutes, rules and policies.
- Credits will be used to benefit the county for which they were accrued.
- The shortage to the M&I priority pool is less than 20 percent.

The City's GRIC lease water supply is federally firmed by the United States, and therefore the City should order their GRIC lease water prior to ordering their CAP subcontract water to the extent possible. This ensures that if there are declared shortages on the CAP any portion of the GRIC lease would not be reduced and could be used fully before the City would need to use other reduced supplies, supplemented with LTSCs.

3.3.1.3 Operational Considerations

CAP water can be ordered year-round, although the CAWCD has a policy that limits a subcontractor to 11 percent of their total CAP supply delivered per month. Since the CAP is not operating at full capacity, this peak delivery rate has not been strictly enforced. While it is not known if and when the peak limit will be enforced, it is prudent for the City to be aware of this and assume that it potentially could be. Based on the City's total CAP entitlement of 17,742 AFY, this would be equivalent to 1,951 acre-feet in a month (17,742 x 11 percent = 1,951 acre-feet per month or 65 acre-feet per day), which is equivalent to 21.2 mgd (65 acre-feet per day * 0.325733 gallons per acre-foot = 21,172,638 gallons per day [gpd]).

The CAP canal is not taken out of service for routine maintenance. Provisions are in place to allow water deliveries to continue during maintenance. Although the CAP canal has not been shut down in the past, there are potential catastrophic risks that may result in failures or outages.

The SRP canal system, through which the City's CAP water is supplied, is subject to seasonal outages for canal cleaning and maintenance, which is typically performed in the winter months when demands are lower. The City's water deliveries through the SRP system are subject to curtailments or interruptions due to emergencies, canal dry-up, operational constraints, and necessary maintenance and repairs.

We recommended that the City continue to diversify and develop its supply sources, including groundwater production and expanding both groundwater and surface water treatment. This will allow the City to adapt to changing water supply conditions, including the potential for permanent reductions in the City's CAP allocation and long-term groundwater physical availability.

3.3.2 Groundwater

The AWS rules adopted by ADWR require that for a groundwater resource to be considered physically available, it must not cause the static water level to drop below 1000 feet below ground surface (ft bgs) over a 100-year pumping period. On May 31, 2016, the City received its re-designation of AWS effective until December 31, 2028.

The City's legal availability of groundwater is limited by the GMA, which includes the volume of groundwater in the City's AWS Groundwater Allowance Account. The account includes groundwater in the following categories:

- Groundwater allowance.
- Accrued incidental recharge.
- Annual and long-term storage credits.

Annual and long-term storage credits are accrued by recharging renewable supplies (CAP, and reclaimed water), which can be used to offset groundwater pumping which must be replenished.

3.3.2.1 Water Resource Evaluation

The City has a one-time allocation of groundwater that may be pumped as part of the "phase-in" to safe yield in the Phoenix AMA. This quantity was established in 1995 by the AWS rules. Per the 2016 AWS designation, the Phase-In Allowance was computed to be 948.05 AFY for a 100-year period. The Phase in allowance, which if used, would not incur a replenishment obligation.

Under the AWS rules and as approved by ADWR in the 2016 Designation, the City is allowed an Incidental Recharge allocation of 5.1 percent of its total annual water demand (refer to the City's 2016 Decision and Order). The formula was based upon the estimated volume of water recharged to the groundwater aquifer from the City's water distribution system through leaks and delivery to end users. The amount of incidental recharge will increase as water use increases in the City in the future. In the 2016 Decision and Order, the City's incidental recharge volume was calculated to be 936.32 AFY, which was based on the projected year 2027 annual water demands. Incidental recharge is important in that it is not counted against the City as a CAGRD replenishment obligation when reported to ADWR in the annual water use reporting.

The AWS Groundwater Allowance Account is the amount of groundwater pumping available to the City that does not have to be replenished. In 2022, the City's Groundwater Allowance Account totaled approximately 101,018 ac-ft (or 1,010 AFY for 100 years), which can be used for drought protection or for emergency purposes.

The City has been using a portion of its CAP water supply for AS&R to offset groundwater pumping that would otherwise need to be replenished. In 2023, the City stored and recovered 9,579 acre-feet of CAP water. As of 2022, the City has accrued 90,293.66 acre-feet of LTSCs, which include both CAP and reclaimed water.

In the future, the City may elect to continue to expand the SWTP to provide capacity to treat and deliver more CAP water to the service area and/or continue to recharge/recover CAP water for AS&R to offset groundwater pumping or accrue LTSCs. Decisions regarding expanding surface water treatment capacity should consider the realistic long-term yield of the City's CAP water as well as other water supplies that may be conveyed to the SWTP for treatment. Expanding AS&R within the area of hydrologic impact (AOHI) can only happen if the City can demonstrate sufficient recharge capacity is available to meet the City's needs without causing unreasonable harm to others.

As the City evaluates options for recharge and recovery of CAP water, the following are recommended:

- **Recharge and recover CAP water within the AOHI whenever possible.** The AOHI for a USF is defined as one mile from the facility while the AOHI for a GSF is defined as anywhere within the GSF boundary. Water recovered within the AOHI of a USF or in a GSF is not counted against the groundwater physical availability established in City's Designation.
- **Make certain USF and GSF permits are renewed on time to preserve recharge options.** USF permits typically have a 20-year limit and must be renewed through an ADWR re-permitting process. The current re-permitting timeline for USFs the City has capacity ownership in ranges from year 2025 through 2040 as shown in Table 3.1. Information on applicable GSF re-permitting timelines is shown in Table 3.2. The City should be proactive and work with recharge facility owners to re-permit them in a timely fashion.
- **Consider leasing USF capacity to other (or potential) Designated Municipal Providers.** As the City is more certain how its CAP water will ultimately be deployed, there will be less of a need to maintain capacity in CAWCD recharge facilities. There may be opportunities to lease capacity to other utilities, particularly those that have recovery wells within the AOHI of those facilities.

Table 3.1 Underground Storage Facility Recharge Capacity

Underground Storage Facility	USF Number	Start Date	End Date	Total Facility Storage Capacity (ac-ft)	Goodyear's Annual Capacity (ac-ft)	Total Recharged in 2023 (ac-ft)	USF Operator	Type of Water
Agua Fria Managed	71-569775.0009	12/22/2020	12/22/2040	540,000	13,000	4,588.0	CAWCD	CAP
Agua Fria Constructed	71-569776.0010	12/22/2020	12/22/2040	540,000	13,000	2,752.0	CAWCD	CAP
Hieroglyphic Mountain Recharge Project	71-584466.0005	10/31/2022	10/31/2042	35,000	13,000	-	CAWCD	CAP
Tonopah Desert Recharge Project	71-593305.0003	11/7/2017	9/1/2025	2,000,000	17,000	-	CAWCD	CAP
Superstition Mountains Recharge Project	71-207702.0004	9/28/2021	1/15/2028	56,500	56,500	8.0	CAWCD	CAP
City of Goodyear (SAT)	71-226310.0001	9/18/2020	9/18/2040		6,570	1,879.7	Goodyear	Reclaimed

Table 3.2 Groundwater Storage Facility Recharge Capacity

Groundwater Savings Facility	GSF Number	Start Date	End Date	Annual Recharge Capacity (ac-ft)	Goodyear's Total Storage Capacity (ac-ft)	Goodyear's Total Recharged in 2023 (ac-ft)	GSF Operator	Type of Water
Maricopa Water District GSF	72-558246.0007	6/19/2015	6/19/2025	40,000	10,000	-	Maricopa Water District	CAP
Tonopah Irrigation District GSF	72-534439.0006	3/6/2023	3/6/2028	17,059	10,000	2.0	Tonopah Irrigation District	CAP
Roosevelt Irrigation District GSF	72-572386.0006	2/3/2021	2/3/2026	133,000	N/A	5,376.1	Roosevelt Irrigation District	CAP
Maricopa-Stanfield Irrigation & Drainage District GSF	72-531381.0006	9/22/2020	9/22/2025	168,114		-	Maricopa-Stanfield Irrigation District	CAP

Groundwater Physical Availability

The 2016 Decision and Order includes a tabulation of the groundwater physically available by groundwater basin within the City's service area. The total groundwater determined to be physically available to the City is 13,328 AFY in the West Salt River Valley (WSRV) groundwater subbasin and 9,349 AFY in the Rainbow Valley groundwater subbasin. However, the ADWR approved groundwater to meet annual demands is defined as 5,025 AFY for the WSRV and 274 AFY for Rainbow Valley groundwater subbasin.

Table 3.3 shows the approved groundwater volumes from the City's 2016 Designation and amount of groundwater physical availability approved by the ADWR for other developments in Rainbow Valley. These developers have an approved Analysis of Assured Supply (AAWS). The total amount of approved groundwater supply for these other developers amounts to 55,403 AFY. The City is currently working with several developers within Rainbow Valley to define service agreements and infrastructure plans. Under current ADWR rules, there is not an established mechanism in place to govern the transfer of groundwater physical availability associated with either a Certificate of Assured Water Supply (CAWS) or AAWS to a Designated Municipal Provider. See Table 3.3 for more details on Rainbow Valley groundwater physical availability.

Table 3.3 Groundwater Physical Availability Summary

Source of Supply	DAWS Approved Volume (AFY)
City Groundwater WSRV(1)	5,025
West Salt River Valley Total	**5,025**
City Groundwater Rainbow Valley(1)	274
Estrella Highlands Development(2)	3,414
Rainbow Valley 320(2)	682
Madeira North(2)	22,099
Madeira Developments(2)	4,454
Rainbow Valley Developments(2)	1,682
Amaranth Developments(2)	23,072
Rainbow Valley Total	**55,677**

Notes:
(1) Volume approved in the 2016 Decision & Order.
(2) ADWR Issued AWS Demands in Rainbow Valley modeled for 2024 Modified Designation of Assured Water Supply (MDAWS) Application.

The groundwater storage volumes shown in Table 3.3 have been demonstrated to be physically available based on groundwater modeling completed by the City or by developers. The groundwater model simulates existing and projected demands over a 100-year period and is subject to specific criteria required by ADWR. These criteria include demonstrating that the water is of adequate quality as well as demonstrating that water levels will not exceed 1,000 feet below ground surface after 100 years of simulated groundwater pumping. Near-term changes in demands or groundwater pumping intensity by the City or others may change future groundwater modeling results. Demands in Table 3.3 were modeled when determining the groundwater available for the City within Rainbow Valley in support of the City's 2024 MDAWS Application.

The City has a bulk water sale and treatment agreement with Adaman to provide groundwater from outside of the City's service area. The term of this agreement is 80 years with an option for three 10-year extensions. The agreement with Adaman is to provide up to 11,200 AFY (10 mgd) of groundwater. However, in the City's current Designation, ADWR only approved 4,467 AFY of groundwater to be available to the City. This limit is due to groundwater physical availability.

Groundwater pumped and treated at the PGAN and PGAS Superfund treatment facilities is available to the City as remediated groundwater in accordance with Arizona Law. Per the City's 2016 AWS Designation, the City can pump 373.59 AFY of remediated groundwater without incurring a replenishment obligation through year 2025. In 2021, the Arizona State Legislature passed a statute to extend the remediated groundwater pumping exemption sunset date to year 2050.

The PGAN and PGAS superfund sites have a significant impact on the City's water system operation. The City has had to abandon wells that were impacted by this contaminated groundwater. The operation of Wells 1 and 3 is anticipated to be impacted by the groundwater plumes. Recharge facilities also cannot be located in a manner that affects movement of the groundwater plume.

3.3.2.2 Drought Yield Implications

Groundwater pumping is essentially drought proof and is an excellent physical source during periods of reduced surface water yields. However, there are concerns related to sustainability of physical groundwater supplies in the WSRV and RV aquifers.

After the City receives reduced surface water it will be important to maintain sufficient well capacity to pump groundwater to replace surface water shortages during droughts and emergencies. The criteria and pumping capability needs are discussed in Chapter 4. The implications of increased well pumping for certain drought scenarios are discussed in detail in Section 3.4.

3.3.2.3 Operational Considerations

The City has developed and continues to develop a number of groundwater production wells throughout its service area. Groundwater pumping is not subject to canal delivery limitations, seasonal dry-ups, or drought impacts in the same manner as surface water supplies, making groundwater production wells ideal for purposes of meeting peaking, standby, drought, and emergency needs.

Wells are permitted according to ADWR rules and regulations, which include annual withdrawal rate/volume limitations. ADWR's well rules, approved in 2006, allow for 100 percent of the original duty cycle of a well to be available to replacement wells used for municipal purposes. Groundwater quality, including levels of total dissolved solids (TDS), nitrates, fluoride, and arsenic is of major concern to the City. Most of the City's wells need treatment, which significantly increases water supply costs. The City has two reverse osmosis treatment facilities that serve multiple wells. The City also has a treatment facility for the Adaman well supplies. Water treatment is assumed to be required for any new well site.

3.3.3 Reclaimed Water

The City has been treating wastewater to produce a reclaimed water supply that is either delivered directly to customers or made available for recharge to offset future groundwater withdrawals that require replenishment. The City uses the reclaimed water produced at the Goodyear 157th Ave Water Reclamation Facility (WRF). The reclaimed water produced at the Corgett and Rainbow Valley WRFs is

returned to the Estrella development community for non-potable uses or discharged into a nearby wash. In the future when the Rainbow Valley WRF treats wastewater that does not originate in Estrella then the City will have the opportunity to beneficially use the reclaimed water from these additional developments.

3.3.3.1 Resource Evaluation

The goal of the City's reclaimed water management program is to beneficially use all the reclaimed water the City produces, either through reuse or recharge. Effluent generated at the 157th Ave WRF is delivered to the Goodyear SAT site, which is permitted to recharge 6,570 AFY of reclaimed water. The City has an agreement to deliver up to 7.5 mgd (8,400 AFY) of effluent to the Buckeye Water Conservation Drainage District (BWCDD) via the BWCDD Canal for irrigation. They can also discharge reclaimed water to the Gila River in an emergency. Water delivered to BWCDD does not provide a direct water resources benefit to the City (i.e., in-lieu recharge or long-term storage credits).

Effluent generated at the Corgett WRF is delivered to the Estrella development through a distribution system that was built by the developer to provide non-potable water for landscape irrigation and filling lakes that are then used to irrigate the Estrella Golf Club. Currently 99 percent of effluent from the Corgett WRF is delivered to the Estrella development. Effluent from Corgett WRF can also be discharged to the Corgett Wash in an emergency.

Effluent generated at the Rainbow Valley WRF is delivered to the Estrella development and used by this development to provide non-potable water for landscape irrigation and filling lakes that are then used to irrigate the Estrella Golf Club. Currently 70 percent of the effluent from the Rainbow Valley WRF is delivered to the Estrella development. Approximately 25 percent of the effluent from the Rainbow Valley WRF goes to CantaMia, an Estrella development, for landscape irrigation, and the remaining 5 percent of effluent goes to the Waterman Wash.

Irrigation water demands vary seasonally, with peak demands occurring during the summer months, and low demands during the winter or during precipitation events. Since the reclaimed water produced from the water reclamation facilities is relatively constant, storage and recovery facilities are needed to manage supplies in response to seasonal demands. It is recommended that additional reclaimed water generated from new growth be used for aquifer storage and recovery to the highest extent possible.

3.3.3.2 Drought Yield Implications

Like groundwater, reclaimed water is not affected by drought and remains relatively constant throughout the year. When the City must impose its Water Conservation and Curtailment Plan, which cuts back on water use, some reductions in reclaimed water supply may also be experienced.

3.3.3.3 Operational Considerations

Current reclaimed water utilization is based on executed agreements between the City and the end users. These agreements specify a certain reclaimed water delivery amount or committed capacity. Because of the importance of reclaimed water in the City's water resource portfolio, the City should structure development agreements so that the City retains the reclaimed water for recharge. This helps to provide the water resource that is needed for continued growth. The City should also seek opportunities to restructure existing agreements with developers to increase the amount of recharge that is available to the City.

Reclaimed water will be stored underground in recharge facilities that are or will be constructed by the City, for later recovery or to remain in storage as LTSCs. The City should continue to pursue maximizing its reclaimed water recharge capability to offset groundwater pumping. Expanding direct, non-potable reuse systems is recommended only when needed to serve an industrial or commercial customer that returns a high percentage of the reclaimed water through the collection system. The City already has the ability to recover reclaimed water through wells in its potable water system. This gives the City flexibility to determine where the reclaimed water will be used.

3.4 Water Supply and Demand Balance

Available water supplies were compared to the projected average annual demands for both normal and drought conditions anticipated for each planning period. This analysis was undertaken to meet the following objectives:

1. Identify the renewable supply surplus (or shortfall) for each condition to confirm the City's portfolio aligns with the safe yield management goal of the Phoenix AMA.
2. Identify triggers for water supply, treatment, or reclaimed water management infrastructure that are needed for a water resource to be used to meet a projected demand (thereby confirming physical and continuous availability of supplies).

As discussed in Chapter 2 of the IWMP, water demands, and reclaimed water production projections were developed for five-year planning periods from 2023 through 2038. The following sections compare the water supply versus demand balances for each of these planning horizons and discuss potential impacts from drought conditions and potential mitigation strategies.

3.4.1 Normal Water Year Supply and Demand Balance

Table 3.4 presents a summary of renewable water supply availability versus demands for years 2023 through 2038. The renewable water supplies include CAP water, renewable groundwater, and reclaimed water. Renewable groundwater is defined as water that does not need to be replenished. For the purposes of this analysis, LTSCs are also included. However, they can only be used once. This includes the total potable, and reclaimed water demands for WPA 2 through WPA 5. WPA 1 is not included as this area is served by EPCOR and Liberty Utilities. The portion of WPA 2 served by the Arizona Water Company is also not included. The service area demand growth versus available supplies through the year 2038 is graphically depicted in Figure 3.2.

The Normal Year water supply and demand balance shows:

- The City has sufficient renewable supplies in the water portfolio to meet the total potable and non-potable projected demands through year 2038, with surpluses between nearly 7,300 AFY to approximately 12,400 AFY across the planning horizon. This assumes there are no changes to the City's CAP allocation and that its full CAP allocation and the other renewable resources in the City's water portfolio continue to be recognized by ADWR.
- Full utilization of CAP water to meet demands requires either an expansion of the SWTP or continued AS&R through a USF or GSF and recovery via recovery wells. Currently, the City's SWTP can treat 6.5 mgd (7,280 AFY) and the City's firm groundwater production capacity is currently 21 mgd (23,520 AFY) (reference Table 4.1 in Chapter 4). The City's combined potable water production capacity is 30,800 AFY (current SWTP capacity plus current firm groundwater production capacity). This exceeds the year 2038 potable demand projections of 22,780 AFY by 8,020 AFY.

- Reclaimed water produced that exceeds the projected reclaimed water non-potable demands is estimated to be 6,348 AFY by 2028 (7,614 AFY reclaimed water produced less 1,266 AFY of non-potable demand = 6,348 AFY). The annual recharge capacity of the SAT site is 6,570 AFY, which cannot currently be utilized because of a reclaimed water transmission main restriction that limits water deliveries. It is recommended that the City take immediate action to install the needed transmission capacity to fully utilize the SAT site recharge capacity.
- Beyond 2028 through 2038, the City will need an additional 2,500 AFY of recharge capacity to accommodate the estimated reclaimed water produced in excess of non-potable demands, assuming 6,570 AFY of reclaimed water continues to be sent to the SAT site (10,361 AFY reclaimed water produced – 1,266 AFY non-potable demand – 6,570 AFY SAT site capacity = 2,525 AFY).

Table 3.4 Renewable Water Resources Supplies and Demands - Normal Year

	Annual Demand (AFY)			
	2023	2028	2033	2038
Potable Demands[1]	13,660	15,920	19,080	22,780
Reclaimed Demands[1]	1,266	1,266	1,266	1,266
Total Water Demand	**14,926**	**17,186**	**20,346**	**24,046**
Supply (AFY)				
Surface Water				
CAP M&I	10,742	10,742	10,742	10,742
CAP GRIC Lease	7,000	7,000	7,000	7,000
Total CAP Surface Water	**17,742**	**17,742**	**17,742**	**17,742**
Groundwater				
Annual Credit for Incidental Recharge[2]	697	812	973	1,162
Groundwater Allowance	948	948	948	948
Remediated Groundwater Pumping Allowance	374	374	374	374
CAGRD[3]	0	0	0	0
Long Term Storage Account	786	786	786	786
Total Renewable Groundwater	**2,805**	**2,920**	**3,081**	**3,270**
Reclaimed Water				
Reclaimed Water Produced[4]	6,823	7,614	9,003	10,361
Total Reclaimed Water	**6,823**	**7,614**	**9,003**	**10,361**
Total Renewable Supplies	**27,370**	**28,276**	**29,826**	**31,373**
Surplus/(Deficit)	12,444	11,090	9,480	7,327

Notes:
(1) Includes demands for WPA 2, WPA 3, and part of WPA 4.
(2) Per the City's 2016 Designation, Incidental Recharge is calculated as 5.1 percent of the average annual daily demand.
(3) The City has the option to replenish up to 15,940 AFY through CAGRD.
(4) The amount of reclaimed water available to be stored and recovered is the total amount of reclaimed water produced minus the volume used for direct, non-potable reuse.

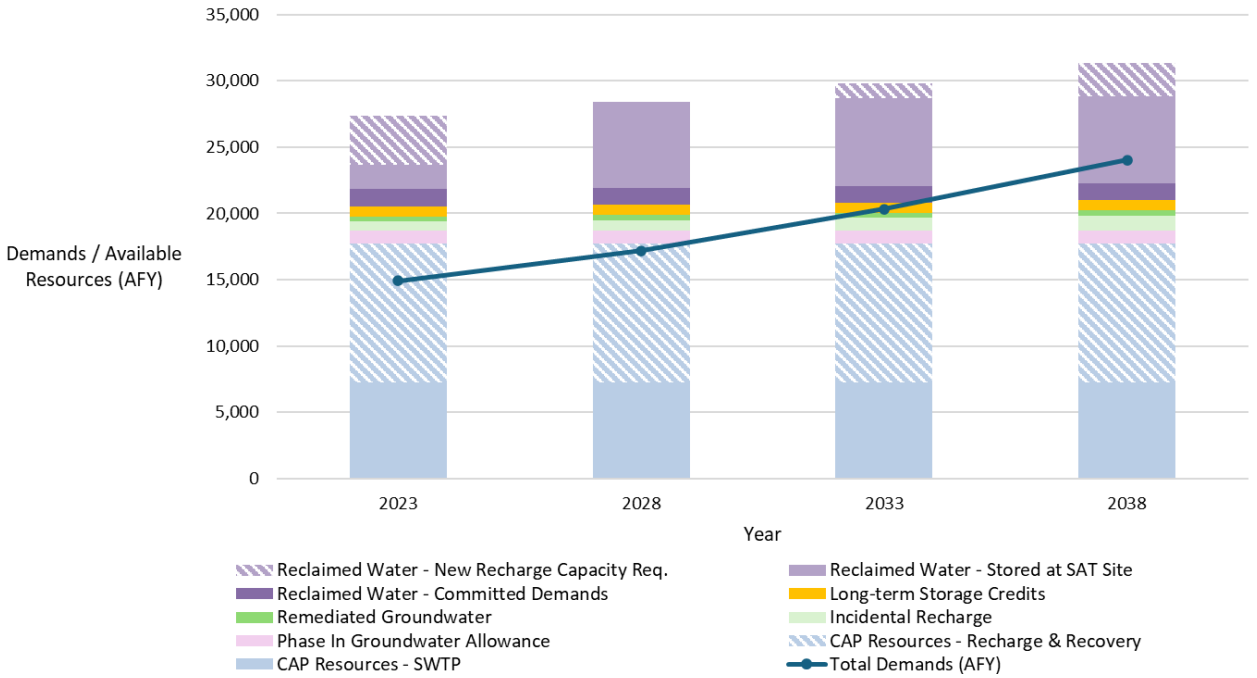


Figure 3.2 Renewable Supplies Versus Demands - Normal Year

3.4.2 Dry Water Year Supply and Demand Balance

Renewable supplies were compared to demands for three drought conditions, defined as a CAP water reduction of 30 percent, 50 percent, and 65 percent. The City's existing surface water supplies that could be affected by these drought shortages are the 10,742 AFY M&I sub-contract and the 7,000 AFY GRIC lease, totaling 17,742 AFY. Accordingly, the City's surface water supply would theoretically be reduced to 12,419 AFY, 8,871 AFY, and 6,210 AFY for the 30 percent, 50 percent, and 65 percent drought scenarios, respectively. Table 3.5 summarizes the City's estimated available CAP water resources under normal and drought conditions.

Table 3.5 Potential CAP Drought Reductions

	Availability (AFY)			
Water Resource	Normal Year	30% Drought	50% Drought	65% Drought
M&I Sub-contract	10,742	7,519	5,371	3,760
GRIC Lease	7,000	4,900	3,500	2,450
Total	**17,742**	**12,419**	**8,871**	**6,210**

Although these were drought analyses, to be conservative for the IWMP, no reductions to total water demands (i.e., potential impacts from water conservation) were assumed.

3.4.2.1 30 Percent CAP Supply Reduction

Table 3.6 shows the demand growth versus available supplies through the year 2038 assuming a 30 percent reduction in available CAP water. This supply versus demand comparison is shown graphically in Figure 3.3. Table 3.6 displays the total potable and reclaimed demands which include demands from WPA 2 – WPA 5.

The 30 percent CAP supply reduction supply and demand balance shows:

- Even with reduced CAP supplies, the City has sufficient renewable supplies in the water portfolio to meet the total potable and non-potable projected demands through year 2038, with surpluses ranging from approximately 2,000 AFY to 7,100 AFY across the planning horizon.
- Full utilization of CAP water to meet demands requires either an expansion of the SWTP or continued AS&R through a USF or GSF and recovery via recovery wells.

Table 3.6 Renewable Water Resources Supplies and Demands - 30 Percent CAP Reduction

	Annual Demand (AFY)			
	2023	2028	2033	2038
Potable Water Demand(1)	13,660	15,920	19,080	22,780
Reclaimed Demands(1)	1,266	1,266	1,266	1,266
Total Water Demand	**14,926**	**17,186**	**20,346**	**24,046**
Supply (AFY)				
Surface Water				
CAP M&I	7,519	7,519	7,519	7,519
CAP GRIC Lease	4,900	4,900	4,900	4,900
Total CAP Surface Water	**12,419**	**12,419**	**12,419**	**12,419**
Groundwater				
Annual Credit for Incidental Recharge(2)	697	812	973	1,162
Groundwater Allowance	948	948	948	948
Remediated Groundwater Pumping Allowance	374	374	374	374
CAGRD(3)	0	0	0	0
Long Term Storage Account	786	786	786	786
Total Renewable Groundwater	**2,805**	**2,920**	**3,081**	**3,270**
Reclaimed Water				
Reclaimed Water Produced(4)	6,823	7,614	9,003	10,361
Total Reclaimed Water	**6,823**	**7,614**	**9,003**	**10,361**
Total Renewable Supplies	**22,047**	**22,953**	**24,503**	**26,050**
Surplus/(Deficit)	7,121	5,767	4,157	2,004

Notes:
(1) Includes demands for WPA 2, WPA 3 and part of WPA 4.
(2) Per the City's Designation, Incidental Recharge is calculated as 5.1 percent of the average annual daily demand.
(3) The City has the option to replenish up to 15,940 AFY through CAGRD.
(4) The amount of effluent water available to be stored and recovered is the total amount of effluent water minus the amount of effluent water used for direct treatment and delivery.

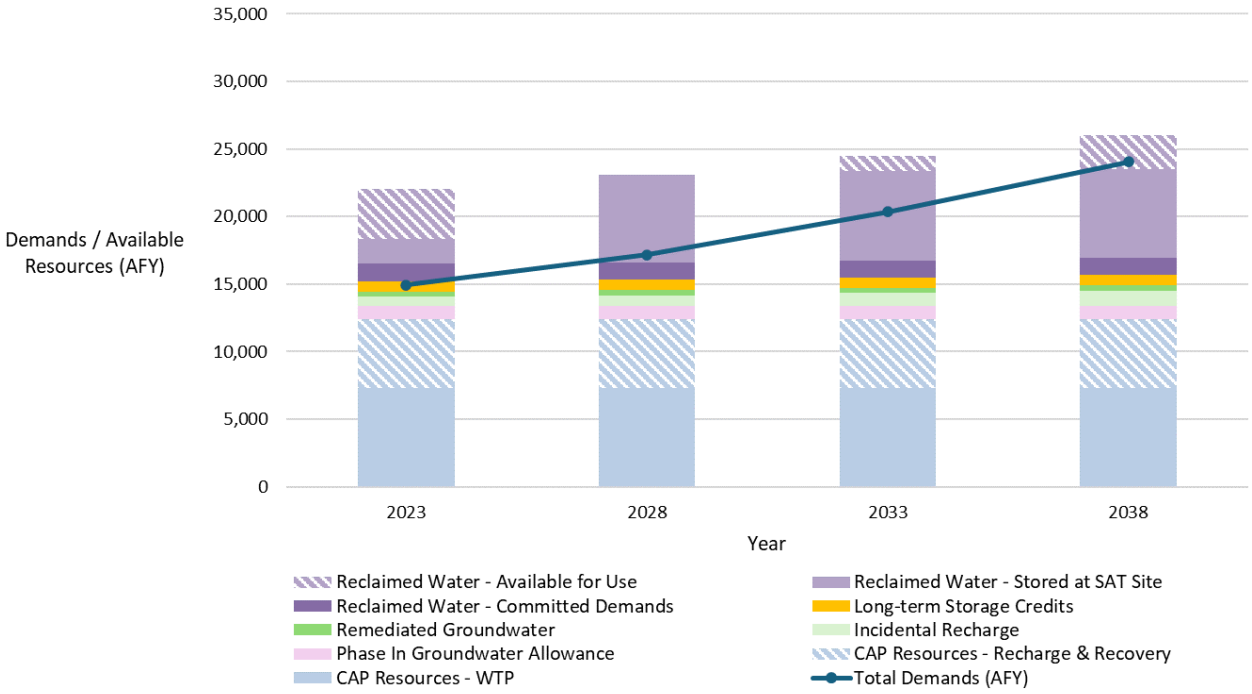


Figure 3.3 Renewable Supplies Versus Demands - 30 Percent CAP Reduction

3.4.2.2 50 Percent CAP Supply Reduction

Table 3.7 shows the demand growth versus available supplies through the year 2038 assuming a 50 percent reduction in available CAP water. This supply versus demand comparison is shown graphically in Figure 3.4.

The 50 percent CAP supply reduction supply and demand balance shows:

- With more significant CAP supply reductions, the City has sufficient renewable supplies in the water portfolio to meet the total potable and non-potable projected demands through year 2033, with a shortfall of approximately 1,500 AFY predicted in year 2038.
- Full utilization of CAP water to meet demands requires either an expansion of the SWTP or continued AS&R through a USF or GSF and recovery via recovery wells.
- In 2038, the City will need an additional approximately 2,500 AFY of recharge capacity to accommodate the estimated reclaimed water produced that exceeds non-potable demands.

Table 3.7 Renewable Water Resources Supplies and Demands - 50 Percent CAP Reduction

	Annual Demand (AFY)			
	2023	2028	2033	2038
Potable Water Demand[1]	13,660	15,920	19,080	22,780
Reclaimed Demands[1]	1,266	1,266	1,266	1,266
Total Water Demand	**14,926**	**17,186**	**20,346**	**24,046**
Supply (AFY)				
Surface Water				
CAP M&I	5,371	5,371	5,371	5,371
CAP GRIC Lease	3,500	3,500	3,500	3,500
Total CAP Surface Water	**8,871**	**8,871**	**8,871**	**8,871**
Groundwater				
Annual Credit for Incidental Recharge[2]	697	812	973	1,162
Groundwater Allowance	948	948	948	948
Remediated Groundwater Pumping Allowance	374	374	374	374
CAGRD[3]	0	0	0	0
Long Term Storage Account	786	786	786	786
Total Renewable Groundwater	**2,805**	**2,920**	**3,081**	**3,270**
Reclaimed Water				
Reclaimed Water Produced[4]	6,823	7,614	9,003	10,361
Total Reclaimed Water	**6,823**	**7,614**	**9,003**	**10,361**
Total Renewable Supplies	**18,499**	**19,405**	**20,955**	**22,502**
Surplus/(Deficit)	3,573	2,219	609	(1,544)

Notes:
(1) Includes demands for WPA 2, WPA 3 and part of WPA 4.
(2) Per the City's Designation, Incidental Recharge is calculated as 5.1 percent of the average annual daily demand.
(3) The City has the option to replenish up to 15,940 AFY through CAGRD.
(4) The amount of effluent water available to be stored and recovered is the total amount of effluent water minus the amount of effluent water used for direct treatment and delivery.

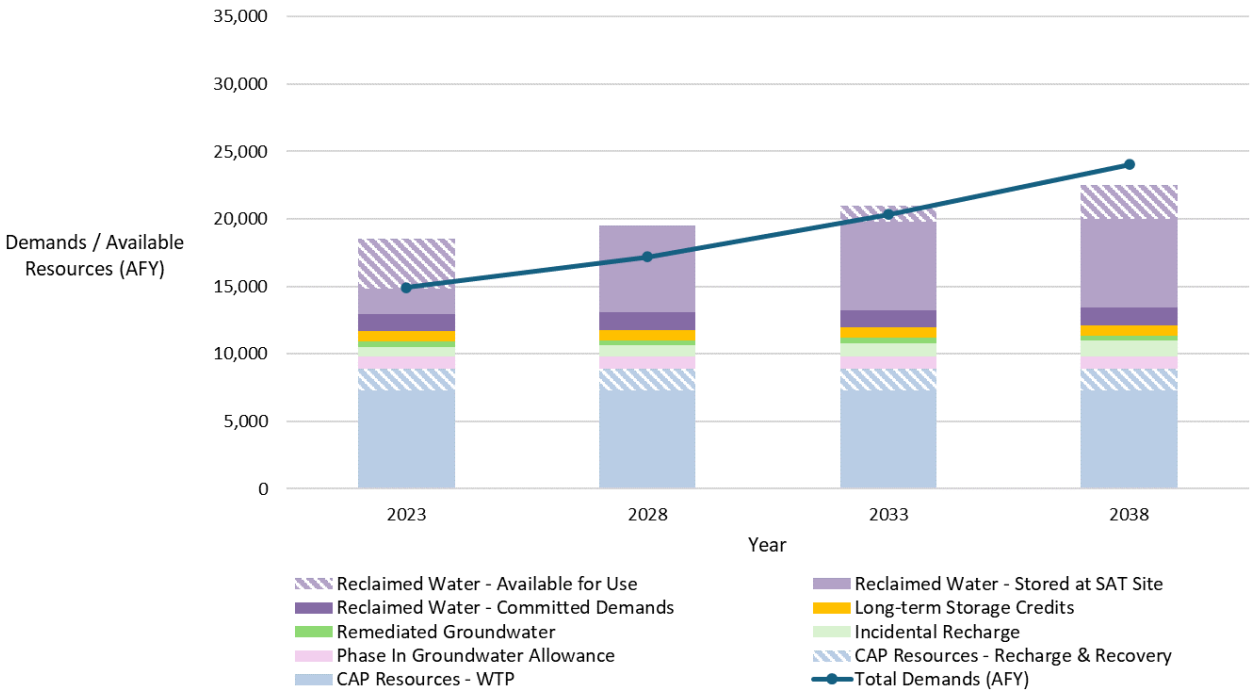


Figure 3.4 Renewable Supplies Versus Demands - 50 Percent CAP Reduction

3.4.2.3 65 Percent CAP Supply Reduction

Table 3.8 shows the demand growth versus available supplies through the year 2038 assuming a 65 percent reduction in available CAP water. This supply versus demand comparison is shown graphically in Figure 3.5.

The 65 percent CAP supply reduction supply and demand balance shows:

- With severe CAP supply reductions, the City does not have sufficient renewable supplies in the water portfolio to meet the total potable and non-potable projected demands beginning in year 2028. The projected renewable supply shortfalls in years 2028 through 2038 range from approximately 400 to 4,200 AFY.
- With severe CAP reductions, the available CAP water (6,210 AFY = 5.5 mgd) is less than the existing capacity of the SWTP. Under this scenario, the existing capacity at the SWTP allows for the full utilization of available CAP water to meet demands without the need for continued AS&R.
- Full utilization of available reclaimed water supplies would be required under this scenario, and additional recharge capacity (approximately 2,500 AFY) would be required in year 2033 and beyond to utilize available resources.

Table 3.8 Renewable Water Resources Supplies and Demands - 65 Percent CAP Reduction

	Annual Demand (AFY)			
	2023	2028	2033	2038
Potable Water Demand(1)	13,660	15,920	19,080	22,780
Reclaimed Demands(1)	1,266	1,266	1,266	1,266
Total Water Demand	**14,926**	**17,186**	**20,346**	**24,046**
Supply (AFY)				
Surface Water				
CAP M&I	3,760	3,760	3,760	3,760
CAP GRIC Lease	2,450	2,450	2,450	2,450
Total CAP Surface Water	**6,210**	**6,210**	**6,210**	**6,210**
Groundwater				
Annual Credit for Incidental Recharge(2)	697	812	973	1,162
Groundwater Allowance	948	948	948	948
Remediated Groundwater Pumping Allowance	374	374	374	374
CAGRD(3)	0	0	0	0
Long Term Storage Account	786	786	786	786
Total Renewable Groundwater	**2,805**	**2,920**	**3,081**	**3,270**
Reclaimed Water				
Reclaimed Water Produced(4)	6,823	7,614	9,003	10,361
Total Reclaimed Water	**6,823**	**7,614**	**9,003**	**10,361**
Total Renewable Supplies	**15,838**	**16,744**	**18,294**	**19,841**
Surplus/(Deficit)	912	(442)	(2,052)	(4,205)

Notes:
(1) Includes demands for WPA 2, WPA 3 and part of WPA 4.
(2) Per the City's Designation, Incidental Recharge is calculated as 5.1 percent of the average annual daily demand.
(3) The City has the option to replenish up to 15,940 AFY through CAGRD.
(4) The amount of effluent water available to be stored and recovered is the total amount of effluent water minus the amount of effluent water used for direct treatment and delivery.

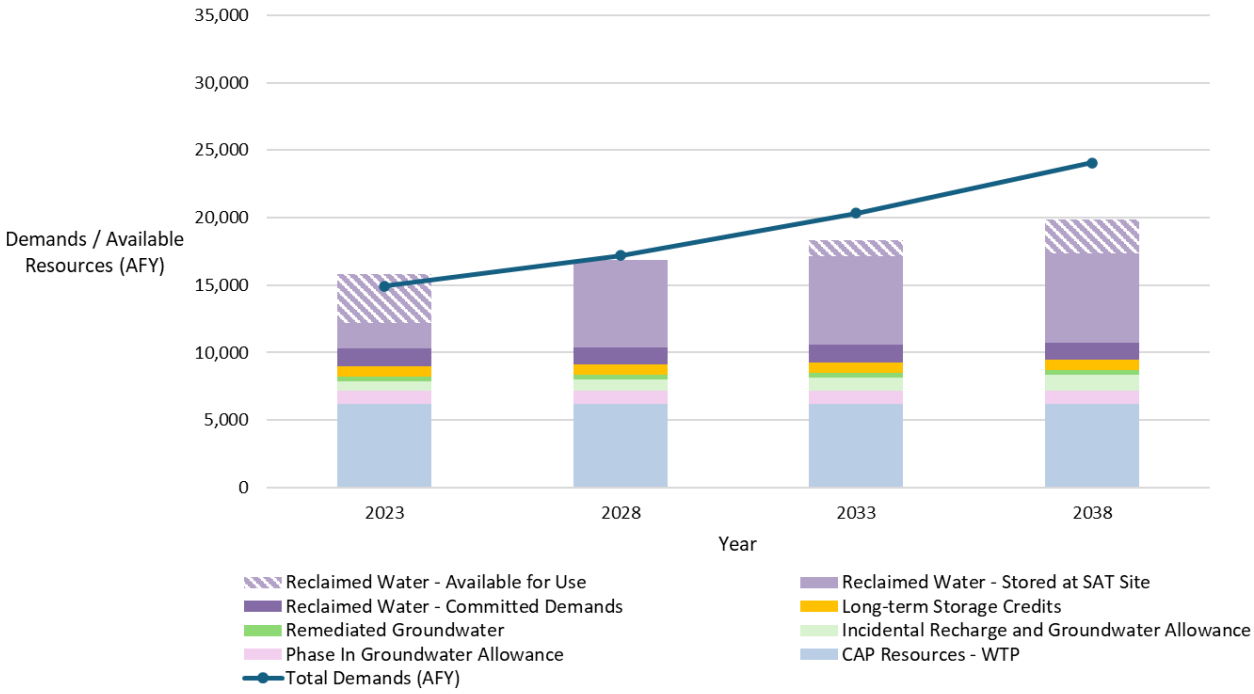


Figure 3.5 Renewable Supplies Versus Demands - 65 Percent CAP Reduction

3.4.3 Drought Mitigation Strategies

There are several options available to the City for mitigating the impact of these potential shortfalls. These include:

1. ADWR's drought exemption which can be authorized by the Director of ADWR. This exemption allows 80 percent of a surface water shortfall to be made up from groundwater (drought pumping) without incurring a replenishment obligation. This applies to the City's groundwater replenishment obligation and can only be implemented if there is physical groundwater available to pump to replace the surface water shortage. This implies that if additional drought groundwater pumping is allowed, additional wells will be required to pump the increased supply.
2. A second measure of protection is provided by the AWBA. The AWBA has the obligation to provide "firming" water supplies for a 20 percent cutback in CAP M&I water supplies. The AWBA has developed scenarios and an operating plan for replacement as described in Section 3.3.1.2.
3. A third opportunity for the City to mitigate the shortfall is for the City to implement its demand management program. This program is embodied in Section 14-5-6 of the City's Code of Ordinances: Water Use Restrictions. This section states that the City Manager is authorized to declare a water shortage and the implementation of water use and conservation restrictions and employ the City's Drought Preparedness Plan. Any declaration of water shortage will identify the water use restrictions stage and water use restrictions and measures to be implemented as defined in the City's Drought Preparedness Plan. This program could be implemented to help the City mitigate its surface water shortfalls during a drought.

ADWR allows 80 percent of the surface water shortfall to be made up from groundwater pumping (drought pumping) without a replenishment obligation. Under the 65 percent CAP supply reduction scenario, the City's surface water shortfall would be 11,532 AFY (normal year CAP supply volume of 17,742 AFY – 6,210 AFY available under 65 percent CAP supply reduction scenario). With the drought pumping exemption, the City could pump approximately 9,200 AFY (11,532 AFY * 80 percent) of groundwater without a replenishment obligation. This drought pumping volume is greater than the 4,205 AFY deficit predicted in year 2038 as discussed in Section 3.4.2.3.

A short-term severe reduction in CAP supplies over several years was also considered. Assuming the 65 percent CAP supply reductions were seen over 5 years, a total of 21,025 ac-ft (4,205 AFY * 5 years) of additional groundwater would need to be pumped to cover the shortfall of renewable supplies. This volume of groundwater is within the drought pumping volume allowed (9,225 AFY * 5 years = 46,128 ac-ft).

If drought pumping exemption is not granted by ADWR, the City could use LTSCs to meet the shortfall (replenishment obligation) predicted in year 2038 of the 65 percent CAP supply reduction scenario. As of 2022, the City has accrued 90,293.66 ac-ft of LTSCs. In evaluating a short-term severe reduction in CAP supplies over 5 years and assuming a drought pumping exemption was not granted, and a total of 21,025 ac-ft of LTSCs would be needed to meet the shortfall under this scenario. This use of LTSCs would reduce the City's total accrued LTSCs to 69,268.66 ac-ft (90,293.66 ac-ft - 21,025 ac-ft). This reduction is approximately 23 percent of the City's total LTSCs as of year 2022. Based on this, and assuming the City is able to fully utilize the renewable resources discussed in Section 3.4 through AS&R, significant banking of additional LTSCs is recommended to meet potential short-term future drought conditions. It is further recommended that the City focus on meeting demands with renewable resources to reduce its use of supplies with replenishment obligations.

Regardless of whether drought pumping or LTSCs are used to meet a potential future renewable supply deficit during drought conditions, adequate groundwater physical availability and groundwater production capacity are still needed to meet that demand. As discussed in Section 3.4.1, the City's current groundwater production capacity is greater than the demands predicted in year 2038. The City's groundwater physical availability, discussed in Section 3.3.2, is also greater than the 4,205 AFY deficit seen under this scenario.

3.5 Future Water Supply Opportunities

The following sections describe future water supply opportunities for the City to consider in developing long-term strategies for mitigating water supply shortages and increasing water supply resilience.

3.5.1 Bartlett Dam New Conservation Storage

Bartlett Dam is the lower of two dams on the Verde River system. Accumulation of sedimentation behind the upper dam, Horseshoe Dam, has reduced storage capacity, which is currently approximately one third of its 132,000 ac-ft design capacity. In 2021, SRP announced its intention to evaluate options to raise Bartlett Dam to restore and/or increase capacity in the Verde system. The Bureau of Reclamation (BOR), in partnership with SRP, undertook an appraisal study to collect data and stakeholder input. The purpose of this task was to evaluate the needs and perspectives regarding the loss of storage capacity on the Verde system. As a result of the appraisal process, the BOR, SRP, and a number of stakeholders started a feasibility study and launched a steering committee to evaluate options to raise Bartlett Dam to restore and/or increase capacity. The City is engaged in this process, which could potentially result in additional renewable water resources available to the City.

SRP in conjunction with 22 tribal, agricultural, and municipalities parties, including the City, are working with BOR to complete a feasibility study evaluating the proposed expansion to Bartlett Dam. After the completion of this feasibility study, a finalized plan will be presented to Congress for consideration and approval. Design and construction could take 10-15 years beyond the completion of the feasibility study. There is potential for the City to be a participating party and gain access to a portion of the additional storage and supply in this project. With significant interest in this project, negotiations for specific amounts of water may be challenging. It is recommended that the City remain engaged in this process and open to developing this supply option.

3.5.2 Priority 3 or 4 Colorado River Contract Water

Colorado River water rights could be obtained by purchasing land adjacent to the river that has historically been used for agriculture and conveying it through the CAP canal to the City. This could include Priority 3 and 4 contracts. Water contracts executed prior to September 30, 1968 are Priority 3 and have a higher delivery priority than the CAP. Water contracts executed after this date (including CAP water) are Priority 4.

This type of water purchase and conveyance through the CAP canal would require review and approval from the Secretary of the Interior, ADWR and CAWCD. These supplies could be used immediately by the City for either treatment and delivery to customers or for recharge for long-term storage credits. Priority 3 water would be less susceptible to drought than the City's CAP M&I sub-contract due to its higher priority on the Colorado River.

Acquiring these supplies could be challenging due to potential local opposition to fallowing farmland and severing water rights in historically agricultural communities, potentially competing with CAWCD as well as other water providers for potential acquisitions, and gaining institutional approval from local, state, and federal entities. An additional challenge could include establishing agreements with CAWCD for conveyance capacity in the CAP canal when CAGRD/CAWCD could be a competing party in potential acquisition purchases.

3.5.3 Imported Groundwater

Another approach could include developing the groundwater supply outside of the Phoenix AMA and transporting the supply to the City. This could include groundwater from the Harquahala Irrigation Non-Expansion Area (INA), the McMullen Valley or Butler Valley areas. These supplies would require treatment prior to distribution. This concept would require IGAs and the development of wells outside the AMA along with pumping, transmission, storage, water treatment, and delivery infrastructure required to convey this water to the City's potable water system. Imported groundwater supplies will likely be expensive to acquire and significant infrastructure would be needed to access this water. There may be a potential to develop a partnered project with other communities that may improve the economic viability of this project.

3.5.4 Water from the Buckeye Canal

The Buckeye Canal passes through the City and serves BWCDD irrigation lands that someday are expected to develop. This could free up canal water for other uses that perhaps includes increasing the City's potable water supply. Water from this canal is attractive as a water supply because these canals convey a substantial amount of water through the City and would likely be much less expensive than importing water from afar. There are a number of issues that need to be investigated to determine the viability of this canal as a water source. These issues include:

1. What is the volume of water potentially available and what portion of the water is surface water, groundwater, and reclaimed water?
2. What are the legal issues that would need to be addressed in using this water?
3. Since reclaimed water is comingled in the canals with other water, would ADWR allow the reclaimed and surface water portions of this water to be recharged?

There may also be opportunities to exchange reclaimed water with BWCDD for other surface water. It is recommended that the City continue to work with BWCDD and ADWR to vet options for beneficial use of water supplied through the Buckeye Canal.

3.5.5 Regional Partnerships

The City could partner with other West Valley communities to develop a regional water supply solution. These partnerships could identify new water resources, or water sources that could be developed from water that is not currently being used to its full potential. These potential buildout supply alternatives can be further studied independently to determine their feasibility, project requirements, and costs to develop the required water supply.

3.5.6 Advanced Water Purification

The Arizona Department of Environmental Quality (ADEQ) is currently developing rules for the Advanced Water Purification (AWP) Program. On July 9, 2024, ADEQ published the draft AWP rules, and the final rules are anticipated by December 31, 2024. If pursued, AWP would provide an additional reliable, locally controlled, and drought-proof supplemental water supply for the City. Opportunities may arise for partnering with other cities on a regional AWP program. It is recommended that the City remain engaged in regional discussions on AWP. Beyond the possibility for regional AWP, the City could engage in a study to evaluate the feasibility of AWP locally at existing City facilities. Key elements of this study would include a flow balance to determine flows potentially available for AWP and an evaluation of water quality conditions at existing City facilities to inform the development of treatment train options.

3.6 Water Supply Development Strategies for Rainbow Valley

Within the Phoenix AMA, the City is unique in that its service area includes the Rainbow Valley groundwater sub-basin which is not within the Phoenix AMA groundwater model. Current rules allow developers in Rainbow Valley to continue to obtain CAWS with groundwater as the sole source of supply, which is not currently allowed elsewhere in the Phoenix AMA. With the announcement that no new CAWS would be issued using groundwater as a source within the Phoenix AMA, there has been more development interest in Rainbow Valley. The City currently serves water to customers in Rainbow Valley and anticipates continued growth there over the next several decades.

In support of its 2024 MDAWS application, the City conducted a hydrologic study for the Rainbow Valley portion of the City's service area. The hydrologic study was based on existing AWS demands from developer projects plus a new amount of City pumping. These pumping demands were simulated in the hydrologic modeling analysis in a manner so as not to violate the AWS rule requirement of not creating aquifer drawdowns exceeding 1000 feet below ground surface over a 100-year period. The simulated modeling results for the three pumping wells produced estimated depths to groundwater of 480.20, 544.90, and 649.00 feet below ground surface, respectively. The results of the study demonstrated that the City could pump 1,160 AFY for the 100-year period in addition to the developer committed pumping. As a conservative assumption, no recharge of reclaimed water was assumed within the model.

Current development plans do not provide any new water sources to recharge the aquifer or to offset the groundwater pumping. Over time, the available aquifer storage will decline. When the City and other water users seek renewal of their designation of assured water supply in the future, the available physical supply determination of groundwater will decline due to dewatering. This means that future allowable pumping out of this aquifer will be reduced. A water supply based on groundwater pumping that dewaters the aquifer is not sustainable. New supplies will need to be developed and delivered to Rainbow Valley. If no other supplies are provided, the long-term sustainable supply will be reduced, and development will not be able to continue. ADWR is currently looking for ways to streamline the process for modifying existing DAWS to include new supplies or other limited changes. These potential policy changes could be beneficial to the City as new supplies are developed and delivered to Rainbow Valley.

In addition to supply sustainability considerations, the City faces challenges in expanding its systems in Rainbow Valley as a number of developers there have an approved AAWS. Under current ADWR rules there is not an established mechanism in place to govern the transfer of groundwater physical availability associated with a CAWS or AAWS to a Designated Provider. This creates an additional challenge for the City, as a Designated Provider, working to serve developments with an approved AAWS or CAWS to provide assurances that the City's Designation can support their developments. The City is currently working with several developers within Rainbow Valley to define service agreements and infrastructure plans. Achieving these agreements will take time and effort coordinating with ADWR, attorneys, and development representatives to establish a process that does not currently exist. Guidance from ADWR on new approaches consistent with Assured Water Supply rules that consider mutually beneficial approaches to transferring groundwater physical availability from an AAWS to a Designated Provider, will also be necessary as the City continues discussions with developers within Rainbow Valley.

Given these conditions in the Rainbow Valley sub-basin, the following guiding principles are recommended as the City constructs water conveyance, treatment, and delivery infrastructure. Further discussion of these principles is described in Chapters 4, 5, and 6.

- Emphasis local recharge and recovery within the AOHI as recharge facilities and recovery wells are built.
- As the City enters into development agreements, the City should seek to retain as much reclaimed water as possible for groundwater replenishment.
- As ADWR continues to evaluate the process for modifying the DAWS, it is recommended that the City remain engaged with this process so the City is aware of any policy changes and can take advantage of those as new supplies are brought to Rainbow Valley.
- A portion of the City's CAP water allocation could eventually be a water supply for Rainbow Valley, but additional infrastructure may be needed.

3.7 Drought Response and Water Conservation

3.7.1 Drought Preparedness Plan

The City has a Drought Preparedness Plan (DPP), completed in 2022, that outlines proactive measures to respond to local water concerns and denotes clear triggers for implementing demand reduction measures. Within the DPP, four water use restriction stages are defined:

1. **Stage 1: Water Watch –** Enacted in response to direct impacts to the City's water portfolio, no mandatory water reduction measures are implemented at this stage. Outreach and messaging will be employed to emphasize the need for voluntary water use reductions.
2. **Stage 2: Water Alert –** This stage may be triggered when demand reaches/exceeds 85 percent of the daily available water production capacity and there is no expected recovery of service for the next seven days. Under this stage, the City can implement a combination of voluntary and mandatory water reductions from users.
3. **Stage 3: Water Warning –** This stage may be triggered when demand reaches/exceeds 90 percent of the daily available water production capacity and there is no expected recovery of service for the next seven days. The City can implement mandatory water restrictions for some or all users.
4. **Stage 4: Water Emergency –** Triggered when demands exceed 95 percent of the daily available water production supply, the City can invoke the most severe water use restrictions for all users at this stage.

Additionally, the DPP established a Water Emergency Response Team (WERT) that will assess current and projected water supplies, demands, and shortages and provide recommendations to the City Manager. Assembly of this group will occur when one of the water use restriction stages is triggered.

The DPP includes a drought matrix that provides a list of water reduction measures the City could implement during shortages. This matrix includes qualitative estimated water savings and the difficulty of implementing each of the recommended response actions. The DPP does not include any quantitative water conservation targets for any of the water use restriction stages. Neighboring Cities have quantitative water conservation targets ranging from 5 to 20 percent reduction goals depending on the stage of drought. It is recommended that the City work to establish quantitative water conservation targets for each of the water use restriction stages defined in the DPP.

3.7.2 Goodyear's Current Conservation Program

As a designated municipal water provider, the City has a legal obligation to reduce per capita groundwater reuse as a part of the 1980 Groundwater Management Act. The City currently implements a variety of water conservation practices that raise awareness of water conservation, help customers adopt good water management and irrigation practices, and help high water users learn to reduce water consumption. The City provides a number of rebates and incentives for residential customers including free home water checks and free home water conservation kits and brochures. Several rebates and incentives are also available to Homeowners Associations (HOA), multi-family residences, and businesses. The City supports several educational and outreach programs that range from providing free brochures and water guides to providing hands-on science, technology, engineering, and math (STEM) activities and classes for Grades 4-12. Additionally, the City has several ordinances focusing on water conservation.

3.8 Recommended Strategies to Manage Water Supplies and Demands

The City has sufficient renewable supplies in the water portfolio to meet the total potable and non-potable projected demands through year 2038 with a surplus of nearly 10,000 AFY in 2038. While the City has adequate renewable supplies to meet demands, additional capacity for CAP water and additional recharge capacity would be required to fully utilize these resources.

The following are recommended to help the City as it continues to develop and maintain a sustainable water supply to meet the needs of City residents and businesses:

1. The City has significant volumes of reclaimed water produced that exceed the projected reclaimed water non-potable demands. The annual recharge capacity of the SAT site cannot currently be utilized because of a reclaimed water transmission main restriction that limits water deliveries. It is recommended that the City take immediate action to install the needed transmission capacity to fully utilize the SAT site recharge capacity.
2. Beginning in 2033, the City is anticipated to have reclaimed water produced in excess of non-potable demands and the permitted recharge capacity of the SAT site (assuming action is taken to allow for the full permitted capacity of the SAT site to be used). To utilize this additional reclaimed water produced it is recommended that the City construct additional recharge capacity (2,500 AFY). Hydrogeologic studies will be required to identify favorable places for recharge.
3. Because of the importance of reclaimed water in the City's water resource portfolio, the City should structure any future development agreements and establish policies so that the City retains the reclaimed water for recharge. Additionally, the City should also seek opportunities to restructure existing agreements with developers to increase the amount of recharge that is available to the City.
4. The City should continue to pursue maximizing its reclaimed water recharge capability to offset groundwater pumping.
5. Annually, purchase the City's full allotment of CAP water to recharge until this water is required to supply current demands. The City should consider expanding the capacity at the SWTP prior to 2030 to allow for the utilization of the City's full CAP allotment.
6. The City should recharge and recover CAP water within the AOHI whenever possible as water recovered within the AOHI of a USF or within the boundaries of a GSF is not counted against the groundwater physical availability established in City's Designation.
7. As the City is more certain how its CAP water will ultimately be deployed, there will be less of a need to maintain capacity in CAWCD recharge facilities. There may be opportunities to lease capacity to other utilities, particularly those that have recovery wells within the AOHI of those facilities.
8. Seek opportunities to bank additional LTSCs to provide a mechanism to replenish groundwater pumped in response to reductions of CAP water allocations during drought. This protects the City if ADWR does not grant groundwater pumping exemptions to cover the City's groundwater replenishment obligations during extended periods of drought.
9. Seek opportunities to work with ADWR to establish guidance on new approaches that consider approaches to transferring groundwater physical availability from an AAWS to a Designated Provider, as the City continues discussions with developers within Rainbow Valley.

10. Develop quantitative water conservation targets for each of the water use restriction stages defined in the City's DPP.
11. Continue to engage with SRP in discussions regarding Bartlett Dam surface water.
12. Pursue opportunities to purchase or lease water that currently flows in the Buckeye irrigation canal. This potential water source is physically located in the City and therefore is more accessible than other water sources. As development occurs, this water supply might be purchased. The City should undertake a study to determine the legal issues that would need to be overcome before obtaining a right to this water. Negotiations should ascertain supply availability, canal operations, bulk water delivery potential, and recharge opportunities for LTSCs.

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CHAPTER 4 WATER INFRASTRUCTURE MASTER PLAN

4.1 Introduction

Chapter 4 presents the water system evaluation for the City as part of the 2024 IWMP. The purpose of this water master plan is to identify the water system improvements and timing to serve the City's needs through the 2030, 2035, and 2040 infrastructure planning periods. To develop the master plan, a hydraulic model was prepared to evaluate the capacity of the distribution system in each infrastructure planning period. Proposed future infrastructure was evaluated, the timing of the future water treatment facility expansion was determined, and a plan for future water system expansion was developed.

This chapter of the IWMP contains the following sections:

- 2024 Water Distribution System.
- Water Model Update.
- Calibrate model based on 2023 pressure monitoring data.
- Water system evaluations based on performance criteria and condition assessment.
- Future Water Distribution System Plan.
- Buildout Water System Hydraulic Evaluation.
- Water System Capital Improvement Projects.
- Conclusions and Recommendations.

4.2 2024 Water Distribution System

The City's water service area is divided into five water planning areas. The City's water planning areas are shown in Figure 4.1. WPA 2 contains the Goodyear SWTP and the wells that are currently in service. A one square mile area north of Van Buren St and west of Citrus Rd is served by the Arizona Water Company. A one-quarter square mile area south of Yuma Rd and East of Citrus Rd is served by Utility of Greater Buckeye Inc. WPA 3 includes Estrella and King Ranch, which is expected to start developing in the next five years. WPA 4 is currently undeveloped. The developments Terrasante, Rainbow Valley, and Estrella Highlands in WPA 4 are expected to start developing in the next five years. Some or all of these three developments may be served by a private water provider, however, this report assumes that all three areas will be served by the City. Planning infrastructure for these areas is one of the objectives of this report. WPA 5 is undeveloped. WPA 5 is not expected to start developing during the planning periods of this master plan and the area may be served by a private utility, so it is not included in this master plan.

4.2.1 Pressure Zones

The City's water distribution system is split into two major areas: WPA 2 which includes Central Goodyear and WPA 3 which includes Estrella. WPA 2 is located north of the Gila River and contains a mix of residential, commercial, and industrial developments. WPA 3 is located south of the Gila River and consists of relatively new residential developments with some community commercial development.

Figure 4.2 shows the City's existing (2023) water distribution system and pressure zones. The City's water distribution system consists of three primary pressure zones and two sub-pressure zones: Central, Zone 1 South, Zone 1 Reduced, and Zone 2 South. Central Goodyear (WPA 2) is served by the Central Zone. WPA 3 is served by the Zone 1 South and Zone 2 South pressure zones. Zone 1 South has a reduced pressure zones at lower elevations (Zone 1 Reduced). Pressure zones are shown in Figure 4.2. A pressure zone schematic of the distribution system is provided in Figure 4.3 to illustrate the elevation ranges of each pressure zone and how the pressure zones are supplied.

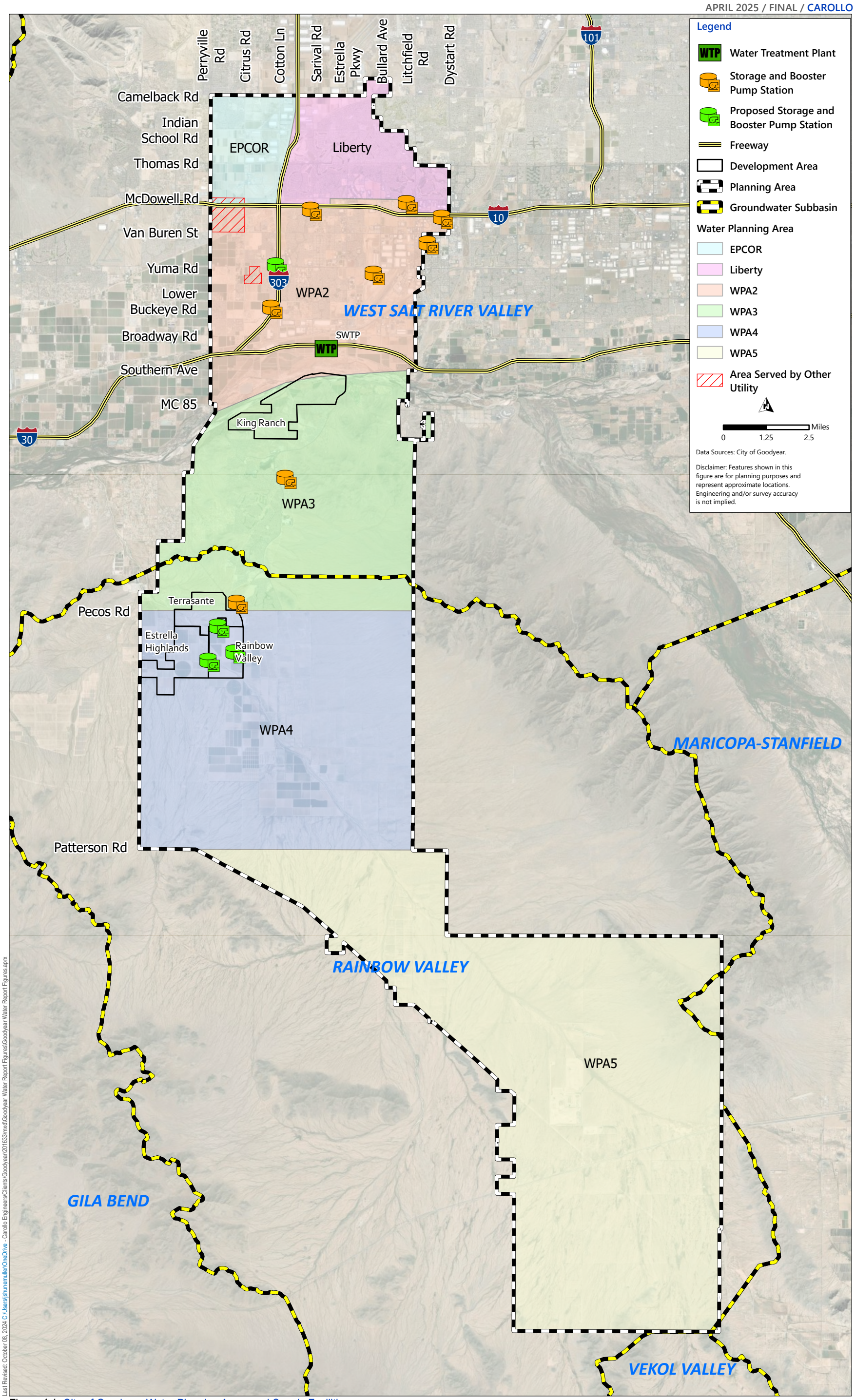


Figure 4.1 City of Goodyear Water Planning Areas and Supply Facilities

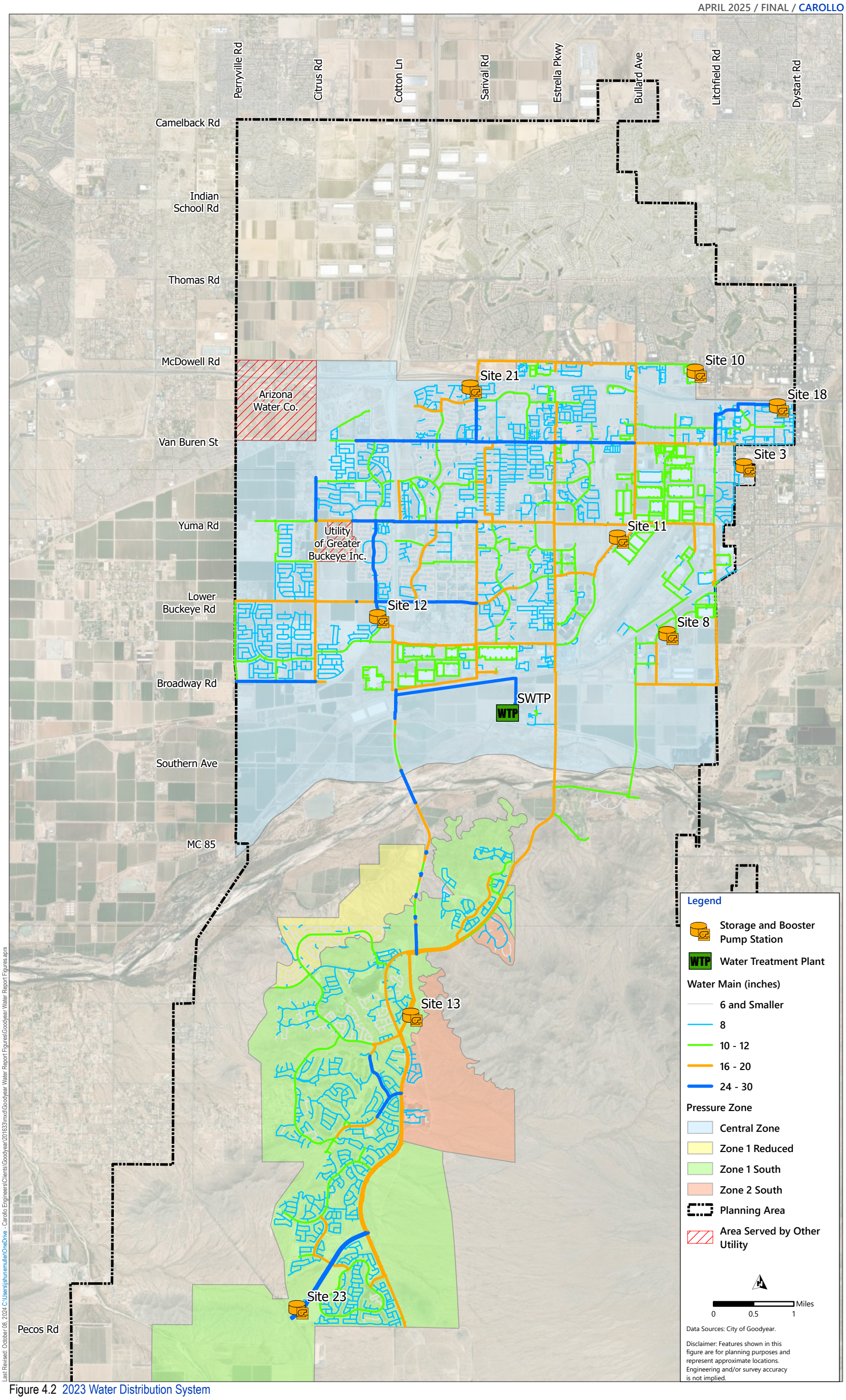


Figure 4.2 2023 Water Distribution System

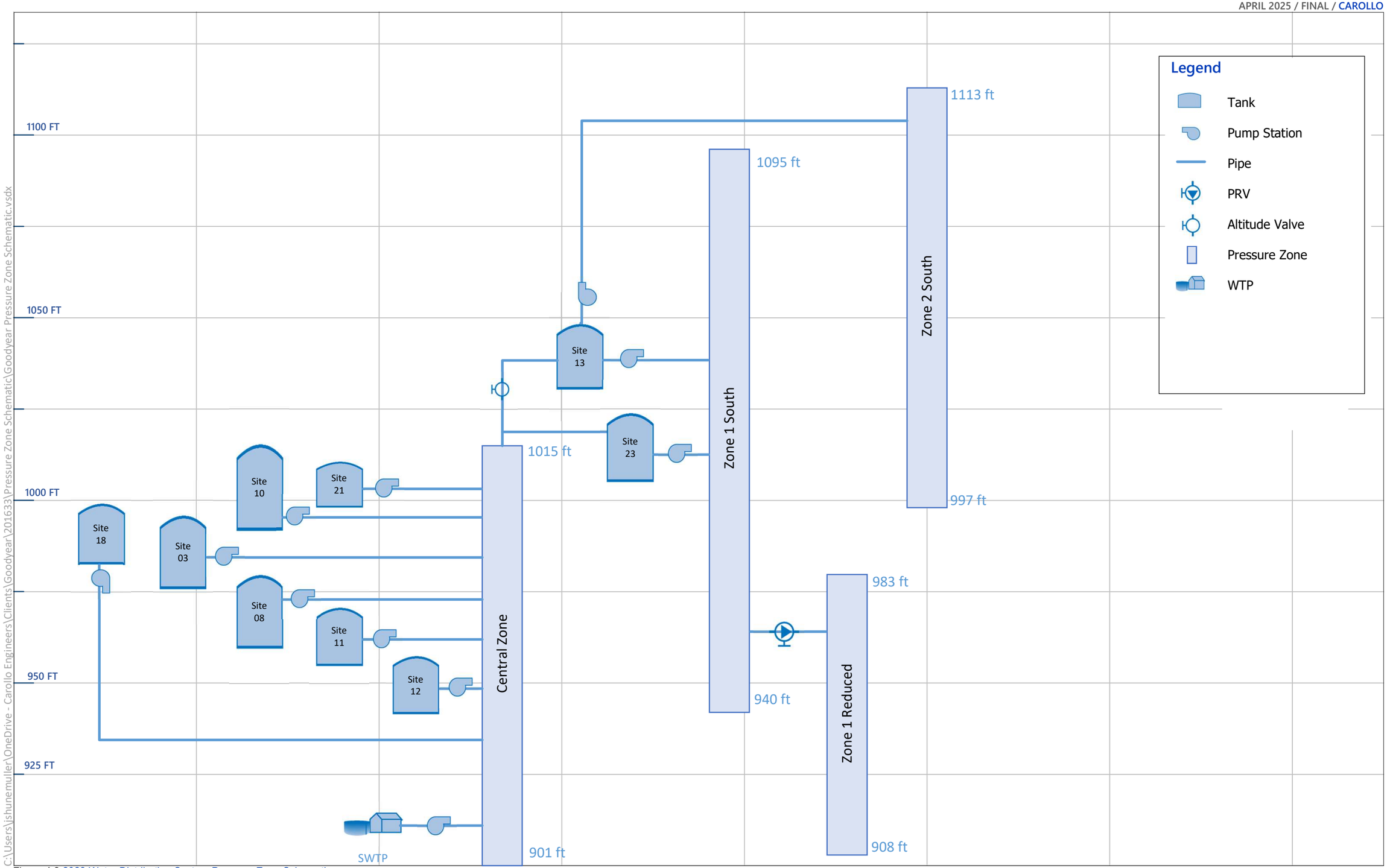


Figure 4.3 2023 Water Distribution System Pressure Zone Schematic

4.2.2 Water Supply Facilities

4.2.2.1 Wells

The City has 15 wells that are in WPA 2, of which 13 are active. The location of each well is shown in Figure 4.4 and pumping flow rates are summarized in Table 4.1. Well 3 is the only well that does not require treatment or that is not used in a blending program to help other wells meet water quality requirements. Water from wells that require treatment is pumped to a storage and pumping site that is also equipped with a treatment facility.

The City's well treatment sites are listed below with a description of treatment activity:

- **Site 11 (Bullard Water Campus) –** RO treatment is provided to Wells 19, 22, and 26. Wells 1, 11, and 20 are blended with the RO product water in the finished water reservoir. Blending schemes are important to maintain capacity at the Bullard Water Campus and the loss of one well may impact the ability of the City to use another well.
- **Site 12 –** RO treatment is provided for Well 12 and Well 24.
- **Site 21 –** Arsenic treatment is provided for Adaman Wells 1 and 2.
- **Site 18 –** Before the well failed, arsenic treatment was provided for Well 18B, which was blended with water from Wells 6 and 18A in the finished water reservoir.

Table 4.1 City of Goodyear Wells

Well	Pumping Flow Rate (gpm)(1)	Point of Entry into the Water Distribution System
Well 1	500	Site 11
Well 3	425	Well 3
Well 6	485	Site 18
Well 11	620	Site 11
Well 12	850	Site 12
Well 18A	850	Site 18
Well 18B(2)	0	Site 18
Well 19	750	Site 11
Well 20(3)	1,600	Site 11
Well 22(3)	1,950	Site 11
Well 24	2,300	Site 11
Well 26	1,900	Site 12
Adaman Well 1	1,340	Site 21
Adaman Well 2	500	Site 21
Adaman Well 3(4)	1,200	Site 21
Total	**15,270**	
Toal (mgd)	**22.0**	

Notes:
(1) Production capacities for each well were provided by the City.
(2) Well 18B has failed and needs replacement.
(3) Well 20 requires blending with Well 22 to manage arsenic levels.
(4) Adaman Well 3 is currently offline but expected to be brought online in the future. Therefore, it is listed as out of service for calculating the City's current "Firm" capacity.

4.2.2.2 Surface Water Treatment Plant

The City's surface water is a CAP allocation that is wheeled through the interconnect at the Granite Reef Dam and wheeled through SRP canals to a location in Avondale where a pump station delivers through a 24-inch pipeline and treated at the City's SWTP.

The City's SWTP reliable production capacity is 4,500 gpm. A future expansion is planned to increase the water production to 10,500 gpm. The SWTP is co-located with the 157th Avenue WRP so that in the future, the City could implement DPR if it chose to do so. The SWTP is also shown in Figure 4.4.

4.2.3 Pump Stations

The City currently has 10 storage and booster pump station sites, not counting the pump station at the SWTP. Eight of the booster stations are in the Central Zone and two are in Zone 1 South. Five of the pump stations in the Central Zone are supplied by wells (Sites 3, 11, 12, 18, and 21). Three of the pump station sites (7, 8, 10) store distribution system water during low demand times and then pump the water out to help supply peak hour demands. Of these three, Site 7 has been taken out of service. Site 8 is outdated and was being considered for abandonment but may be kept to help provide fire flows for nearby data centers or be replaced with a newer facility. The City is planning to construct a new 1.5-million-gallon (MG) tank at Site 18 to offset the retirement of storage at Sites 7 and 8.

Site 13 has two sets of booster stations, one to deliver water to Zone 1 South and the other to deliver water to Zone 2 South. Site 13 (Zone 2) station has three pumps but currently, only two pumps can be run at a time due to power restrictions. The Site 23 booster pump station takes water from the Central Zone and pressurizes the southern part of Zone 1 South. Site 23 is also located where it can provide a water supply to future development in WPA 4.

Table 4.2 summarizes the booster pump stations in the water distribution system.

Table 4.2 Goodyear Pump Station Summary

Site Name	Elevation (ft)	Pressure Zone(s)	Number of Pumps	Total Capacity (gpm)	Firm Capacity (gpm)
Site 3	977.9	Central	2	1,000	500
Site 7	907.6	Central	3	1,500	0
Site 8	959.2	Central	2	1,000	500
Site 10	990.4	Central	2	1,000	500
Site 11	954.7	Central	6	5,600	4,800
Site 12	943.3	Central	6	6,500	6,500
Site 13 (Zone 1)	1031.9	Zone 1 South	5	6,400	3,400
Site 13 (Zone 2)	1031.9	Zone 2 South	3	1,000	500
Site 18	985.7	Central	3	2,800	1,840
Site 21	998.6	Central	5	7,040	5,200
Site 23	1008.0	Zone 1 South	5	11,070	7,710

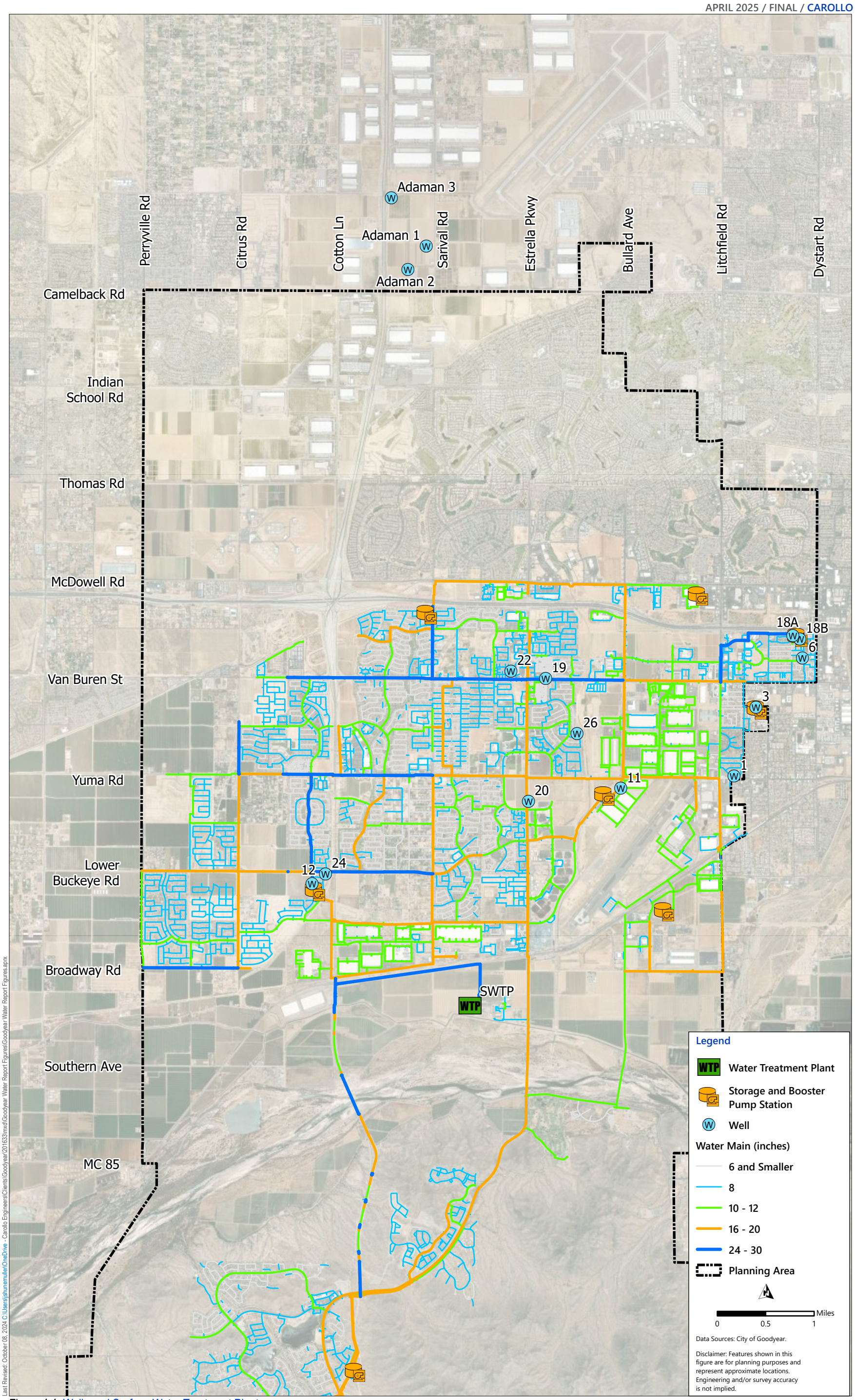


Figure 4.4 Wells and Surface Water Treatment Plant

4.2.4 Storage

The City currently has a storage reservoir located at each of the ten booster pump station sites, and Site 12 has two storage reservoirs, for a total of 11 reservoirs, as well as additional storage available at the SWTP. The City has a total of 14.28 MG of available storage capacity: 8.98 MG in the Central Zone and 5.30 MG in Zone 1 South. Table 4.3 summarizes the capacity of the City's storage reservoirs.

Table 4.3 Goodyear Existing Storage Reservoir Summary

Site Name	Pressure Zone	Total Capacity (MG)	Available Capacity (MG)(1)
Site 3	Central	0.18	0.16
Site 7	Central	0.75	0.00
Site 8	Central	0.75	0.65
Site 10	Central	0.75	0.67
Site 11	Central	2.00	1.70
Site 12	Central	2 @ 2.00	3.20
Site 18	Central	1.00	0.80
Site 21	Central	2.00	1.60
SWTP	Central	0.20	0.20
Central Zone Total		**11.63**	**8.98**
Site 13	Zone 1 South	1.5	1.3
Site 23	Zone 1 South	5.0	4.0
Zone 1 South Total		**6.5**	**5.3**

Notes:
(1) Less than the actual rated capacity of the reservoir. Indicates estimate of usable capacity after accounting for the reservoir overflow elevation and the space needed to keep pumps from running dry.

4.2.5 Pipelines

The City's water distribution system consists of 451 miles of water distribution mains ranging from 4 to 30 inches in diameter. Table 4.4 presents a summary of the water mains by diameter, based on the City's GIS geodatabase. As shown in Table 4.4, approximately 63 percent of the City's water mains are 6 or 8 inches in diameter and approximately 30 percent of water mains are 10 to 16 inches in diameter.

Table 4.5 summarizes the City's water mains by pipe material. Over 90 percent of the water mains are ductile iron and most of the remaining pipes are asbestos cement.

Table 4.6 summarizes the City's water mains by decade of installation. Over 70 percent of the City's water mains have been installed since the year 2000. Only 3.6 percent of the City's water mains are 50 years or older. Therefore, most of the Goodyear water system is relatively new.

The data for Table 4.4, Table 4.5, and Table 4.6 was obtained from the City's GIS data. Pipes in the GIS that are smaller than 4 inches in diameter were assumed to be privately owned service mains and were excluded from these tables.

Table 4.4 Water Main Lengths by Diameter

Diameter (in)	Length (mi)	Percent of System
4	5.1	1.1%
6	139.0	30.8%
8	146.8	32.5%
10	7.9	1.8%
12	66.3	14.7%
16	61.8	13.7%
18	0.3	0.1%
20	3.8	0.9%
24	16.2	3.6%
30	3.9	0.9%
Total	**451.1**	

in - inch(es); mi - mile(s)

Table 4.5 Water Mains by Material

Pipe Material	Total Length (mi)	Percent
Asbestos Cement	37.0	8.2%
Ductile Iron	410.2	90.9%
Polyvinyl Chloride (PVC)	3.9	0.9%
Unknown	0.005	0.0%
Total	**451.1**	

Table 4.6 Water Mains by Age

Pipe Install Decade	Total Length (mi)	Percent
1950s	2.2	0.5%
1960s	2.4	0.5%
1970s	11.7	2.6%
1980s	65.8	14.6%
1990s	48.0	10.6%
2000s	293.5	65.1%
2010s	26.2	5.8%
2020s	1.3	0.3%
Unknown	0.02	0.0%
Total	**451.1**	

4.3 Water Distribution System Hydraulic Model Update

The City's previous water system model used the Infowater modeling software. However, the companion sewer modeling software is no longer commercially available, and it is useful to have the water and sewer models provided by the same company and with a common user interface. Therefore, in this project, a hydraulic model of the City's water system was developed and calibrated using the Aquanuity Water software that is very similar to the Infowater software. The model was created from the City's GIS data and facilities information provided by the City. The hydraulic model was used to evaluate the existing and future capacity of the water distribution system, to identify system deficiencies and CIP to address the system deficiencies.

4.3.1 Water Demand Allocation

Water demands were calculated based on customer billing data that was geocoded to the property parcel, and land use data based on zoning information. Demands were set to align with water production data, including non-revenue water. Demands were allocated spatially to the nearest node in the model.

4.4 Hydraulic Model Calibration

Hydraulic model calibration is a crucial component of the hydraulic modeling effort because it is used to validate model accuracy and to establish a level of confidence in the model. Once the model was developed, field testing was performed to collect pressure data to calibrate the model. Calibrating the model improves the accuracy of the model in predicting system performance, which is used to identify system deficiencies, and improvement recommendations to address identified deficiencies. This section summarizes the overall methodology employed to calibrate the City's water distribution system hydraulic model and the calibration results.

4.4.1 Pressure Monitoring Field Test

A pressure monitoring field test was performed from August 29, 2023, to September 12, 2023. Pressure data was collected in 15-minute intervals at 17 locations throughout the City's water distribution system. These locations shown in Figure 4.5 were chosen through collaboration between the City and Carollo to obtain pressure data near booster pump station discharges and at vital points of the system (such as high elevation areas, areas where the City has noted pressure issues in the past, and areas in residential developments that do not have any nearby pump stations).

Supervisory control and data acquisition (SCADA) data from 7 pump stations for the same time period were also provided by the City. The pressure monitoring and SCADA data are essential for multiple reasons. First, the data provides accurate insight into the typical operating pressures and hydraulic grade lines (HGL) in each pressure zone. The HGLs of different test locations within a pressure zone should align relatively closely and can be used as an indicator of reliable test data. Second, the water distribution system hydraulic model can be calibrated so that pressure results in the model match those observed in the field test. Figure 4.6, Figure 4.7, and Figure 4.8 show the HGLs from the pressure monitoring field test and SCADA data in the City's three pressure zones. One observation from the field test results is that the pressures do not drop significantly during peak demand hours of the day, This is an indication that the water distribution system does not appear to be stressed while delivering peak demands. At any given time the head loss across the distribution system is about 20 feet, which is relatively small, except for Zone 2 South, which is small and not well networked.

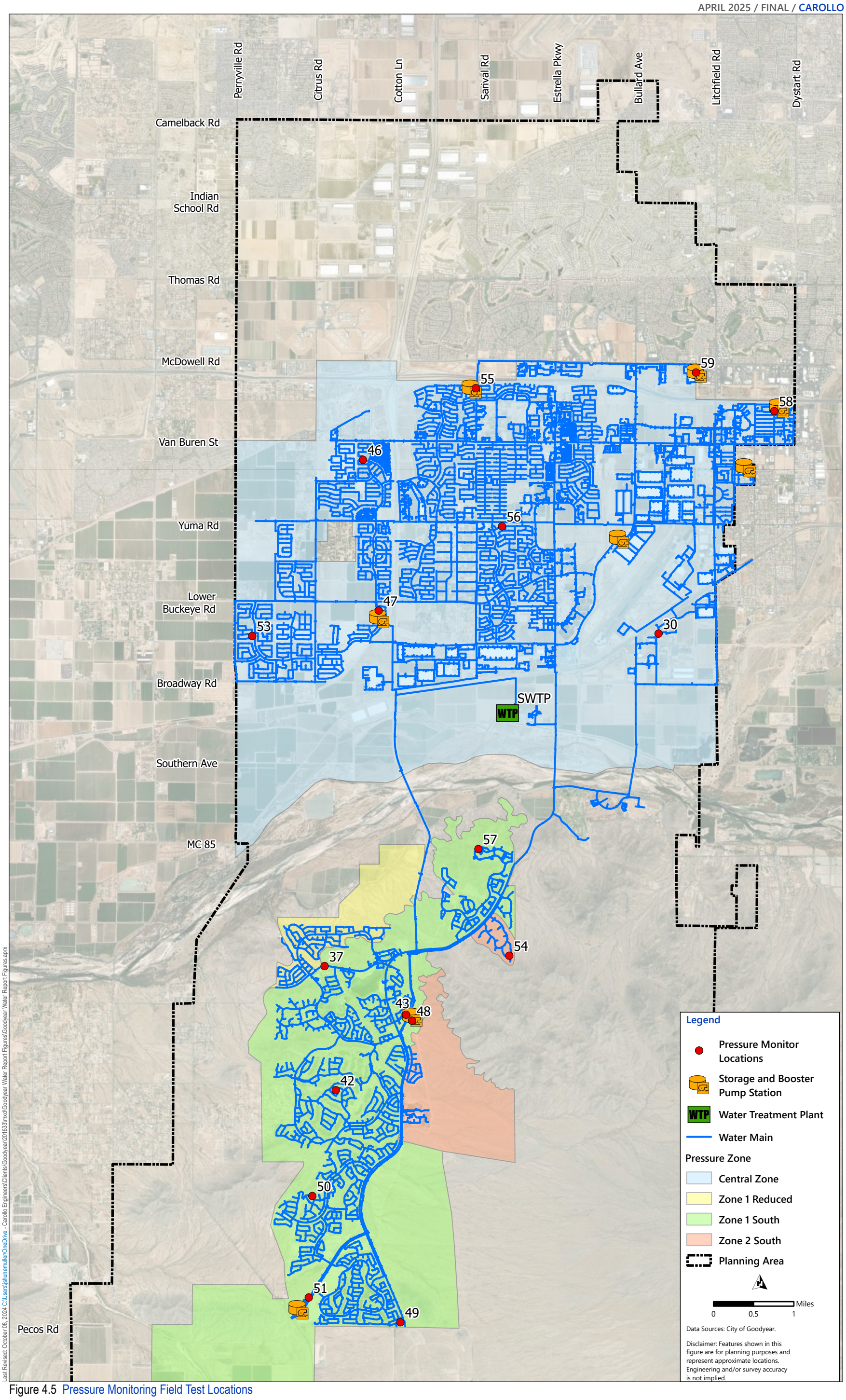


Figure 4.5 Pressure Monitoring Field Test Locations

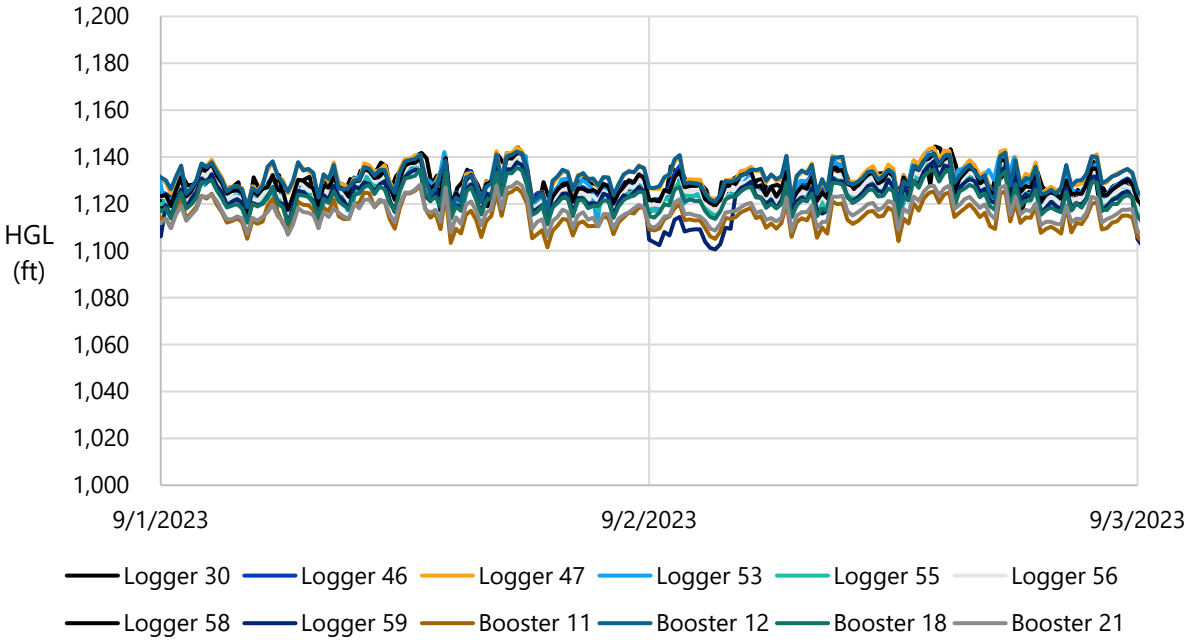


Figure 4.6 Central Zone Field Test and SCADA Data Hydraulic Grade Lines

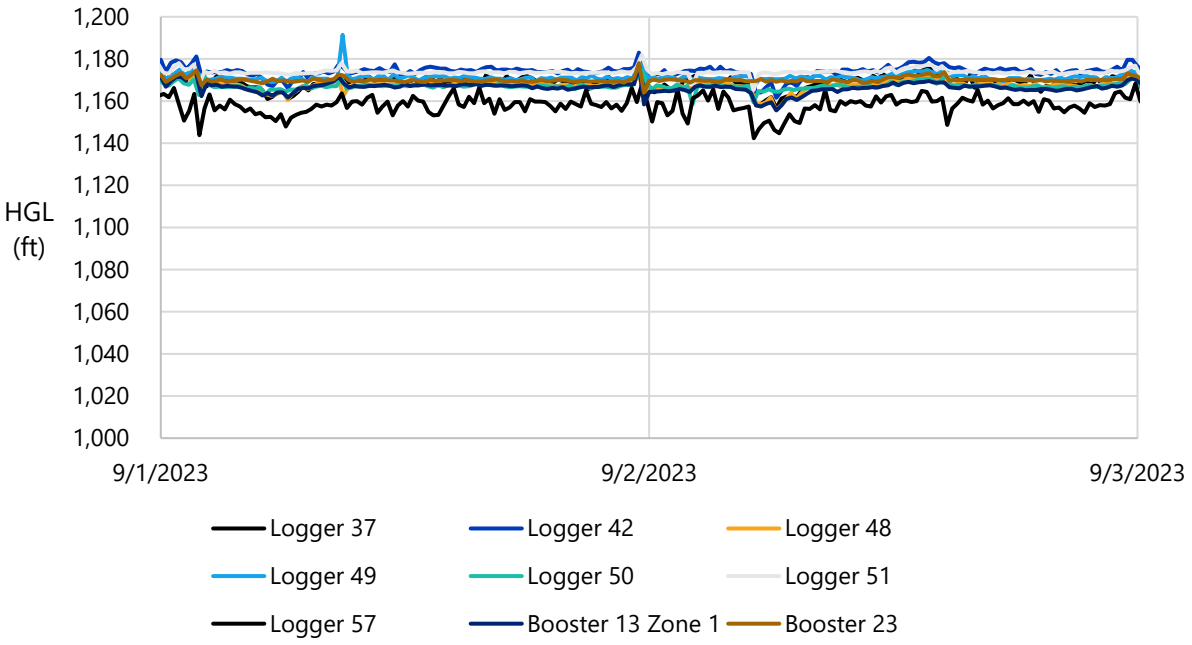


Figure 4.7 South Zone 1 Field Test and SCADA Data Hydraulic Grade Lines

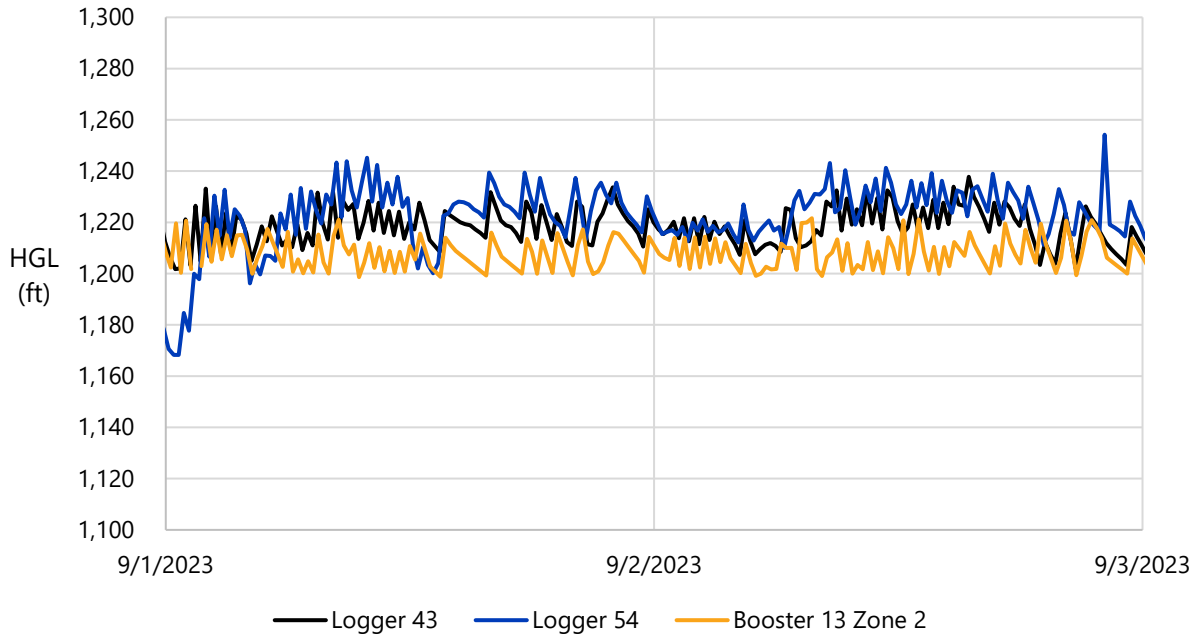


Figure 4.8 South Zone 2 Field Test and SCADA Data Hydraulic Grade Lines

Calibrating the model pressure results is performed by adjusting pump discharge pressure settings, adjusting pipe roughness factors, and verifying the accuracy of model facility data (such as pipe diameters and junction elevations). Because the pressure monitors used in the field test have a margin of error of +/- 1 pounds per square inch (psi), a calibrated model pressure that is within 5 percent of the field test pressure is determined to be sufficiently accurate. Table 4.7 summarizes the pressure monitoring and model calibration results which are less than +/- 5 percent.

Table 4.7 Pressure Monitoring Field Test and Model Calibration Results

Pressure Monitor Number	Average Field Data Pressure (psi)	Model Pressure (psi)	Percent Difference
30	70.7	68.1	3.7%
37	98.3	96.7	1.6%
42	74.7	71.3	4.5%
43	83.6	82.3	1.5%
46	58.5	56.4	3.6%
47	81.5	79.5	2.4%
48	57.1	56.7	0.8%
49	46.3	45.6	1.6%
50	41.8	42.6	-1.9%
51	69.5	67.8	2.4%
53	84.2	81.8	2.9%
54	54.9	56.4	-2.7%
55	52.6	50.0	4.9%
56	64.4	62.8	2.6%
57	79.3	82.9	-4.5%
58	59.1	56.6	4.2%
59	55.8	54.1	3.1%

4.5 Water Distribution System Performance Criteria

Performance criteria are the standards of measurement used to evaluate the adequacy of water distribution system infrastructure. Performance criteria are based on legal requirements and engineering best practices.

4.5.1 Overview

Performance criteria address water supply redundancy, water system reliability, and system operational requirements. Performance criteria are more general than design criteria, which provide specific requirements that must be incorporated into new infrastructure.

Performance criteria are based on legal requirements and engineering best practices. According to the Arizona Administrative Code (A.A.C.), public water systems shall be designed using good engineering practice (R-18-5-502). The water system performance criteria for the IWMP include standards from the A.A.C., Engineering Bulletin No. 10 (issued by the Arizona Department of Health Services, May 1978), water industry best practices, and performance criteria established in the City's previous Integrated Water Master Plans. These "standards of measurement" are considered good engineering practice and provide the City acceptable levels of water system performance and reliability.

4.5.1.1 Water Supply Redundancy

Water supply redundancy refers to the degree to which water can still be supplied to the City if one or more of the water supply sources is unavailable. Decisions concerning the extent of redundancy are often policy decisions influenced by the price a utility is willing to pay for the redundancy compared with the risk of having to implement water use restrictions or provide a lower level of service to the customer. Under some conditions, it may be more economical for the City to implement water use restrictions than to build infrastructure that will be used only on infrequent occasions when a particular water source may be unavailable. Water supply redundancy needs depend on the unique water supplies of each city. Most communities in central Arizona that rely on surface water seek to provide redundant or backup water supplies for outages of canals that deliver SRP or CAP water supplies under average day demand conditions. For communities that rely on groundwater, holding one or more production wells in reserve (firm capacity) is a common way to provide water supply redundancy.

4.5.1.2 Water System Reliability

The City's water system reliability is dependent on the reliability of all the components within the system as well as the reliability of support systems and services outside of the City's control (Adaman wells and power supply). The level of reliability provided is usually based on historic operational experience and judgment, which results in confidence that the system can deliver water under a variety of normal and emergency conditions. Consequently, professional judgment must be used when specifying system components and the number and location of components needed to meet reliability criteria.

The level of reliability provided by the system is a function of the reliability of the major system components:

- Raw water sources.
- Treatment processes and/or facilities.
- Major transmission mains.
- Power sources.
- Booster stations.
- Storage tanks.

Reliability of the City's water system is provided by a combination of the following factors:

- Sufficient groundwater production to meet maximum-day demand.
- Reserve system storage to meet emergency conditions, in addition to fire and normal operational needs.
- Transmission capability to deliver water to the distribution system.
- Looped transmission and distribution system network to provide multiple pathways for water to reach customers.
- Sufficient booster pumping capabilities with a pump station or the largest pump in a station out of service.

4.5.1.3 Water System Operational Requirements

Water system operational requirements refer to the level of service provided by a utility to the customer. Levels of service include many parameters, such as minimum and maximum pressures, maximum flow velocities, storage, redundancy, and provisions for emergency conditions. Adequate pressure is usually defined in terms of a minimum pressure under certain demand conditions, such as peak hour or fire flow. Adequate fire protection refers to providing adequate storage volume and flow to meet firefighting demands. The water system is adequate when system demand conditions are satisfied while meeting system performance criteria, such as system pressure, velocity, and head loss.

4.5.2 Water Production Facilities

Production facilities for the water system should have sufficient capacity to meet the demands of the maximum day of the year. For systems served with groundwater wells, it is standard practice to evaluate production capabilities based on "firm" capacity, or the capacity with the largest well out of service in each pressure zone.

For Goodyear, the largest production well is Well 24. However, treated water from Well 22 is blended with water from the City's second largest well, Well 20 to meet water quality requirements. Because of this, when Well 22 is removed from service, Well 20 cannot be used. Therefore, Goodyear's "firm" capacity results in Wells 20 and 22 being removed from service instead of Well 24.

4.5.3 Fire Flow

The City of Goodyear's Fire Department has adopted the 2006 International Fire Code (IFC 2006) as documented in Chapter 5 of Goodyear's City Code. Depending on the type of use, construction, fire area, the required fire flow and duration ranges from 1,500 gpm for 2 hours to 8,000 gpm for 4 hours as shown in IFC 2006 Appendix B, Table B105.1. The IFC 2006 allows reductions in fire flow requirements for structures with approved automatic sprinkler systems and installation practices, which can be granted at the discretion of Goodyear's Fire Marshall.

For the purposes of the water system master plan system evaluations and future system planning, master planning fire flow requirements were developed that are general and based on land use. For single-family residential land uses the master planning fire flow requirement is 1,500 gpm for 2 hours. For commercial and industrial land uses the master planning fire flow requirement is 3,500 gpm for 4 hours.

The actual fire flow requirements for future, individual structures shall be determined in accordance with the IFC 2006 (or the City's currently adopted standard) as documented in the Goodyear City Code.

It is assumed that a major fire will not occur during the peak hour demand condition since the chance of this happening is minimal. Rather, it is more likely that a fire could occur under maximum day demand conditions. Therefore, in the system evaluations, fire demand will be applied under maximum day demand conditions.

4.5.4 Pump Stations

Usually pumping stations are the most critical components in a distribution system with respect to meeting reliability/redundancy criteria, because these facilities are subject to disruption by the following conditions:

- Power outage.
- Mechanical failure.
- Line breaks.
- Table 4.8 summarizes these conditions and the criteria to be employed for reliability in this master plan update.

Table 4.8 Pump Station Reliability Criteria

Condition	Result	Mitigating Criteria
Power Outage	Creates loss of pumping capacity at one or more pumping facilities.	Provide emergency backup power supply generation or dual power feed to critical facilities.
Mechanical Failure	Creates loss of pumping capacity due to one or more pumps at a facility being out of service.	Provide sufficient pumping capacity at each booster pumping station to meet maximum day demands with any one pump or the largest pump out of service (referred to as "firm capacity" of the station). This allows for pumps to be out of service due to mechanical failure or unscheduled maintenance.
Line Break	Occurs at or near the booster station, creating a loss of all or a portion of the pumping capacity at the facility.	A line break at or near a booster station disrupting supply is usually mitigated through multiple pumping facilities, storage, and pressure reducing valves (PRV) facilities (where available).

For line breaks affecting critical pumping facilities, reliability/redundancy criteria are established so that average day demand conditions can be met for each pressure zone.

A pump station pumping to a closed system, with no other water sources or elevated storage, should be sized for the larger of peak hour demand or maximum day plus fire flow demand. Diurnal demands (peak hour) and fire demands will be met from ground storage, and the booster stations will need to be able to pump this flow from the reservoirs. Pump stations should be designed based on the capacity that can be consistently provided with the largest pump out of service (firm capacity). In addition, pump stations that deliver water into higher pressure zones must be sized to meet the demands of both zones, the parent and subordinate zones.

The following summarizes pump station criteria:

- When pumping to a closed system, the capacity equals the larger of 120 percent of peak hour demand or maximum day plus fire flow demand.
- The allowance for reliability and uncertainties in demand projections equals 10 percent of the station's firm capacity.
- Pump stations should be sized to meet demands with the largest pump out of service (firm capacity).
- When multiple booster stations supply a zone, average annual water demands should be supplied with the largest booster station out of service.

The firm capacity of booster stations that pump from reservoirs is often set so that half of the reservoir can be emptied in a six-hour period.

4.5.5 Transmission/Distribution Mains

Water system piping serves three basic purposes:

- To transfer water from the source of production to storage.
- To distribute water from the source of storage to the consumer.
- To provide a conduit to supply firefighting water.

Transmission and distribution mains are sized for the greater of the following two demand conditions:

- Maximum day demand plus fire flow.
- 120 percent of Peak hour demand.

The following pressure criteria are recommended to assess the adequacy of the water transmission/distribution system under the two demand conditions:

- **Peak Hour Demand –** Pressures must be greater than 40 psi and less than or equal to 80 psi. Criteria are established to account for distribution system and backflow prevention facility head loss to achieve a minimum service pressure of 40 psi.
- **Maximum Day Demand plus Fire Flow Condition –** A minimum of 20 psi at the point of maximum fire draft.

The water velocity criteria under maximum day demand conditions are as follows:

- Velocity ≤ 5 feet per second (ft/sec) for pipes < 36 inches diameter.
- Velocity ≤ 6 ft/sec for pipes ≥ 36 inches diameter.

The water velocity criteria under peak hour demand condition is as follows:

- Velocity ≤ 7 ft/sec.

The water velocity criteria under fire demand condition is as follows:

- Velocity ≤ 10 ft/sec.

4.5.6 Storage Facilities

Since production facilities are typically designed to operate at a steady rate over an extended period, storage reservoirs are planned to accommodate fluctuating demands. The factors included in designing reservoir capacity are diurnal demand fluctuations, fire demand, and emergency reserve storage. In some situations, it may be prudent to have an additional storage volume to provide operational storage. Storage facilities should be designed and operated to meet these conditions, while achieving storage turnover to minimize water quality degradation.

The City's current water storage capacity standard is to provide an amount equal to the average daily demand during the peak month of the year (maximum month conditions), which is outlined in A.A.C. R18-5-503A. In some cases, such as developing areas, this storage criteria is overly conservative, so a storage criteria of one day of the annual average demand is also used in developing areas.

The City's water system now incorporates a blend of groundwater and surface water. The City needs to be aware of the age of water stored in reservoirs and the potential to form disinfection by-products due to the organic compounds found in surface water. Storage will need to be managed in a way to maintain adequate supplies to meet demands and maintain adequate water quality. An adjustment in the City's storage performance criteria may be warranted due to these recent changes.

4.5.7 Development Factors Affecting Performance Criteria

The previously discussed performance criteria apply to pressure zones that have achieved growth generally greater than 50 percent of the expected build out population, with well-developed infrastructure including looped pipelines and a significant percentage of storage and booster pumping facilities in place.

In growth-oriented communities where new pressure zones are being established and proposed developments are located long distances from existing services, the initial population is low and new infrastructure does not usually achieve the criteria recommended for mature pressure zones while in the early stages of development. This is often referred to as "Satellite" development, where stand-alone water supply and delivery infrastructure must be used initially to serve customers until connections can be made to the City's system. These conditions typically occur for the following types of growth/development:

1. Growth in a new pressure zone that is not yet connected to the City's system.
2. Growth in an existing or new pressure zone that is connected to the City's system by a single feed or "umbilical cord" type infrastructure.

Under these growth and development conditions, water usage patterns can vary significantly from patterns observed in mature pressure zones and can greatly affect peaking factors and required storage and booster pumping. The peaking factors for the City's existing pressure zones were based on the previous master plan. When the City's SCADA system is fully operational, data will be available to more precisely calculate peaking factors.

- MD/Average Day (AD) = 1.7.
- Peak Hour (PH)/MD = 1.7.
- PH/AD = 2.89.

For new growth areas or "Satellite" developments, it is not uncommon to experience peaking factors that exceed these values. A typical PH/MD factor for these conditions would be 2.5, or PH/AD factor of 4.0 or higher. The reasons for the higher peaking factor include:

1. A significantly greater proportionate share of construction water use compared to normal per capita usage during the early stages of new development. High construction water usage typically occurs at the same time of peak daily per capita water demand.
2. The character that a satellite development displays is much like a "bedroom" community, where the resident's water use patterns are all similar and are not buffered by other types of non-residential and commercial water use.

Fire flow demands also affect the requirements for booster pumping and storage capacity. Typically for new, small developments, the MD plus fire flow demand condition will control the sizing of booster pumping and storage facilities. While for development in mature pressure zones, the PH demand condition will usually control the sizing of booster pumping and storage facilities.

Therefore, considering these development factors, the performance criteria may be modified at the discretion of the City to account for satellite growth conditions.

4.5.8 Performance Criteria Summary

Table 4.9 summarizes the performance criteria used to evaluate the distribution system. Note Table 4.7 does not include all the performance and design criteria listed above, but just the criteria that was used to evaluate the performance of the existing and proposed distribution system.

Table 4.9 City's Performance Criteria Summary

Description	Criteria
Demand and Production Criteria	
Peaking Factors(1)	
MD/AD	1.7
PH/AD	2.89
Production(2)	Supply Maximum Day Demand
Storage Criteria(3)	Equal to the average daily demand during the maximum demand month of the year. Where appropriate, the daily average annual demand is also used.
Transmission/Distribution	
Velocity Criteria	
Maximum Day	
Pipe < 36 inches	<5 ft/sec
Pipe ≥ 36 inches	<6 ft/sec
Peak Hour	≤7 ft/sec
Fire Flow Condition	<10 ft/sec, <20 psi
System Pressure Criteria (SPC)	40 psi ≤ SPC ≤ 80 psi
Size Criteria (Minimum Diameter, inches)	
Section Lines/Major Arterial	16
Minor Arterials	12
All Other Lines	8
Booster Pump Station Criteria	
Without Elevated Storage(4)	The larger of 120 percent of Peak Hour Demand or Maximum Day plus Fire Flow of 3,500 gpm.
Firm Capacity(5)	Capacity with the largest pump out of service.
Fire Demand Criteria	
Master Planning Fire Flow Requirements(6)	Residential = 1,500 gpm for 2 hours
	Commercial/Industrial/Schools = 3,500 gpm for 4 hours

Notes:
(1) Peaking factors are estimates taken from the 2007 Integrated Water Master Plan. These peaking factors are typical of similarly sized communities in Arizona. Without a SCADA system, it is difficult to precisely measure peaking factors.
(2) Per industry best practices, production requirements should be met with largest well out of service (Mays, Larry W. Water Distribution Systems Handbook. McGraw Hill, 2000, pp 3.7. For Goodyear, the largest well (Well 22) is required to use Well 20 (blending); therefore, firm capacity results in the two largest wells being out of service.
(3) Arizona Administrative Code: A.A.C. R18-5-503A.
(4) 2007 Integrated Water Master Plan criteria & industry best practice.
(5) Engineering Bulletin No. 10, Chapter 3, Section C(1).
(6) Master Planning Fire Flow Requirements are general and applied for system planning purposes. The 2018 edition of the International Fire Code allows reductions in fire flow requirements for structures with approved automatic sprinkler systems and installation practices, which can be granted at the discretion of the City Fire Marshall.

4.6 Future Infrastructure

This section defines the improvements planned for the water distribution system by planning period (2030, 2035, 2040). As the City continues to grow, proposed water supply, storage, pumping, and pipelines have been sized for 2040 demand conditions. The infrastructure generally aligns with the City's planning periods. For this master plan, WPA 2 is expected to be fully developed by 2040. WPA 3 will experience significant growth but will not reach buildout. WPA 4 will start developing. WPA 5 may be served by a private utility and does not include improvements in this plan. The infrastructure identified for each planning period was the evaluated for capacity requirements using the hydraulic model.

4.6.1 2030 Planning Period

The new facilities proposed for the 2030 planning period include new water mains, a new storage tank, a well replacement, and SWTP expansion. Figure 4.9 shows the proposed 2030 facilities. Most of the proposed new water mains are needed due to new development areas and therefore will be funded by developers. The rest will be funded by the City.

The 2030 facilities funded by the City are summarized as:

- **W-7.1 –** A 12-inch transmission main on Broadway Rd From Estrella Pkwy to Bullard Ave. This new main will improve the City's transmission capabilities from the SWTP to the data center sites on Broadway Rd and complete a loop over to Litchfield Rd.
- **W-28 –** Expansion of the SWTP's treatment capacity from 6.5 mgd to 16 mgd. Addition of 4 MG storage capacity to the SWTP.
- **W-31 –** Replacement of Well 18B. According to the City, all equipment is already in place but the well needs to be re-drilled.
- **W-36 –** A 24-inch transmission main from the MC85 north of the SWTP to the MC85 and Estrella Pkwy. This new main will improve transmission capabilities from the SWTP to the eastern Central Planning Area.
- **W-37 –** A section of 16-inch main along Litchfield Road from MC85 south to El Cielo Road to complete the 16-inch diameter equivalent loop serving the Microsoft site.
- **W-41 –** A new 1.5 MG storage tank at Site 18. This new storage is required to offset the loss of storage capacity due to the retirement of Sites 7 and 8.

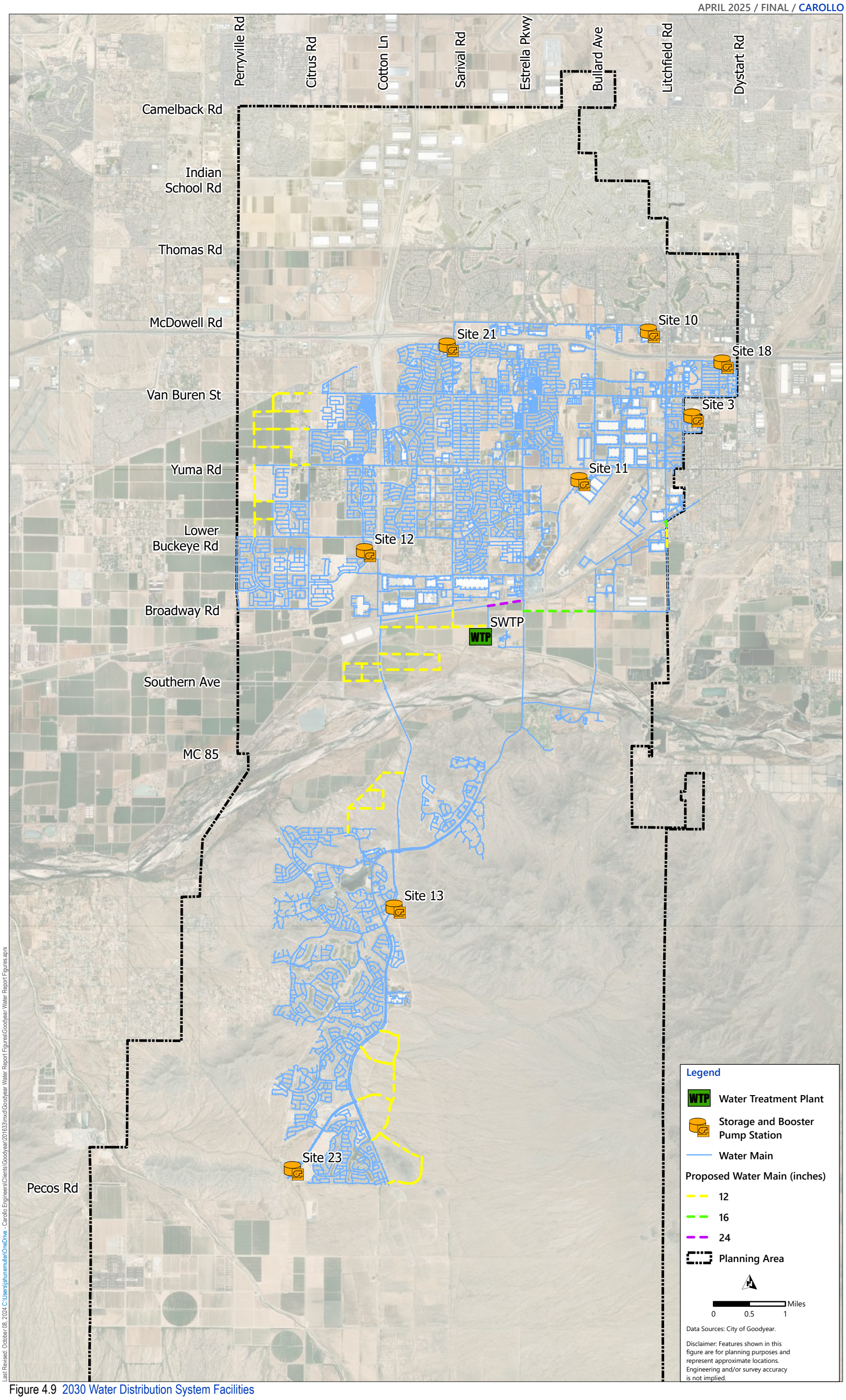


Figure 4.9 2030 Water Distribution System Facilities

4.6.2 2035 Planning Period

The new facilities proposed for the 2035 planning period include new water mains, new pressure reducing valves, well water treatment, a new well, storage, and booster pump station. Figure 4.10 shows the proposed 2030 facilities. The proposed City-funded projects are summarized in the list below:

- **W-21 –** The West Goodyear Storage and Booster Pump Station. This station will have two 1.5 MG storage tanks and 5.75 mgd pumping capacity. This station will serve Central Zone 2 and will receive water from the Central Zone 1. This site is also proposed to have a well with 1,500 gpm of capacity
- **W-21.3 –** A 24-inch transmission main from Citrus Rd and Harrison St. to Van Buren St and 175th Dr. This new water main will improve the City's transmission capabilities to northern and western areas of the Central Zone.
- **W-21.4 –** A 24-inch water main from Citrus Rd and Yuma Rd to Yuma Rd and 175th Dr. This new water main will improve the City's transmission capabilities to northern and western areas of the Central Zone.
- **W-22, 23, 24, 25, 26, 27, 38, 39 –** Eight PRVs primarily located along Yuma Rd from west of Cotton Ln to Litchfield Rd. to split the Central Zone into Central Zone 1 and Central Zone 2 pressure zones. The sizing and locations of these PRVs can be found in Section 4.2.1.
- **W-32 –** Ion exchange treatment for water from the Adaman wells. This treatment will be located at Site 21 and remove nitrate and is sized to treat half of the total combined capacity of the three Adaman wells.
- **W-33 –** A 24-inch transmission main from Citrus Rd and Broadway Rd to Cotton Ln and South of MC 85. This new water main will improve the City's transmission capabilities from the SWTP to the western Central Zone.
- **W-35 –** Upsizing 3,500 feet of pipe on the Cotton Lane pipeline to Site 13 from the Central Zone. Most of this pipeline is currently 20 inches in diameter but has smaller diameter pipes interspersed throughout the pipeline. These smaller diameter pipes are bottlenecks that cause head loss and high velocities in the pipeline. These issues will become worse over time as future developments in Estrella require higher water deliveries to Site 13.
- **W-42 –** Groundwater treatment to remove PFAS from Wells 6, 18 and 18B. 2040 Planning Period

The new facilities proposed for the 2040 planning period include new water mains, one storage tank and booster pump station, and one expansion of an existing pump station. Figure 4.11 shows the proposed 2040 facilities. The Waterman Storage and Booster Pump Station is expected to be developer paid. Most of proposed water mains in this phase are also expected to be developer-funded. The proposed City-funded projects are summarized in the list below:

- **W-30 –** Expansion of the Site 13 (Zone 2) Pump Station. This expansion is required to meet fire flow requirements in the South Zone 2 pressure zone.
- **W-34 –** A 16-inch transmission main from Site 12 to Cotton Lane and the MC 85. This main will run parallel to an existing 16-inch main to give the equivalent transmission capacity to a 24-inch main. This main will improve the City's transmission capacity between the SWTP and Site 12.

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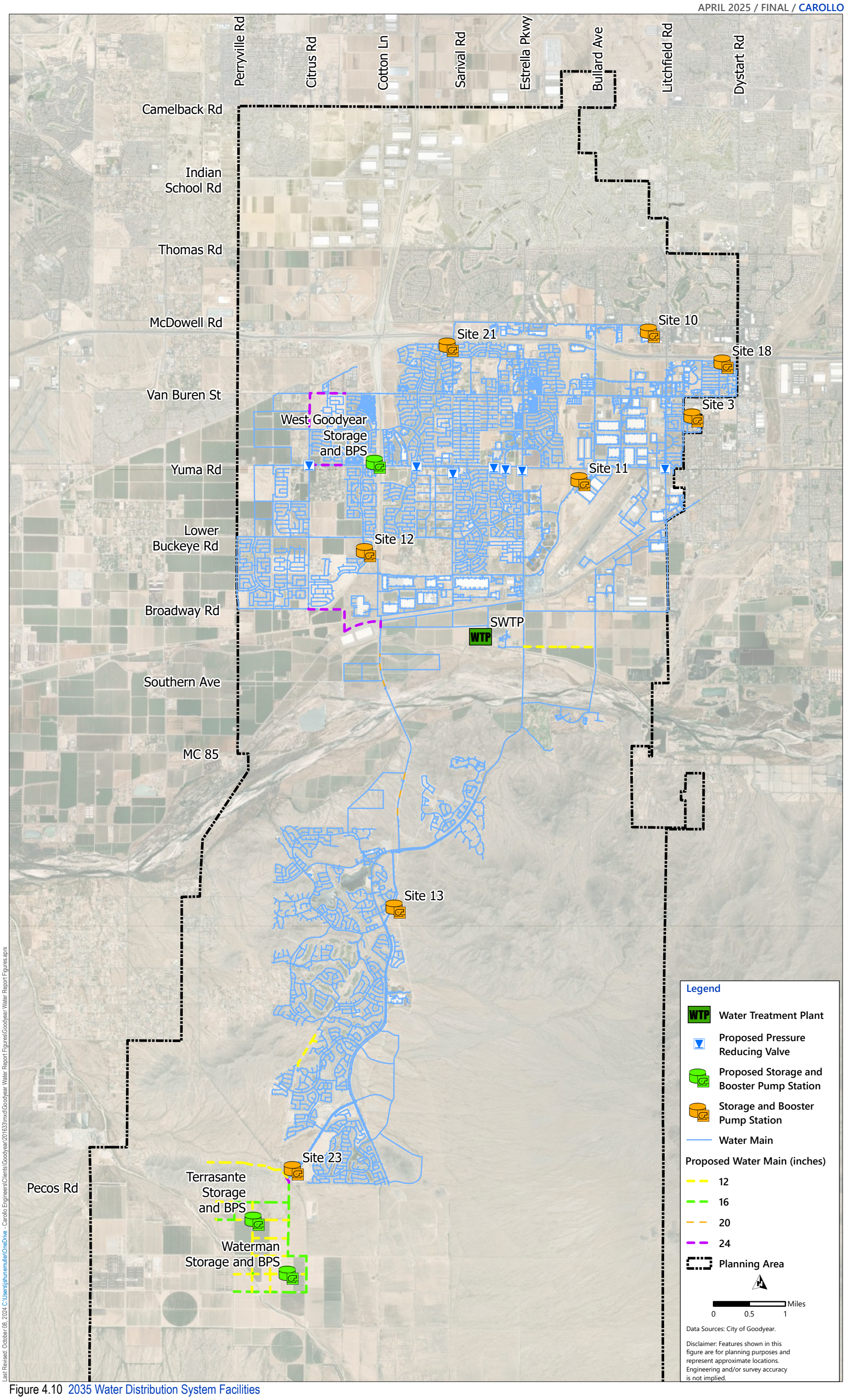


Figure 4.10 2035 Water Distribution System Facilities

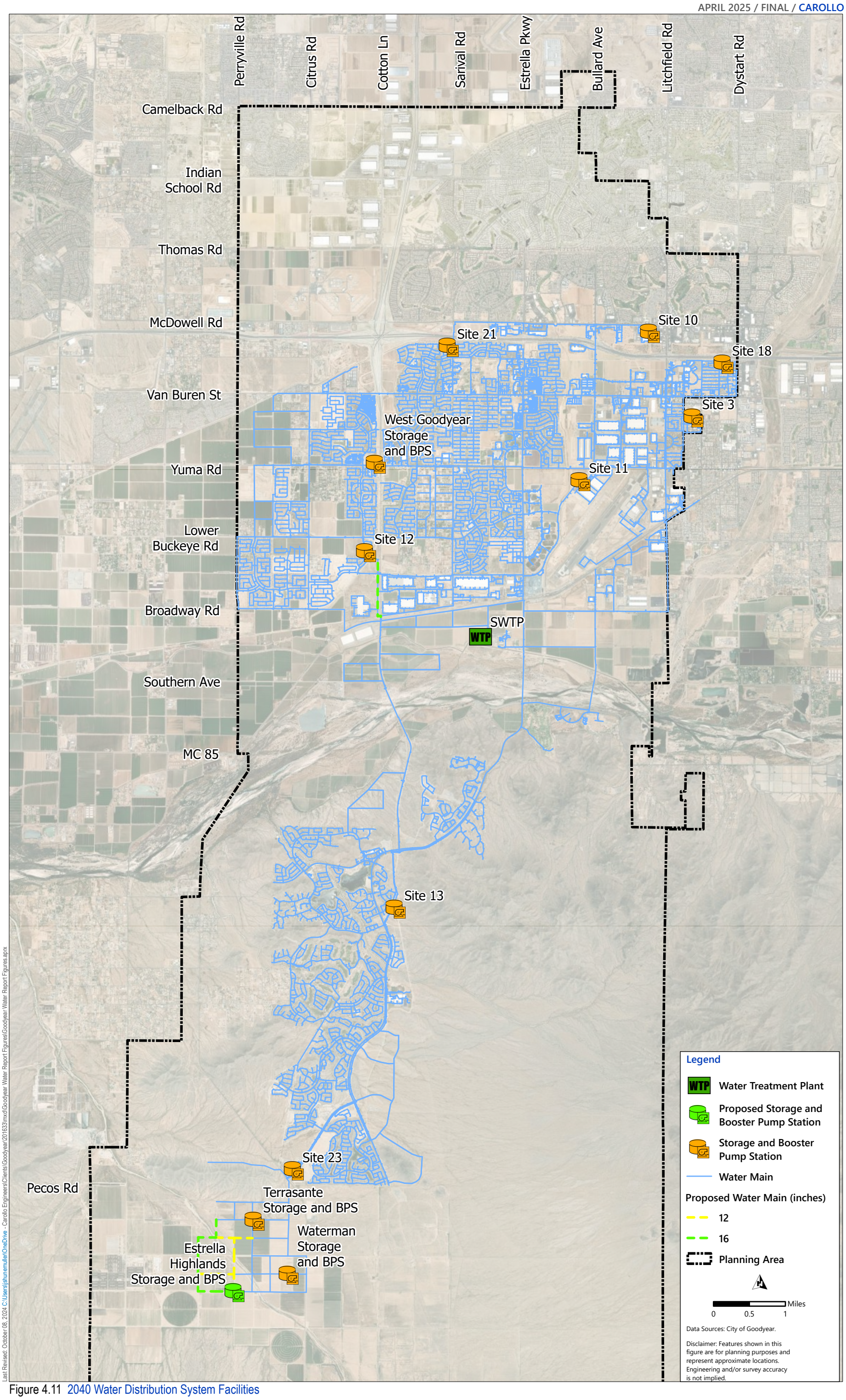


Figure 4.11 2040 Water Distribution System Facilities

4.7 Water Distribution System Evaluations

The water distribution system and planned infrastructure was evaluated to identify deficiencies under existing system conditions and year 2040 planning horizon conditions. The water system was evaluated to identify any deficiencies in performance, as well as issues that restrict effective water system operation.

4.7.1 Future Demand Projection Summary

The infrastructure to be added in each future planning period is intended to serve the demands that are projected to occur in the future. Chapter 2 of this report details shows the projected future water demands. The demand projections in Chapter 2 are based on a 15-year planning period to align with the MDAWS application (2030, 2035, 2040). Table 4.10, Table 4.11, and Table 4.12 summarize the total projected water demands in each pressure zone after pressure zone changes. These demand projections will be used for the infrastructure planning periods (2030, 2035, and 2040).

Table 4.10 Projected Average Day Demands by Pressure Zone (mgd)

Zone	2023	2030	2035	2040
Central Zone	7.0	-	-	-
Central Zone 1	-	3.8	4.0	4.1
Central Zone 2	-	4	4.4	4.6
Zone 1 South Including Rainbow Valley	2.9	3.9	6	8.7
Zone 2 South	0.2	0.3	0.3	0.4
Total	**10.1**	**12.0**	**14.7**	**17.8**

Table 4.11 Projected Maximum Day Demands by Pressure Zone (mgd) (avg x 1.7)

Zone	2023	2030	2035	2040
Central Zone	12.0	-	-	-
Central Zone 1	-	6.5	6.8	7.0
Central Zone 2	-	6.8	7.5	7.8
Zone 1 South	4.93	6.6	10.2	14.8
Zone 2 South	0.34	0.5	0.5	0.7
Total	**17.2**	**20.5**	**25.0**	**30.3**

Table 4.12 Projected Peak Hour Demands by Pressure Zone (mgd) (avg x 2.9)

Zone	2023	2030	2035	2040
Central Zone	20.4	-	-	-
Central Zone 1	-	11.1	11.6	11.9
Central Zone 2	-	11.6	12.8	13.3
Zone 1 South	8.4	11.3	17.4	25.2
Zone 2 South	0.6	0.9	0.9	1.2
Total	**29.4**	**34.9**	**42.6**	**51.6**

4.7.2 Water Supply Capacity Evaluation

The City's future water supply requirements were estimated based on projected demands. Design criteria require that the City's redundant water supply facilities (largest well offline) exceed the maximum day demand. Table 4.13 contains an evaluation of the City's projected water supply facilities for each planning period without a Central Zone split, indicating that three new water supply sources are required to meet the supply requirements for future planning years. An expansion of the SWTP has already been planned to double the supply capacity of the plant. The expansion is planned for the 2030 planning period. The other two proposed supply sources are three new wells to be located in the Terrasante, Rainbow Valley, and Estrella Highlands developments. These wells will provide water to the new developments that are also located in Zone 1 South. These developments will also be able to take water from Site 23.

Table 4.13 Water Supply Capacity Evaluation

Well/Plant	Total Capacity (gpm)	Reliable Production (gpm)			
		2023	2030	2035	2040
Well 1	500	500	0	0	0
Well 3	425	425	0	0	0
Well 6	485	0	500	500	500
Well 11	620	620	620	620	620
Well 12	850	850	900	900	900
Well 18A	850	0	850	850	850
Well 18B(1)	0	0	850	850	850
Well 19	750	750	750	750	750
Well 20(3)	1,600	0	0	0	0
Well 22(3)	1,950	1950	0	0	0
Well 24	2,300	2,300	2,300	2,300	2,300
Well 26	1,900	1,900	1,900	1,900	1,900
Adaman Well 1	1,340	1,340	1,340	1,340	1,340
Adaman Well 2	500	500	500	500	500
Adaman Well 3(2)	1,200	0	1,200	1,200	1,200
SWTP (Existing)	5,250	4,500	4,500	4,500	4,500
SWTP (Expansion)	5,250	0	6,000	6,000	6,000
West Goodyear Well	1,500	0	1,500	1,500	1,500
Terrasante Well	1,500	0	1,500	1,500	1,500
Waterman Well	1,500	0	0	1,500	1,500
Estrella Highlands Well	1,500	0	0	0	1,500
Firm Supply	–	**15,635**	**25,210**	**26,710**	**28,210**
Maximum Daily Required Production	–	**14,544**	**16,968**	**20,341**	**24,240**
Surplus/(Deficit)	–	**1,091**	**8,242**	**6,369**	**3,970**

Notes:
(1) Well 18B failed and needs replacement. Estimated replaced capacity is 850 gpm. Well 18A and Well 6 cannot operate without blending from Well 18B.
(2) Adaman Well 3 currently offline, assumed online in future.
(3) Well 22 taken offline for redundancy. Well 20 taken offline as it is blended with Well 22.

In Table 4.13, several wells are shown as offline for calculating the total firm capacity for each planning period. Well 18B has failed and will need to be replaced to contribute to the City's total water supply capacity. Wells 6 and 18A cannot operate without Well 18B due to blending requirements and the nitrate treatment at the site does not work well. Well 18B is recommended to be back in service by 2030. When calculating the firm water supply capacity, the largest capacity well is assumed to be offline to account for a mechanical failure. Well 24, with a capacity of 2,500 gpm, is the City's largest well. However, due to water quality requirements, water from Well 20 needs to be blended with water from Well 22. Therefore, if Well 22 fails then Well 20 must be taken offline as well. Combined, Wells 20 and 22 have a larger capacity than Well 24 and, therefore these two wells provide the redundancy. Well 22 is kept online in the 2023 calculations due to Wells 6, 18A, 18B, and Adaman 3 being offline. Although there is enough water supply capacity in 2023, there is not sufficient redundancy because the Site 18 wells are off.

Figure 4.12 shows the City's available water supply and projected required water supply in each planning phase. As in Table 4.13, this chart assumes Wells 20 and 22 are offline for redundancy. Adaman Well 3, which is currently offline but planned to be online by 2030. Well 18B is considered offline until 2035. Figure 4.12 is helpful in assessing the timeline for when the SWTP expansion will be necessary to meet the City's water supply requirements. The SWTP expansion should be completed in the 2030 planning period to provide the supply and operational flexibility to serve the City.

Well 12 is in poor condition and will need to be rehabilitated or re-drilled. The timing of this rehabilitation will need to be considered along with the development of additional water supplies to make sure that the City has adequate water production capabilities.

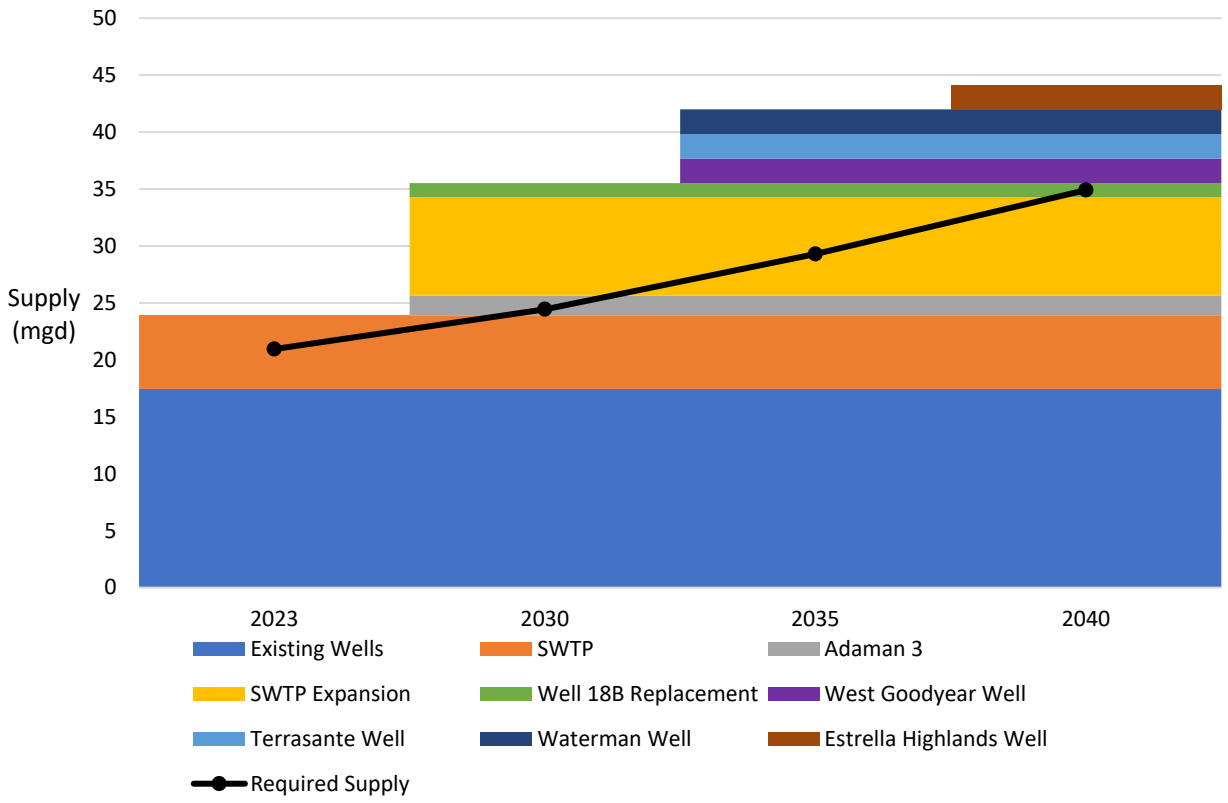


Figure 4.12 Water Supplies Needed to Deliver Maximum Day Demands

4.7.2.1 Groundwater Treatment

Multiple ground water supply sites, both existing and proposed future sites, were identified as likely needing treatment for arsenic or polyfluoroalkyl substances (PFAS). The identified sites and the required treatments are detailed below:

- **Site 18 –** City has expressed concerns about rising arsenic and PFAS levels at Site 18. Therefore, the City should plan to add a treatment process that will treat both arsenic and PFAS at Site 18.
- **Site 21 –** Nitrate removal via ion exchange treatment will be needed to treat water from Adaman Wells 1, 2, and 3. Currently Adaman Well 3 is not equipped and operating but once all three wells are producing, increased nitrate treatment capacity will be required. An ion exchange treatment capacity of 2.25 mgd would treat half of the water produced by the Adaman wells when all three wells are producing at their full capacity. Arsenic treatment has already been expanded at Site 21 to treat water from the Adaman wells.
- **West Goodyear Well (Proposed) –** Treatment to reduce arsenic levels is anticipated at this site.
- **Rainbow Valley Developments (Proposed Terrasante, Estrella Highlands, and Waterman wells) –** Treatment to reduce arsenic levels is anticipated for these sites. These sites are to be constructed by developers.

4.7.3 Storage Capacity Evaluation

The City's design criteria for distribution system storage is documented in Section 4.5.6. Storage facilities can serve one or more pressure zones if water can be conveyed from the storage tank to the pressure zone through adequately sized pump stations.

The storage requirement is the same in the Central Zone whether the zone is configured as one zone or two zones. Table 4.14 presents the storage analysis for the Central Zone(s). The Central Zone is planned to have three new storage facilities, one 4 MG storage tank with the expanded SWTP, the West Goodyear ground storage tank, and 1.5 MG of storage at Site 18 to replace the retired storage from Sites 7 and 8.

The southern zones share storage facilities, so the storage evaluation is completed for the entire southern area as shown in Table 4.15 includes three future ground storage tanks to serve the Terrasante, Rainbow Valley, and Estrella Highlands developments. By placing a storage and pumping facility in each development, one development is not dependent on another development to start growing. Each of these sites will start with a 1 MG storage tank with space for a second storage tank in the future if needed. An additional 1.5 MG storage tank has previously been recommended to be added to Site 13. An additional storage tank would provide operational flexibility but is not required to meet storage requirements.

Table 4.14 Central Zone(s) Water Storage Capacity Evaluation

Tank	Rated Capacity (MG)	Available Capacity (MG)			
		2023	2030	2035	2040
Site 3	0.18	0.16	0.16	0.16	0.16
Site 7	0.75	0.00	0.00	0.00	0.00
Site 8	0.75	0.65	0.00	0.00	0.00
Site 10	0.75	0.67	0.67	0.67	0.67
Site 11	2.00	1.70	1.70	1.70	1.70
Site 12(1)	4.00	3.20	3.20	3.20	3.20
Site 18	1.00	0.80	2.30	2.30	2.30
Site 21	2.00	1.60	1.60	1.60	1.60
SWTP	0.20	0.20	0.20	0.20	0.20
SWTP Expansion	4.00	0.00	4.00	4.00	4.00
Future West Goodyear Ground Storage Tank	2.00	0.00	0.00	2.00	2.00
Total Capacity	**17.63**	**8.98**	**13.83**	**15.83**	**15.83**
Required Capacity		**10.2**	**11.3**	**12.16**	**12.58**
Surplus/Deficit		**-1.22**	**2.53**	**3.67**	**3.25**

Notes:
(1) Total capacity shown includes the volume from two storage tanks at this site.
(2) Required capacity is calculated as the average day demand of the maximum month.

Table 4.15 Southern Pressure Zones Water Storage Capacity Evaluation

Tank	Rated Capacity (MG)	Available Capacity (MG)			
		2023	2030	2035	2040
Site 13	1.5	1.3	1.3	1.3	1.3
Site 23	5.0	4.0	4.0	4.0	4.0
Terrasante Ground Storage Tank	2.0	0.0	1.0	1.0	2.0
Waterman Ground Storage Tank	2.0	0.0	0.0	1.0	2.0
Estrella Highlands Ground Storage Tank	2.0	0.0	0.0	0.0	1.0
Total Storage Capacity	**11.50**	**5.30**	**6.30**	**7.30**	**9.30**
Required Capacity(1)		**3.49**	**4.50**	**6.17**	**8.28**
Surplus/Deficit		**1.81**	**1.80**	**1.13**	**1.02**

Notes:
(1) Required capacity is calculated as the average day demand.

4.7.4 Pumping Capacity Evaluation

The City's design criteria state that pumping capacity is summarized in Section 4.5.4.

The Central Zone and Zone 1 South pumping constraint is 120 percent of the peak hour demand. The Zone 2 South maximum pumping constraint is the total maximum day demand plus fire flow. However, because Zone 2 South is a small zone and comprised almost exclusively of residential areas, the fire flow requirement for South Zone 2 has been set to 1,000 gpm because this flow rate is the limit of the pump station.

The southern pressure zones currently receive the entire water supply from the Central Zone delivering water to Sites 13 and 23. Therefore, pumping capacity in the Central Zone must also be high enough to pump to the southern pressure zones.

Table 4.16, Table 4.17, and Table 4.18 summarize the pumping requirements for each pressure zone when Central Zone is not split.

Table 4.16 shows that the Central Zone would require the SWTP expansion and a West Goodyear Future BPS to meet the projected pumping requirements of future planning periods.

Table 4.16 Central Zone Pumping Requirements without a Pressure Zone Split

Booster Pump Station	Number of Pumps	Capacity or Demand (gpm)					
		Total	Firm	2023	2030	2035	2040
Site 3	2	1,000	500	500	500	500	500
Site 7[2]	3	1,500	1,000	0	0	0	0
Site 8	2	1,000	500	500	0	0	0
Site 10	2	1,000	500	500	500	500	500
Site 11	6	5,600	4,800	4,800	4,800	4,800	4,800
Site 12[3]	6	6,500	6,500	0	0	0	0
Site 18	3	2,800	1,840	1,840	1,840	1,840	1,840
Site 21	5	7,040	5,200	5,200	5,200	5,200	5,200
SWTP (Existing)	4	7,000	5,275	5,275	5,275	5,275	5,275
SWTP (Expansion)	5	10,000	8,000	0	8,000	8,000	8,000
West Goodyear Future BPS	4	5,040	4,200	0	4,200	4,200	4,200
Total Capacity		**44,755**	**38,315**	**18,615**	**29,815**	**29,815**	**29,815**
Required Fire Flow				**3,500**	**3,500**	**3,500**	**3,500**
Required Capacity				**13,508**	**15,922**	**17,790**	**20,115**
Delivery to Zone 1 South				**3,745**	**4,828**	**6,617**	**8,891**
Surplus/Deficit				**1,362**	**9,065**	**5,408**	**809**

Notes:
(1) Required pumping capacity calculated as the maximum of (a) the peak hour demand to the Central Zone or (b) the maximum day demand to the Central Zone plus 3,500 gpm fire flow, plus maximum day demand to the combined southern zones. The peak hour demand controls.
(2) Site 7 is offline and not expected to come back online. Site 8 is expected to be retired by 2030.
(3) Site 12 taken offline for redundancy.

Table 4.17 and Table 4.18 summarize the pumping capacity requirements for the Central Zone 2 and Central Zone 1 if the Central Zone was split.

Table 4.17 shows that a proposed West Goodyear Future booster pump station (BPS) is required to meet pumping requirements starting in 2033. This pump station provides the ability to move water from Central Zone 1 to Central Zone 2 and adds a redundant water supply to Central Zone 2. The required water delivery to the north zone from the south is included in Table 4.18.

Table 4.17 Central Zone 2 Pumping Capacity Evaluation

Booster Pump Station	Number of Pumps	Capacity or Demand (gpm)					
		Total	Firm	2023	2030	2035	2040
Site 3	2	1,000	500	500	500	500	500
Site 10	2	1,000	500	500	500	500	500
Site 18	3	2,800	1,840	1,840	1,840	1,840	1,840
Site 21	5	7,040	5,200	5,200	5,200	5,200	5,200
West Goodyear Future BPS	5	5,040	4,200	0	4,200	4,200	4,200
Total Capacity		**14,340**	**12,240**	**8,040**	**12,240**	**12,240**	**12,240**
Required Fire Flow				**3,500**	**3,500**	**3,500**	**3,500**
Required Capacity				**7,089**	**7,982**	**8,777**	**9,290**
Surplus/Deficit				**951**	**4,258**	**3,463**	**2,950**

Notes:
(1) Required pumping capacity calculated as the maximum of (a) the peak hour demand to the Central Zone 1 or (b) the maximum day demand to the Central Planning Area Zone plus 3,500 gpm fire flow. The peak hour demand controls.

Table 4.18 shows that the planned SWTP expansion is the only required pumping capacity upgrades needed to meet the pumping capacity requirements of the Central Planning Area (South) split zone.

Table 4.18 Central Zone 1 Pumping Capacity Evaluation

Booster Pump Station	Number of Pumps	Capacity (gpm) or Demand (gpm)					
		Total	Firm	2023	2030	2035	2040
Site 7[(2)]	3	1,500	1,000	0	0	0	0
Site 8	2	1,000	500	500	0	0	0
Site 11	6	5,600	4,800	4,800	4,800	4,800	4,800
Site 12	6	6,500	5,400	5,400	5,400	5,400	5,400
SWTP (Existing)	4	5,275	5,275	5,275	5,275	5,275	5,275
SWTP (Expansion)	5	8,000	8,000	0	8,000	8,000	8,000
Total Capacity		**27,875**	**24,975**	**15,975**	**23,475**	**23,475**	**23,475**
Required Fire Flow				**3,500**	**3,500**	**3,500**	**3,500**
Required Capacity				**6,664**	**7,568**	**9,139**	**10,383**
Delivery to Zone 1 South				**3,745**	**4,828**	**6,617**	**8,891**
Surplus/Deficit				**5,566**	**11,079**	**3,519**	**4,201**

Notes:
(1) Required pumping capacity calculated as the maximum of (a) the peak hour demand to the Central Zone 1 or (b) the maximum day demand to the Central Zone 1 plus 3,500 gpm fire flow, plus maximum day demand to the combined South Zones. The peak hour demand controls.
(2) Sites 7 and 8 are offline and not expected to come back online.

Table 4.19 shows that three future pump stations are used to meet the projected pumping capacity requirements of South Zone 1. These two proposed pump stations would be in the Terrasante, Rainbow Valley, and Estrella Highlands developments and correspond with the three proposed wells and storage facilities in this zone.

Table 4.19 South Zone 1 Pumping Capacity Evaluation

Booster Pump Station	Number of Pumps	Capacity or Demand (gpm)					
		Total	Firm	2023	2030	2035	2040
Site 13 (Zone 1)	5	6,400	3,400	3,400	3,400	3,400	3,400
Site 23	5	11,070	7,710	7,710	7,710	7,710	7,710
Terrasante BPS	4	4,000	3,000	0	3,000	3,000	3,000
Waterman BPS	4	4,000	3,000	0	0	0	3,000
Estrella Highlands BPS	4	4,000	3,000	0			3,000
Total Capacity		**29,470**	**21,110**	**11,110**	**14,110**	**14,110**	**20,110**
Required Fire Flow				**3,500**	**3,500**	**3,500**	**3,500**
Required Capacity				**6,457**	**7,801**	**12,120**	**17,526**
Surplus/Deficit				**4,653**	**6,309**	**1,990**	**2,584**

Notes:
(1) Required capacity calculated as the maximum of (a) the peak hour demand of South Zone 1 or (b) the maximum day demand of South Zone 1 plus a 3,500 gpm fire flow. Peak hour controls.

Zone 2 South currently only has pumping capacity at Site 13, with a firm capacity of only 500 gpm. The current pumping capacity is not sufficient to meet fire flow requirements for the zone. Expanding the pumping capacity of the Zone 2 South pump station at Site 13 is recommended to meet future development and fire flow requirements.

Table 4.20 South Zone 2 Pumping Capacity Evaluation

Booster Pump Station	Number of Pumps	Capacity or Demand (gpm)					
		Total	Firm	2023	2030	2035	2040
Site 13 (Zone 2)	2	1,000	500	500	500	500	500
Site 13 (Zone 2) Expansion	3	1,500	1,000	0	1,000	1,000	1,000
Total Capacity		**2,500**	**1,500**	**500**	**1,500**	**1,500**	**1,500**
Required Fire Flow				**1,000**	**1,000**	**1,000**	**1,000**
Required Capacity				**1,288**	**1,336**	**1,383**	**1,430**
Surplus/Deficit				**(788)**	**164**	**117**	**70**

Notes:
(1) Required capacity calculated as the maximum of (a) the peak hour demand of South Zone 2 or (b) the maximum day demand of South Zone 2 plus a 1,000 gpm fire flow. Maximum day plus fire flow controls.

4.7.5 Distribution System Pressures

4.7.5.1 2023 Water Distribution System

The water model was used to determine if the existing water system meets pressure performance criteria in Peak Hour Demand scenarios. The system pressure criteria states that pressures should remain between 40 to 80 psi where customers are located. Pressures greater than 80 psi can occur but require a service line PRV. Figure 4.13 shows the pressure results throughout the water distribution system in a 2023 peak hour demand scenario without a Central Zone split.

Within the Central Zone, areas south of Dunlap Rd have pressures above 80 psi while pressures at the northern end of the pressure zone are just above 40 psi. Service line PRVs should be used at customer sites that have pressures greater than 70 psi. The pressure range is caused by the large elevation range in the Central Zone. One solution to manage pressures is to split the Central Zone into two zones, Central Zone 1 and Central Zone 2. A pressure zone split would reduce the elevation range of the zone and allow for more freedom in adjusting pump station discharge pressures. One location for a pressure zone split would be the Yuma Rd alignment. A zone boundary along Yuma Rd would result in two new pressure zones of roughly equal size that have several storage, pumping, and water supply facilities.

As an alternative, the City could investigate a pressure zone split boundary that includes the airport and Site 11 in Central Zone 2. Including Site 11 in Central Zone 2 would split the pump station sites that the City must run constantly for on-site reverse osmosis treatment between the two split zones and could make operations easier.

Figure 4.14 shows the facilities required to create a pressure zone boundary. Figure 4.15 shows a pressure zone schematic with the two Central pressure zones.

A 2023 minimum demand scenario (80 percent of average day demand) scenario was modeled and pressures remain within the 40 – 80 psi range.

4.7.5.2 2030 Water Distribution System

The water model was used to evaluate the water distribution system for planning year 2030 with the proposed Central Zone split. Figure 4.16 and Figure 4.17 shows the peak hour and max day plus fire flow pressure results from the 2030 water distribution system with the Central Zone split.

Figure 4.16 shows that the Central Zone split enables model pressures to remain between 40 and 80 psi during peak hour demand conditions. Further, Figure 4.16 shows that the zone split better allows max day demand plus fire flow residual pressures to be kept between 20 and 80 psi throughout the Central Zones 1 and 2.

A 2030 minimum demand scenario (80 percent of average day demand) scenario was modeled and pressures remain in the 40 – 80 psi range.

4.7.5.3 2040 Water Distribution System

The water model was used to evaluate the water distribution system for the 2040 planning period with and without the proposed Central Zone Split. Figure 4.18 and Figure 4.19 shows the pressure results throughout the system in a 2040 Peak Hour Demand Scenario, prior to and after the zone split, respectively. Like 2030 conditions, splitting the Central Zone keeps pressures within the 40 to 80 psi Central Zone 1 and 2.

The City is experiencing higher density residential development in several areas of the City. The demands with the higher density development were evaluated to determine if pressures drop too much where this high-density development is being constructed. Figure 4.20 presents the results of this evaluation. As Figure 4.20 shows, pressures are acceptable even with the higher density development.

A 2040 minimum demand scenario (80 percent of average day demand) scenario was modeled and pressures remain in the 40 – 80 psi range.

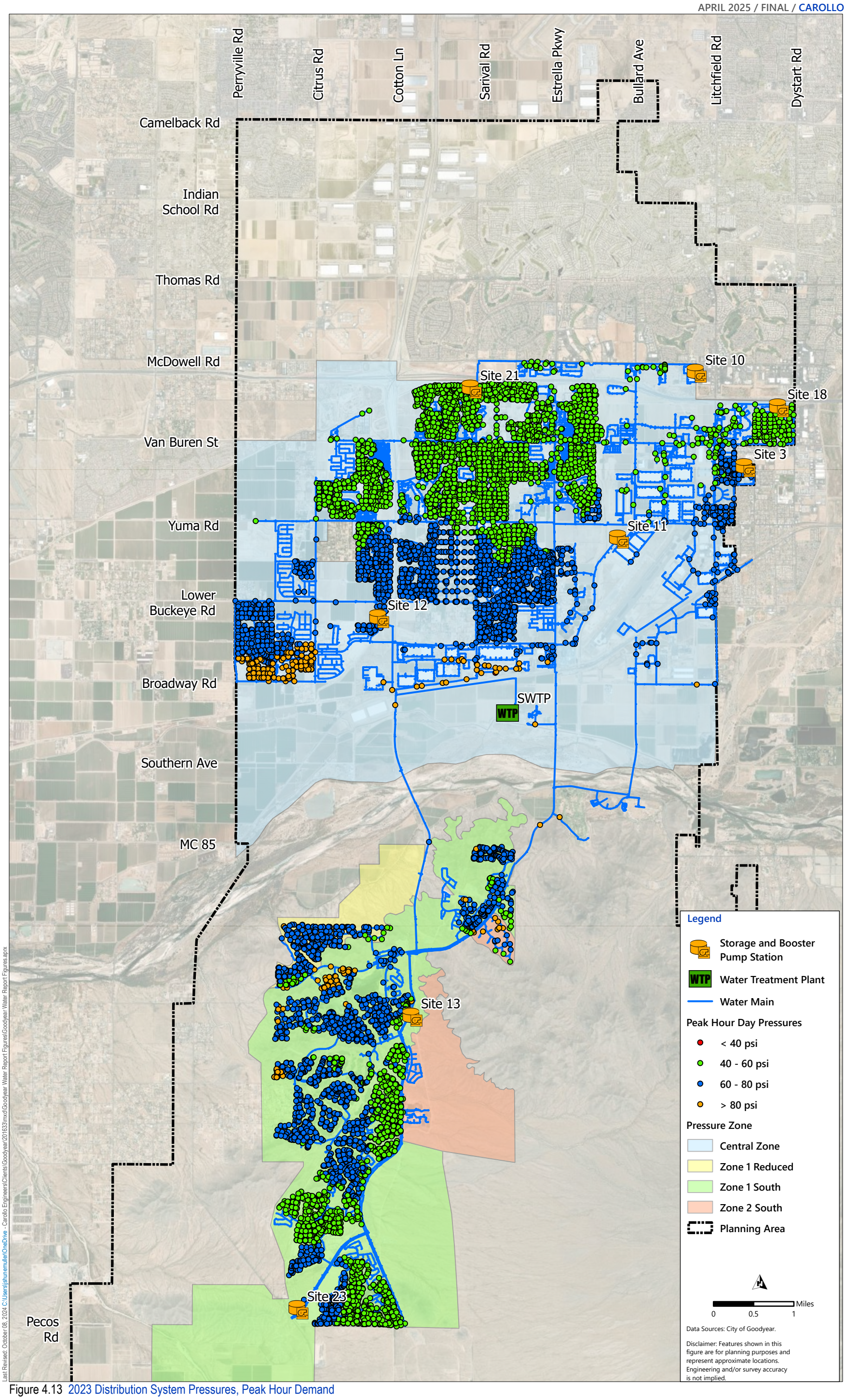


Figure 4.13 2023 Distribution System Pressures, Peak Hour Demand

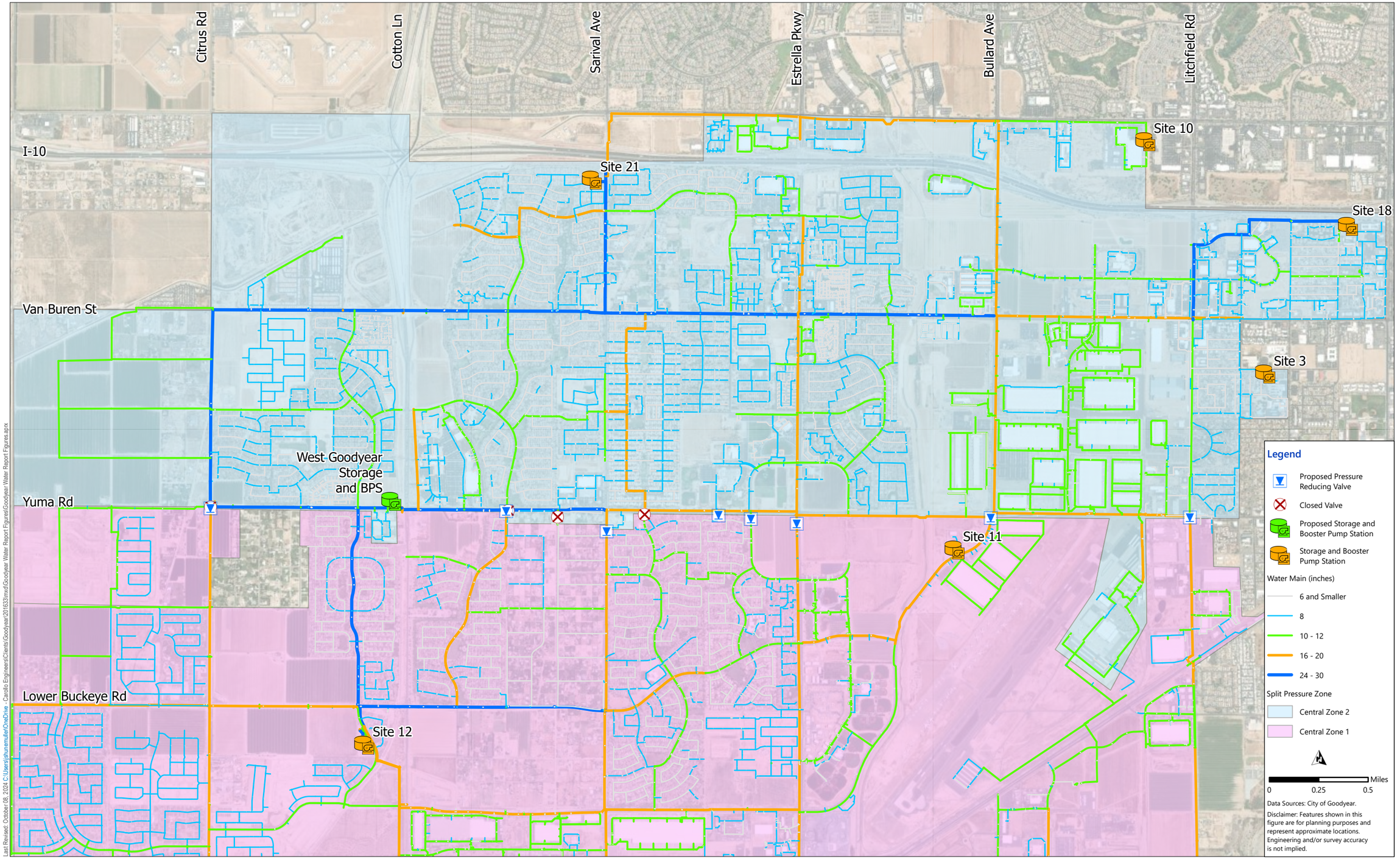


Figure 4.14 Central Zone Split Facilities

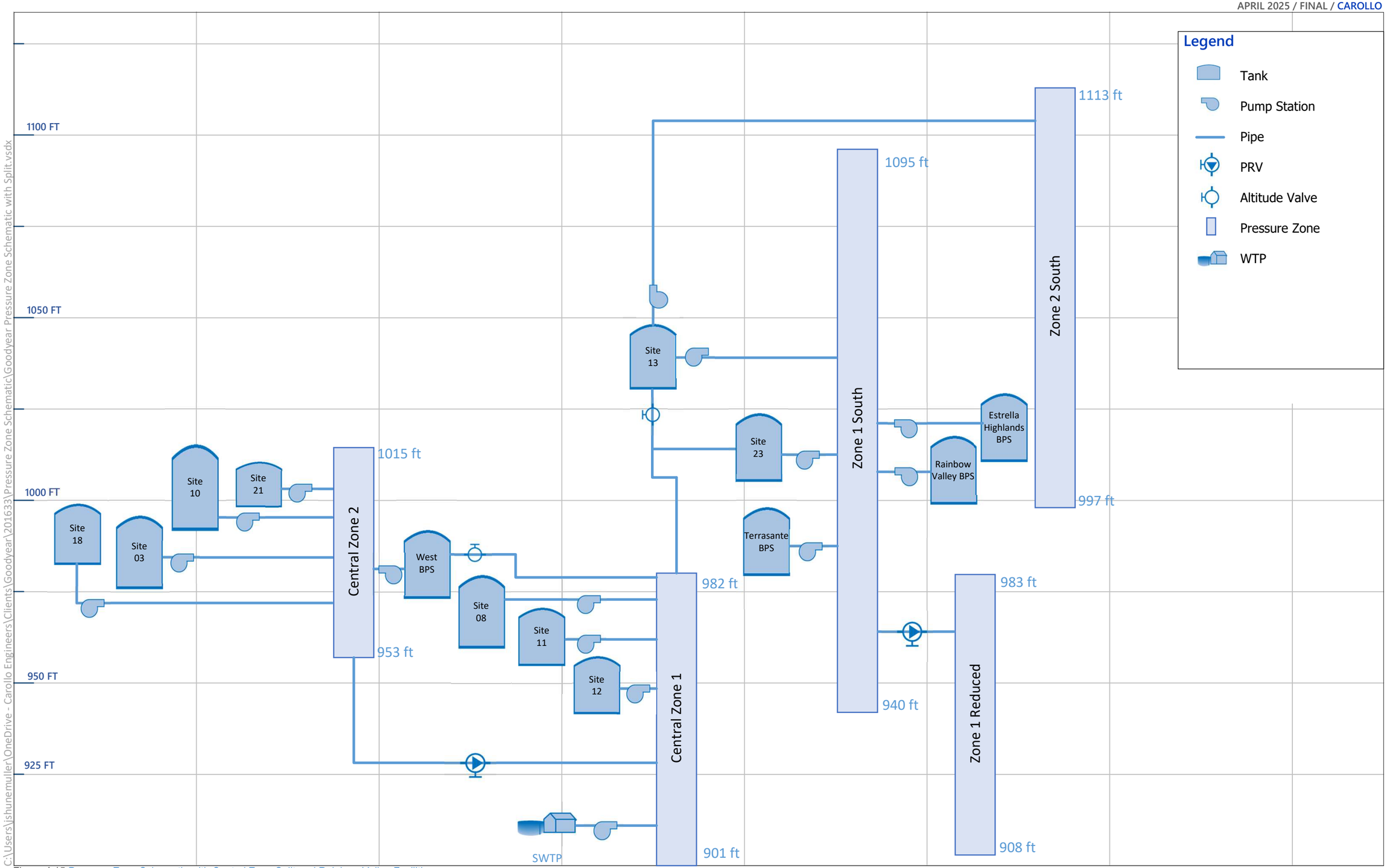


Figure 4.15 Pressure Zone Schematic with Central Zone Split and Rainbow Valley Facilities

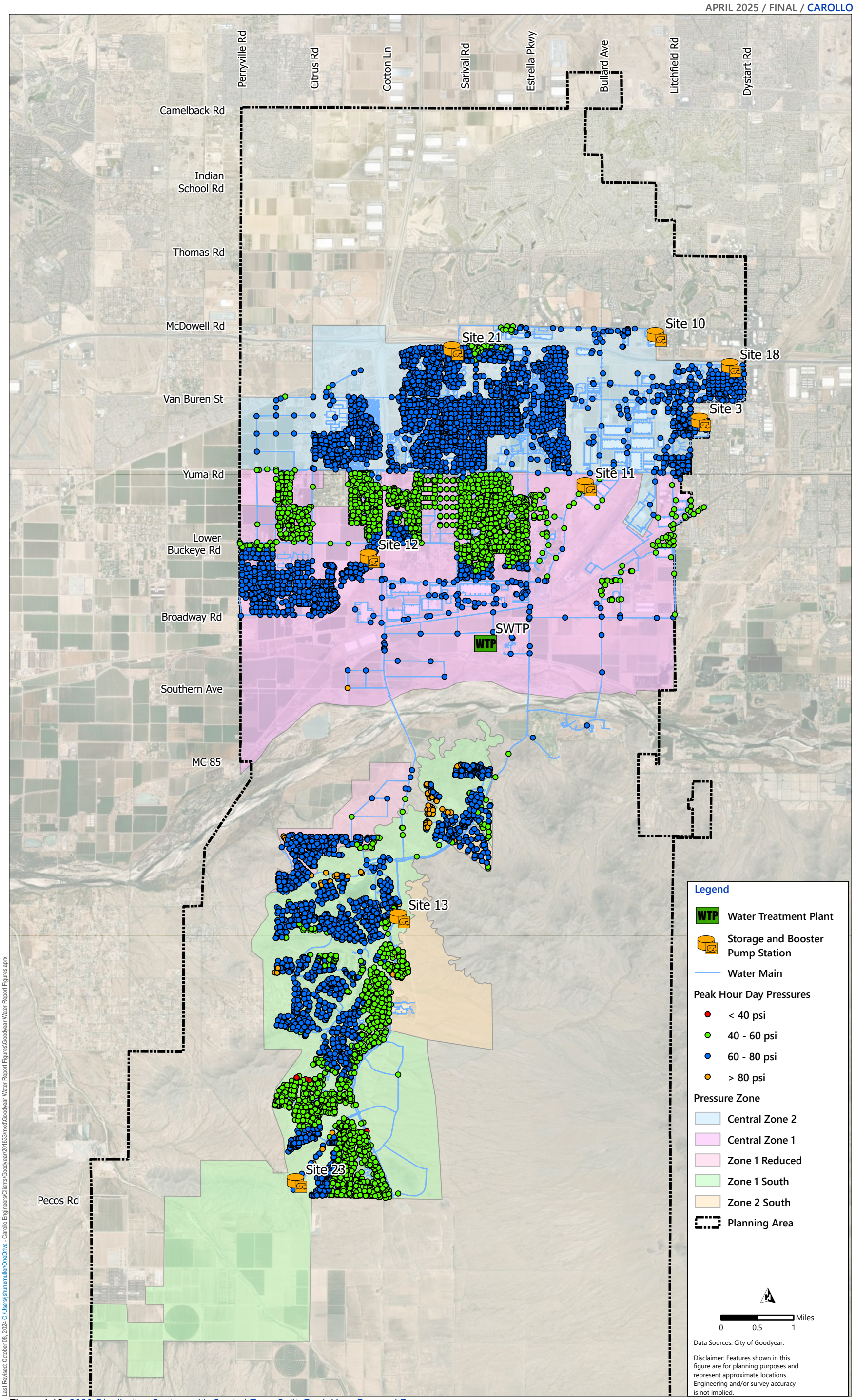


Figure 4.16 2030 Distribution System with Central Zone Split, Peak Hour Demand Pressures

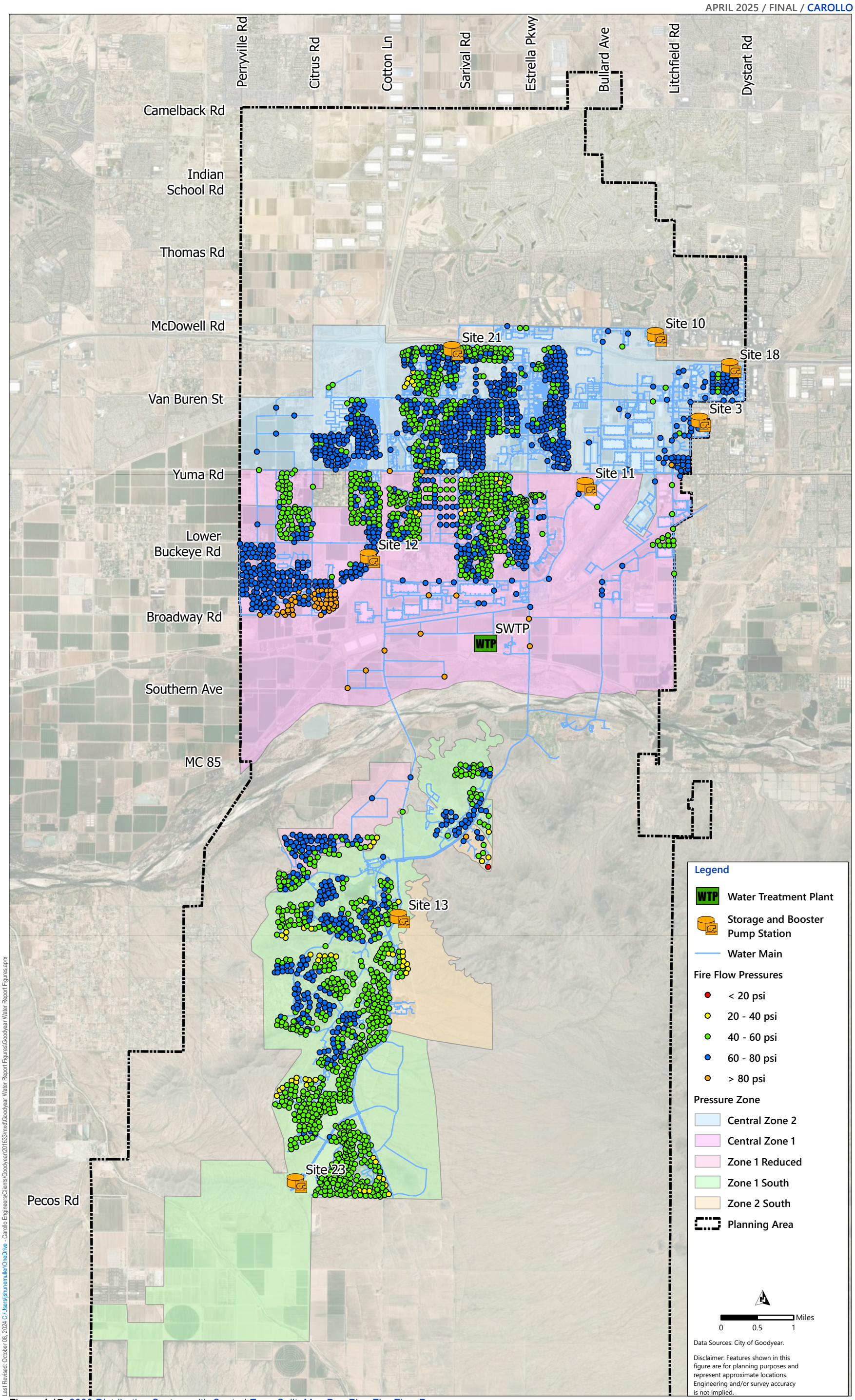


Figure 4.17 2030 Distribution System with Central Zone Split, Max Day Plus Fire Flow Pressures

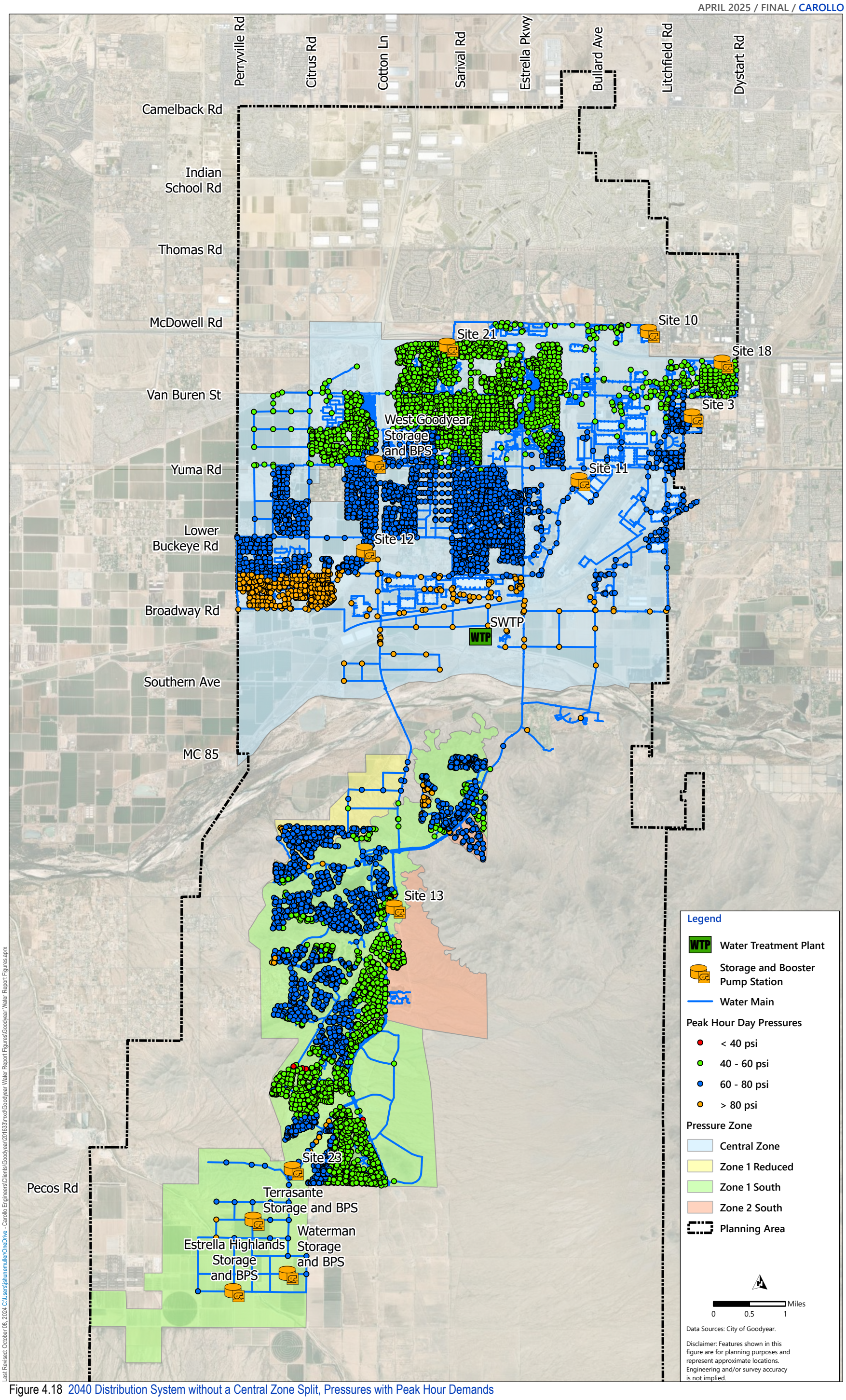


Figure 4.18 2040 Distribution System without a Central Zone Split, Pressures with Peak Hour Demands

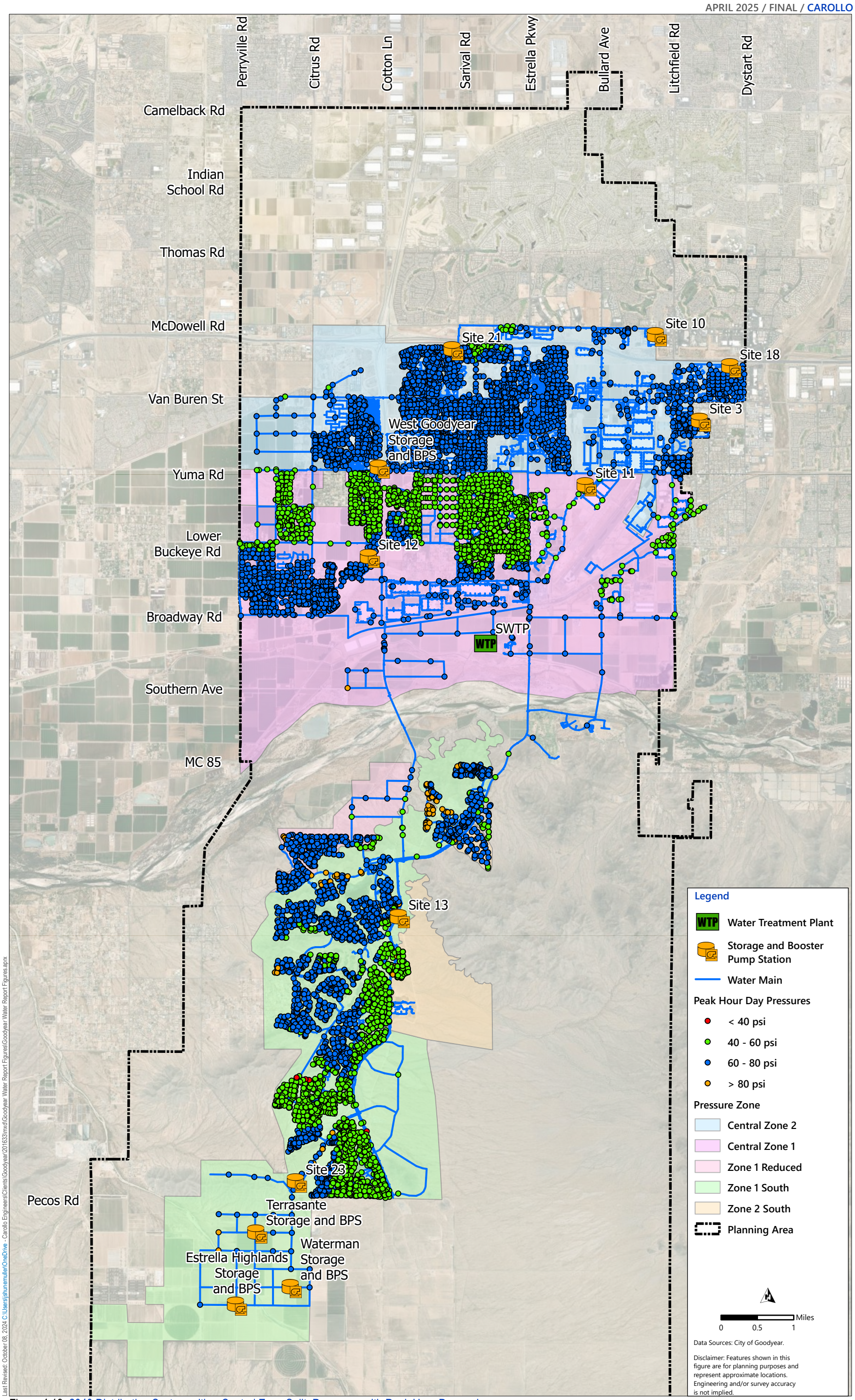
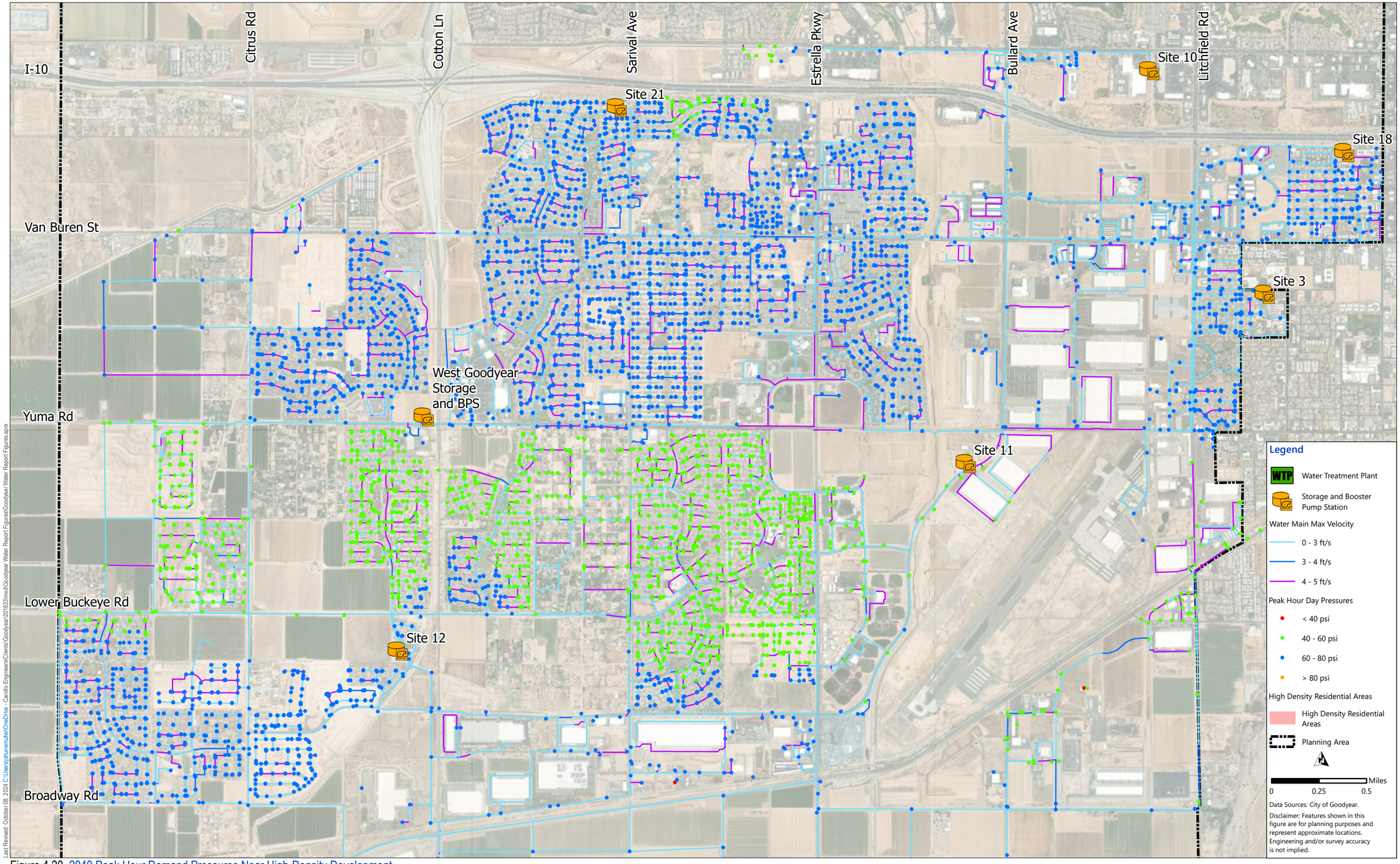


Figure 4.19 2040 Distribution System with a Central Zone Split, Pressures with Peak Hour Demands



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Figure 4.20 2040 Peak Hour Demand Pressures Near High-Density Development

4.7.6 Pipe Velocities

The 2023 water system was also evaluated to determine if pipeline velocities with peak hour conditions resulted in flows that were less than 7 ft/sec. This criterion was satisfied for all pipes in the distribution system. Figure 4.21 presents the 2023 water system peak hourly water velocities.

Figure 4.22 presents the maximum pipe velocities for the 2040 peak hourly demand conditions when the Central Zone is split. Maximum pipe velocity results were found to be similar with and without a Central Planning Area zone split.

4.7.7 Fire Flow Evaluation

The hydraulic model was used to evaluate the ability of the 2023 water distribution system to provide maximum day demands plus fire flow demands. The fire flow criterion is 1,500 gpm for residential areas and 3,500 gpm for commercial, industrial, and school areas. For horse properties, a fire flow of 1,000 gpm was applied because the pipes in many of these areas were not designed to deliver 1,500 gpm fire flows. Fire flow demands were applied only to pipes where hydrants exist. Most areas were able to deliver the required fire flow with a residual pressure greater than 20 psi. Areas where fire flows provided were less than the required criteria were primarily on dead end lines and locations where the pipe diameter is 6 inches or smaller. Figure 4.23 presents the 2023 water system fire flow residual pressures.

The hydraulic model was also used to evaluate the water distribution system under 2040 conditions to provide maximum day demands plus fire flow demands. Figure 4.24 and Figure 4.25 show the fire flow residual pressures for the 2040 water distribution system without and with a Central Zone split, respectively.

The development area south of Estrella Pkwy between Santa Elizabeth Dr and Krista Dr W in Zone 2 South does not meet fire flow requirements. This fire flow failure is due to a combination of low pumping capacity in Zone 2 South and high elevations in this development. The addition of pumps at Site 13 (Zone 2 South) would be beneficial to provide sufficient fire flow to this zone.

There are large areas of Zone 1 South and Zone 2 South that are not yet developed in Rainbow Valley. These areas are in the same elevation range as Zone 1 South and Zone 2 South. Therefore, pressures and fire flow capacity in these areas are predicted to be similar to the developed areas of current development in each zone.

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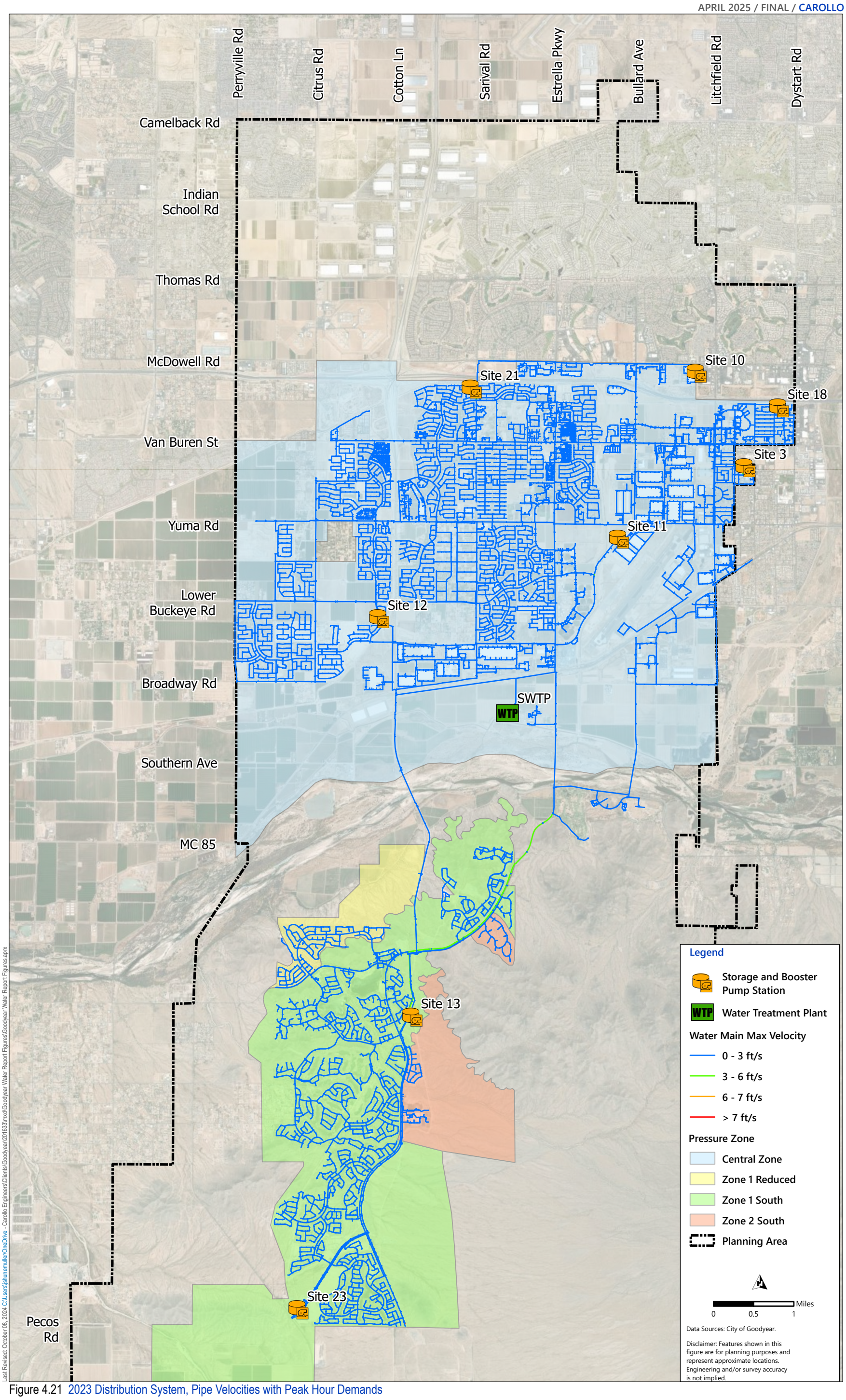


Figure 4.21 2023 Distribution System, Pipe Velocities with Peak Hour Demands

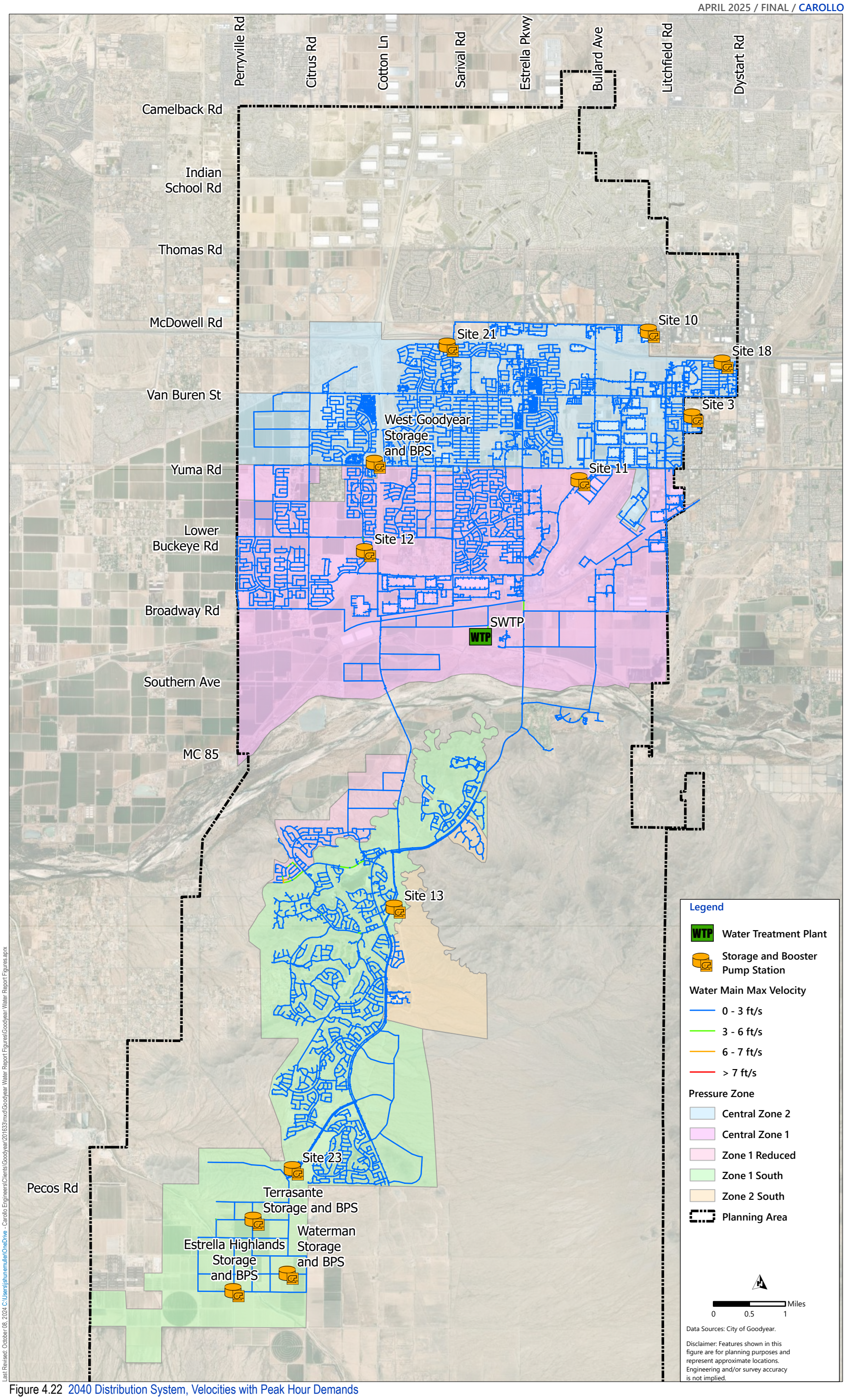


Figure 4.22 2040 Distribution System, Velocities with Peak Hour Demands

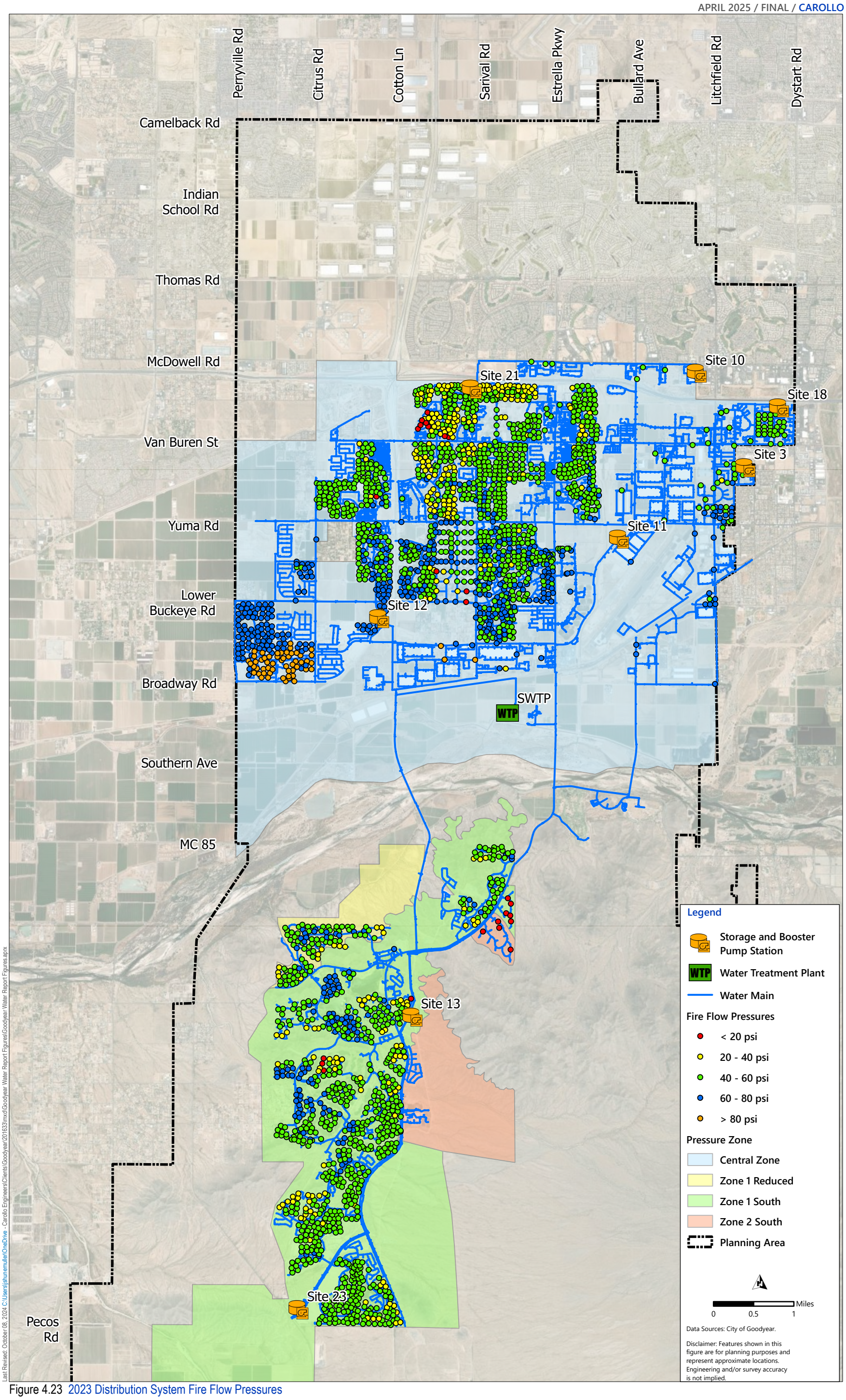


Figure 4.23 2023 Distribution System Fire Flow Pressures

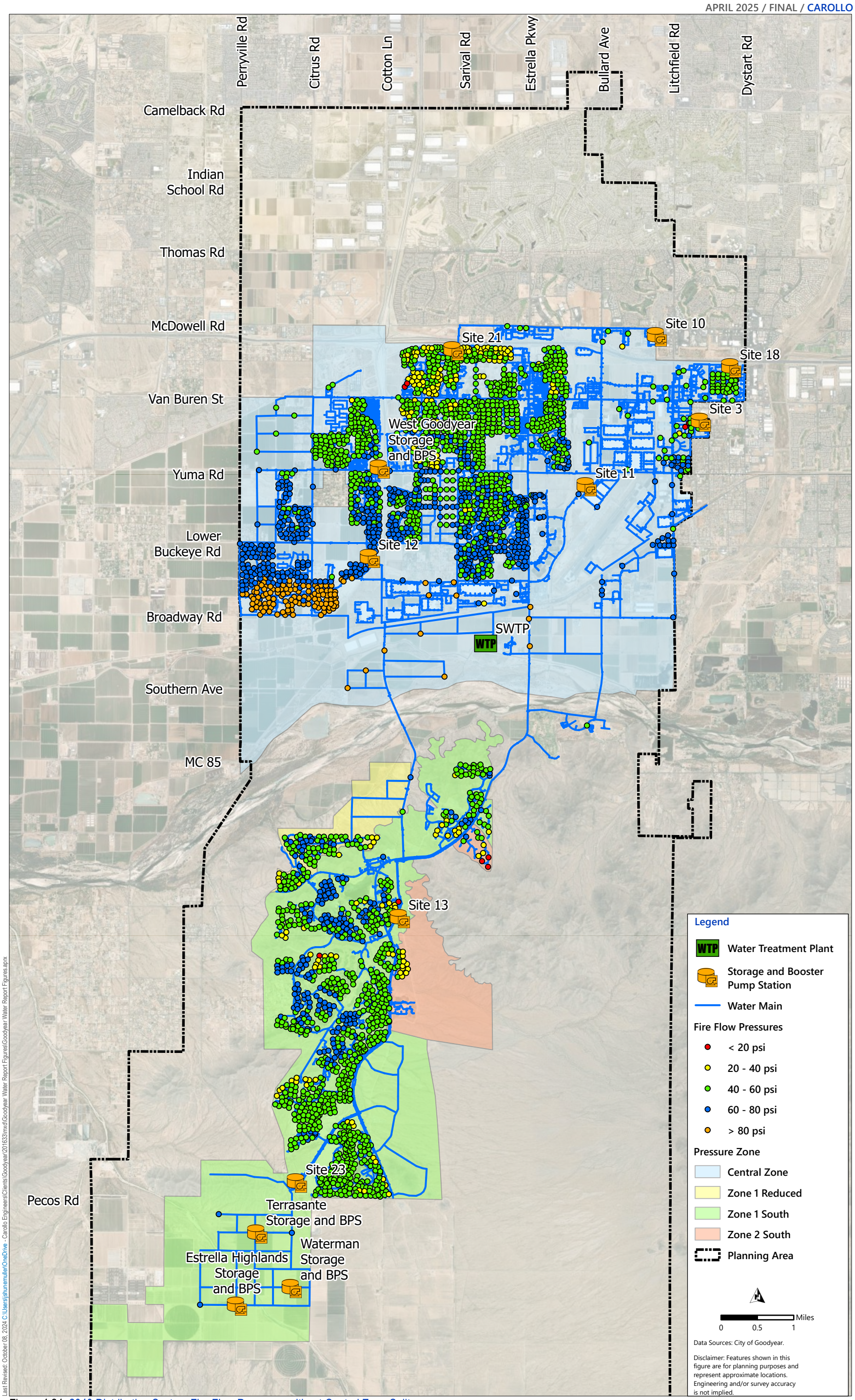


Figure 4.24 2040 Distribution System Fire Flow Pressures without Central Zone Split

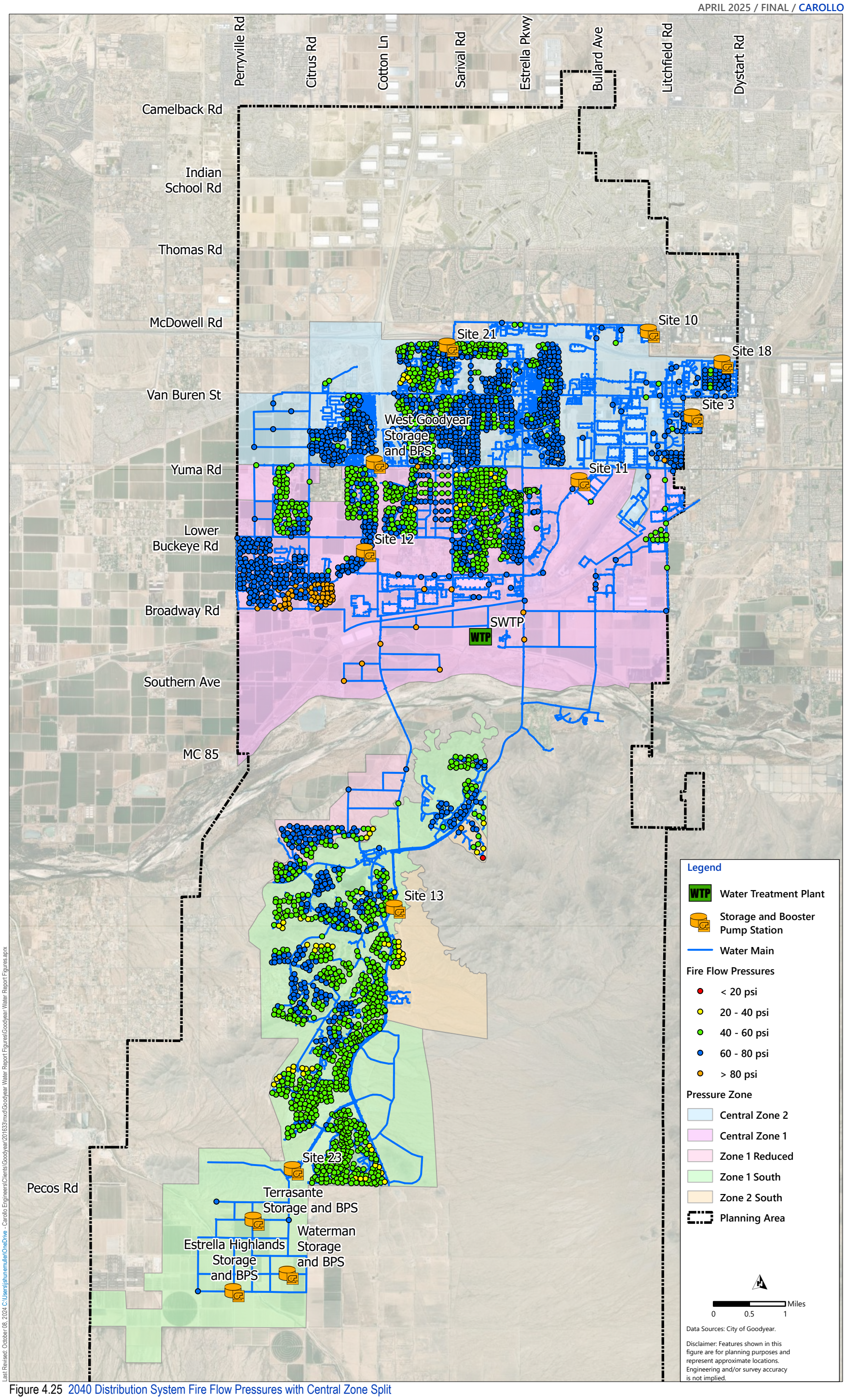


Figure 4.25 2040 Distribution System Fire Flow Pressures with Central Zone Split

4.8 Water System Capital Improvement Projects

Based on the system evaluations performed in this plan, projects have been identified to water system capacity where needed. This report recommends that the Central Planning Area be split into a north and south zone, primarily along the Yuma Rd alignment. The recommended projects in this section include the required infrastructure to create the pressure zone split. Figure 4.26 shows the recommended CIP projects for the water distribution system.

4.8.1 City Funded Projects

Table 4.21 through Table 4.25 list the water system improvements the City may fund.

Table 4.21 City Funded Water Supply Projects

Project #	Facility Type	Planning Period	Location	Justification	Diameter/Size (in/MG/mgd)	Length/Qty (ft/#)
W-21.6	Well	2035	Yuma Rd and Cotton Ln	Supply water to the West Goodyear Storage and Booster Pump Station.	2	1
W-28	WTP	2030	SWTP Expansion	Expand water production and storage capacity at SWTP.	9.5	1
W-31	Well	2030	Replace Well 18B	Increase Central Zone water production capacity. Arsenic treatment needed.	1.25	1
W-32	Well	2035	Site 21	Remove nitrate from Adaman well water.	2.25	1
W-42	Well	2035	Well 18 and 18B	Remove PFAS from Well 18 and 18B water.	1.25	1

Table 4.22 City Funded Water Storage Projects

Project #	Facility Type	Justification	Location	Volume Phase 1/2 (MG)	Planning Phase	Length/Qty (ft/#)
W-21.2	Tank	Provide additional storage capacity to Central Zone 2.	West Goodyear Storage Tanks	1.5/1.5	2035	2
W-41	Tank	Replace retired storage at Site 7 and Site 8.	Site 18	1.5	2030	1

Table 4.23 City Funded Pumping Facility Projects

Project #	Facility Type	Justification	Location	Flow Rate (gpm)	Planning Period
W-21.1	Pump Station	Provide redundant pumping capacity to Central Zone 2.	West Goodyear Booster Pump Station	5.75	2035
W-30	Pump Station	Provide additional pumping and fire flow capacity to Zone 2 South.	Site 13 (Zone 2 South) Pump Station	2.25	2040

Table 4.24 City Funded Pipeline and PRV Station Projects

Project #	Facility Type	Justification	Location	Diameter (in)	Length/Qty (ft/#)	Planning Phase
W-7	Water Main	Serve future developments and improve system looping.	Broadway Rd, from Estrella Pkwy to Bullard Ave	12	10,480	2030
W-14	Water Main	Serve future developments and improve system looping.	Desert Trumpet Rd to Westar Dr	12	3,385	2035
W-21.3	Water Main	Improve transmission capabilities for West Goodyear BPS.	From Citrus Rd and Jefferson St to Van Buren St at RV Park	24	3,895	2035
W-21.4	Water Main	Improve transmission capabilities for West Goodyear BPS.	From Citrus Rd and Yuma Rd to Yuma Rd and 175h Dr	24	2,409	2035
W-22	PRV	Split Central Zone into two pressure zones.	Yuma Rd and 173rd Ave	8	1	2035
W-23	PRV	Split Central Zone into two pressure zones.	Sarival Ave and Yavapai St	8	1	2035
W-24	PRV	Split Central Zone into two pressure zones.	Yuma Rd and 158th Dr	6	1	2035
W-25	PRV	Split Central Zone into two pressure zones.	Yuma Rd and 157th Ave	8	1	2035
W-26	PRV	Split Central Zone into two pressure zones.	Yuma Rd and Estrella Pkwy	8	1	2035
W-27	PRV	Split Central Zone into two pressure zones.	Yuma Rd and Litchfield Rd	8	1	2035
W-38	PRV	Split Central Zone into two pressure zones.	Yuma Rd and Bullard Ave	8	1	2035
W-39	PRV	Split Central Zone into two pressure zones.	Yuma Rd and Canyon Trails Blvd	8	1	2035
W-33	Water Main	Improve transmission capabilities from SWTP to western Goodyear.	From County Rd 85 and Sarival Ave to Citrus Rd and Broadway Rd	24	7,530	2035
W-34	Water Main	Parallels existing 16". Improve transmission capabilities from Site 12.	From Site 12 to Cotton Ln and County Rd 85	16	6,106	2040
W-35	Water Main	Replace undersized pipes to remove bottlenecks in pipeline.	Pipeline Replacements from Central zone to Site 13	20	3,548	2035
W-36	Water Main	Improve transmission from the SWTP.	From MC85 & North of SWTP to Estrella Pkwy and MC85	24	2,660	2030
W-37	Water Main	Improve transmission capacity to Microsoft sites.	16-Inch Pipe on Litchfield Rd from El Cielo to Main St	16	750	2030

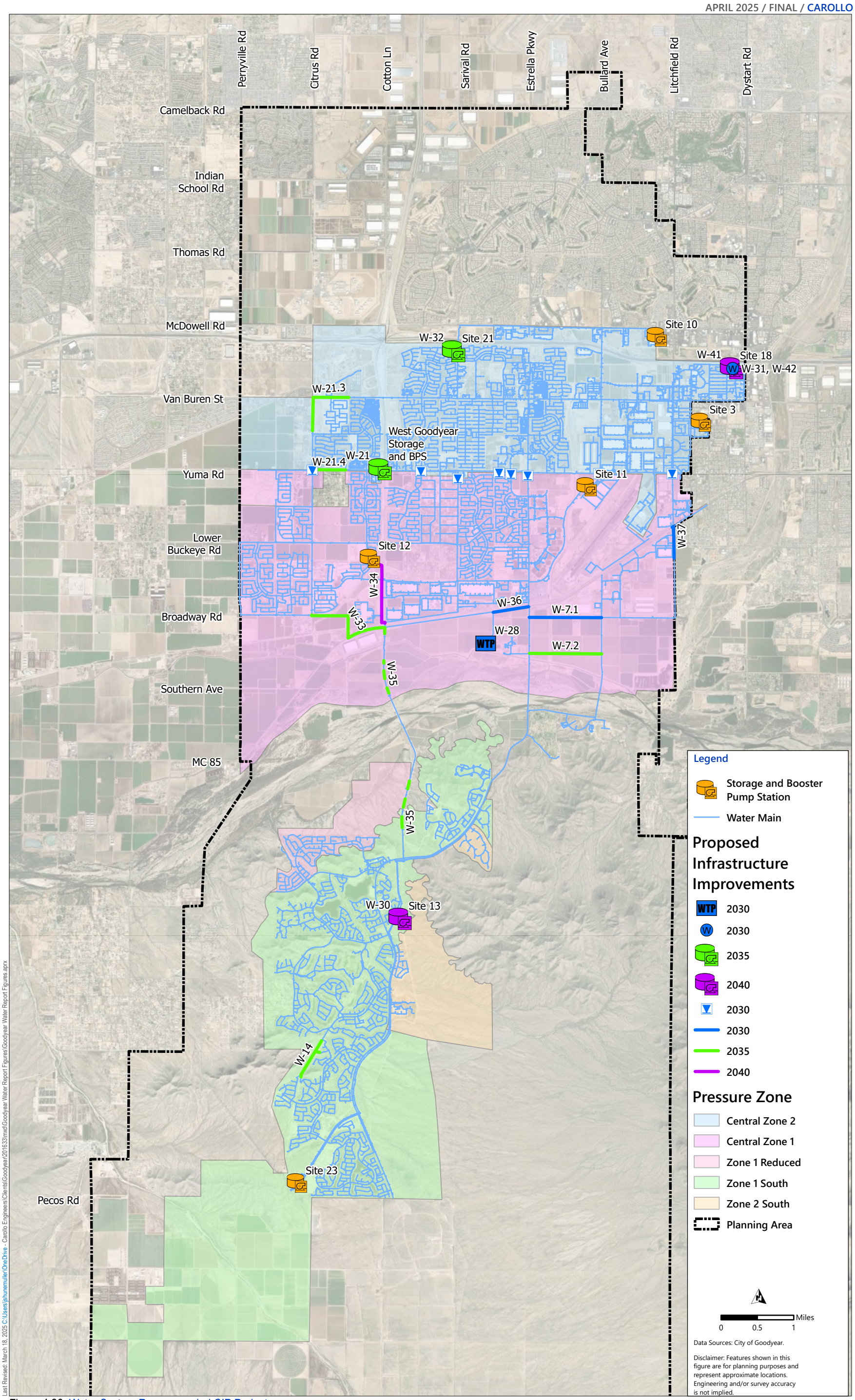


Figure 4.26 Water System Recommended CIP Projects

4.8.2 Developer-Funded Projects

Table 4.25 through Table 4.28 list the infrastructure projects that a developer may fund. Figure 4.27 shows the recommended developer-funded projects for the water distribution system.

Table 4.25 Developer-Funded Water Supply Projects

Project #	Facility Type	Planning Period	Location	Justification	Diameter/Size (in/MG/mgd)	Length/Qty (ft/#)
W-17.3	Well	2035	Terrasante Well	Serve new customers	2	1
W-20.3	Well	2035	Waterman Well	Serve new customers	2	1
W-40.1	Well	2040	Estrella Highlands	Serve new customers	2	1

Table 4.26 Developer-Funded Water Storage Projects

Project #	Facility Type	Justification	Location	Volume Phase 1/2 (MG)	Planning Phase	Planning Phase	Length/Qty (ft/#)
W-17.2	Tank	Serve new customers	Terrasante Storge Tanks	1/1	2035	2028	2
W-20.2	Tank	Serve new customers	Waterman Storage Tanks	1/1	2035	2040	2
W-40.2	Tank	Serve new customers	Estrella Highlands Storage Tanks	1/1	2040	2040	2

Table 4.27 Developer-Funded Pumping Facility Projects

Project #	Facility Type	Justification	Location	Flow Rate (gpm)	Planning Period
W-17.1	Pump Station	Serve new customers	Terrasante Booster Pump Station	5.6	2035
W-20.1	Pump Station	Serve new customers	Waterman Booster Pump Station	5.6	2035
W-40.3	Pump Station	Serve new customers	Estrella Highlands Booster Pump Station	5.6	2040

Table 4.28 Developer-Funded Pipeline Projects

Project #	Facility Type	Justification	Location	Diameter (in)	Length/Qty (ft/#)	Planning Phase
W-8	Water Main	Serve future developments	South of MC 85, from Cotton Ln to SWTP	12	9,944	2030
W-9	Water Main	Serve future developments	Southeast of Buckeye Canal Rd and Cotton Ln	12	9,827	2030
W-10	Water Main	Serve future developments	Southwest of Buckeye Canal Rd and Cotton Ln	12	8,063	2030
W-11	Water Main	Serve future developments	Van Buren St to Yuma Rd and Perryville Rd to Citrus Rd	12	19,949	2030
W-12	Water Main	Serve future developments	Yuma Rd to Lower Buckeye Rd, east of Perryville Rd	12	7,930	2030
W-13	Water Main	Serve future developments	North of San Gabriel Dr, west of Cotton Ln	12	12,119	2030
W-15	Water Main	Serve future developments	Estrella Development Area	12	23,137	2035
W-16.1	Water Main	Serve future developments	Rainbow Valley Phase 2028 Developments	12	13,272	2035
W-16.2	Water Main	Serve future developments	Rainbow Valley Phase 2028 Developments	16	6,557	2035
W-16.3	Water Main	Serve future developments	Rainbow Valley Phase 2028 Developments	24	630	2040
W-18.1	Water Main	Serve future developments	Rainbow Valley Phase 2033 Developments	12	15,888	2040
W-18.2	Water Main	Serve future developments	Rainbow Valley Phase 2033 Developments	16	13,205	2035
W-19.1	Water Main	Serve future developments	Rainbow Valley Phase 2038 Developments	12	14,544	2035
W-19.2	Water Main	Serve future developments	Rainbow Valley Phase 2038 Developments	16	10,650	2030

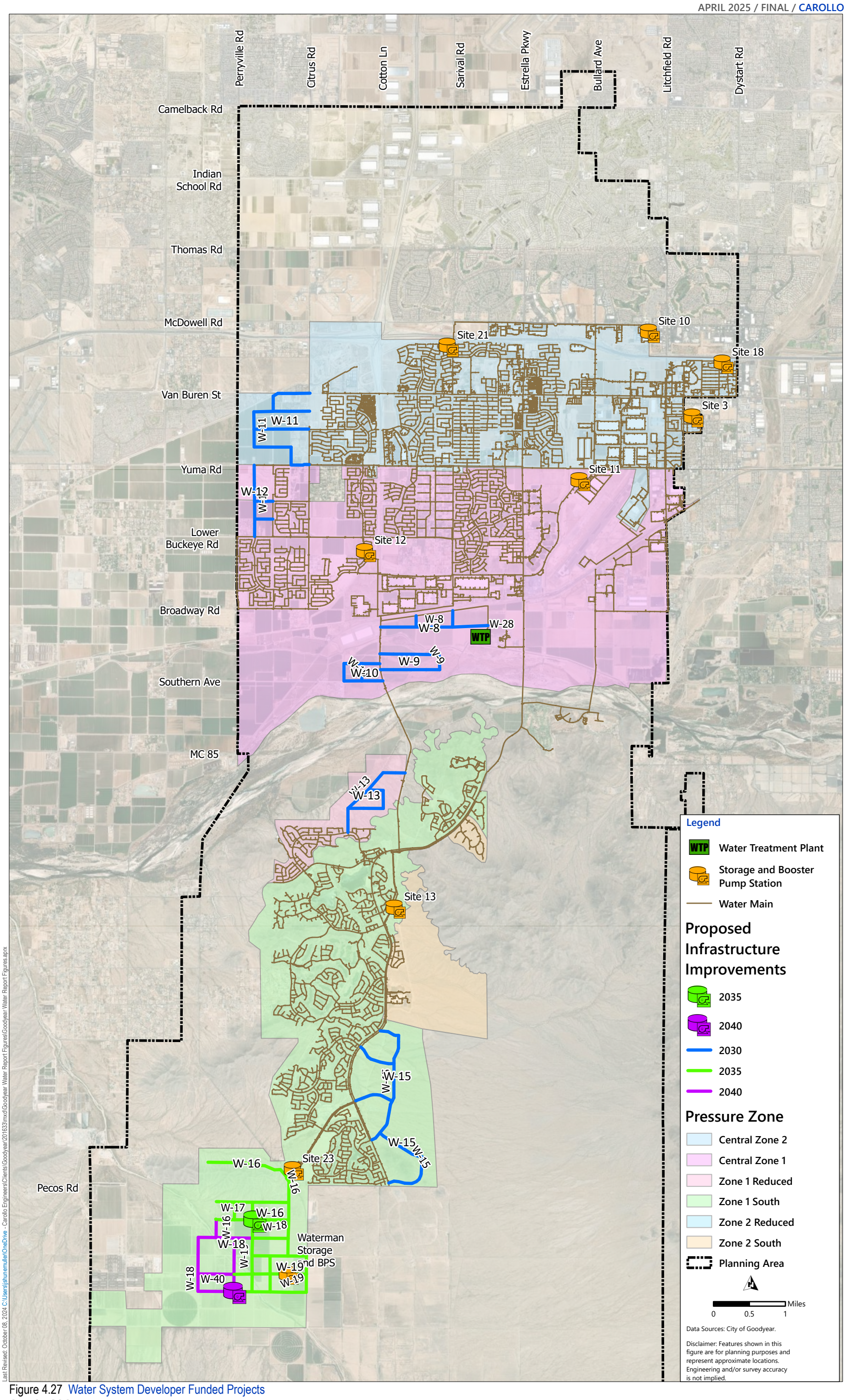


Figure 4.27 Water System Developer Funded Projects

4.9 Conclusion and Recommendations

4.9.1 Central Goodyear Improvements

New multi-family residential developments are being constructed in the Central Goodyear with additional residential developments projected through buildout. The existing distribution system supplies adequate pressures for current development, and the following infrastructure improvements are recommended to meet pressure and fire flow requirements through buildout:

1. The Surface Water Treatment Plant should be expanded to increase its capacity to 16-mgd by 2030. A new 4-MG storage facility and 8,000-gpm of pumping capacity should be included in the expansion.
2. A new 1.5-MG storage tank should be installed at Site 18 by 2030 to replace the retiring storage at Sites 7 and 8.
3. Ion exchange treatment should be installed at Site 21 by 2030 to treat water when the third Adaman well is brought online.
4. Well 18B should be repaired and brought online by 2030, along with any required arsenic and PFAS treatment.
5. The City should construct transmission mains to improve the transmission capabilities from water production sites and the proposed West Goodyear Storage and Booster Pump Station. Detailed descriptions of the recommended transmission main projects are provided in Sections 4.6 and 4.8 and in Chapter 7 of this report.
6. Construction of the West Goodyear Storage and Booster Pump Station by 2035 will improve the City's ability to meet demands from developing areas in western and northern Central Goodyear.
7. Splitting the Central Zone into northern and southern pressures zones by 2035 will allow the City to increase discharge pressures at Sites 3, 10, 18, and 21 to provide improved fire flows.

4.9.2 Central Pressure Zone Split

Due to the large elevation range in the Central Pressure Zone creates operational challenges in the Central Pressure Zone. Although pressures in the Central Zone meet requirements, the following recommendations could improve pressures and simplify pump station operations:

1. Split the Central Zone into Central Zone 1 and Central Zone 2 by installing 8 pressure reducing valves along the Yuma Rd alignment, by 2035. A pressure zone split will give the City the ability to improve pressure throughout the Central Zone.
2. The City should construct the West Goodyear Storage and Booster Station by 2035 to be located at the intersection of Cotton Ln and Yuma Rd with a 2-MG storage tank, 5.75-mgd of pumping capacity, and a 2 mgd well. This station will provide water to the new Central Zone 2.
3. A water main should be constructed between the West Goodyear Pump Station and the 24-inch water main that runs north from Site 12 at 173rd Ave and Yuma Rd. This connection will give the City the option of moving water north from Central Zone 1 to Central Zone 2 via the West Goodyear Storage and Booster Pump Station.

4.9.3 Estrella and Rainbow Valley Improvements

Demands in Goodyear's South Zone 1 pressure zone are expected to increase significantly as the Estrella area continues to develop and new developments in Rainbow Valley come online. To continue to meet pressure and fire flow requirements in the southern pressure zones, it is recommended that:

1. The City should upsize smaller-diameter pipe sections on the pipeline on Cotton Ln that provides water to the South Zones from the Central Zone by 2035. Improving this pipeline to have a uniform diameter will increase the City's capacity to deliver water to Sites 13 and Site 23.
2. The Site 13 (Zone 2) pump station should be expanded by 2040 to improve fire flow coverage in the South Zone 2 pressure zone.
3. Three new well, storage, and booster pump stations (Tartesso by 2030, Waterman by 2035, and Estrella Highlands by 2040) should be constructed by developers in Rainbow Valley to serve planned developments. New wells are expected to need arsenic treatment.

CHAPTER 5 WASTEWATER INFRASTRUCTURE MASTER PLAN

5.1 Introduction

Chapter 5 presents the wastewater system evaluation for the City as part of the 2024 IWMP. The purpose of the wastewater master plan is to identify the wastewater system growth, improvements, and timing to serve the City's needs through the 2030, 2035, and 2040 infrastructure planning periods. To develop the master plan, a hydraulic model was prepared to evaluate the capacity of the collection system in each infrastructure planning period. Proposed future infrastructure was evaluated, the timing of future wastewater treatment facility expansions was determined, and a plan for future collection system expansion was developed.

This chapter of the IWMP contains the following sections:

- 2024 Wastewater Collection System.
- Wastewater Collection System Hydraulic Model Update.
- Hydraulic Model Calibration.
- Wastewater System Performance Criteria.
- Future Infrastructure.
- Collection System Evaluations.
- Wastewater System Capital Improvement Program.
- Conclusion and Recommendations.

5.2 2024 Wastewater Collection System

The City's wastewater collection system is organized by the water planning areas defined in Chapter 2 and shown in Figure 5.1. WPA 1 and WPA 2 is served by the 157th Avenue WRF. The 157th Avenue WRF is the largest WRF owned by the City.

Liberty Utilities serves the remainder of the City north of I-10. This service area was not evaluated in the IWMP because it is not owned by the City.

WPA 3 is located south of the Gila River and currently includes only the Estrella community although additional developments are planned in WPA 3. The Corgett WRF serves the northern part of Estrella exclusively and is located south of the Gila River toward the west side of Estrella. The Rainbow Valley WRF serves the southern part of the Estrella community and is located near the at the south end of Estrella. The Rainbow Valley WRF is planned to serve currently undeveloped lands in the northern Part of WPA 4.

The central and southern portions of WPA 4 will be served by the future Waterman Wash WRF. The Waterman Wash WRF is expected to be developed beyond 2040 and is therefore not evaluated in this IWMP update.

Development of WPA 5 is not expected to begin before 2040. The City's current perspective is that WPA 5 may be served by a private utility, so a wastewater plan is not prepared in the IWMP for WPA 5.

5.2.1 Wastewater Treatment Facilities

5.2.1.1 157th Avenue WRF

Most of the developed area within the City is served by the 157th Avenue WRF, which is located at 157th Avenue and Romley Road, north of the BWCDD Canal. Wastewater is conveyed to this facility through two interceptors (24-inch and 36-inch) that enter the plant's influent pump station from the north. The current treatment plant capacity is 6.1 million gallons per day (mgd) average annual daily flow (AADF). The 2023 flows to the 157th Avenue WRF are 5.3 mgd AADF.

There is an area in WPA 2 located south of I-10, north of Van Buren St., and west of Cotton Lane that is served either by septic systems.

In the future, the King Ranch development located south of the Gila River will be served by the 157th Avenue WRF. Even though King Ranch is located in WPA 3 and is closer to the Corgett WRF, reclaimed water from the Corgett WRF is used by Estrella. By transporting this wastewater flow to the 157th Avenue WRF. The City can use the reclaimed water generated by this development to augment the City's water resource portfolio.

5.2.1.2 Corgett WRF

The Corgett WRF is located northwest in the Estrella community west of San Gabriel Drive. Wastewater is conveyed to this facility through a 24-inch interceptor that enters the plant from the east. The current treatment capacity is 0.8 mgd AADF. The 2023 flows to the Corgett WRF are 0.5 mgd AADF.

5.2.1.3 Rainbow Valley WRF

The Rainbow Valley WRF is located on the northeast corner of the Rainbow Valley Road and Willis Road intersection southwest of the Montecito development in the Estrella community. Wastewater is conveyed to this facility through a 30-inch gravity sewer on the north and a 21-inch gravity sewer on the south. The current treatment capacity is 0.75 mgd AADF. The 2023 flows to the Rainbow Valley WRF are 0.5 mgd AADF. Current development that is served by the Rainbow Valley WRF is all in WPA 3, but future growth in WPA 4 over the next 15 years is planned to be served by the Rainbow Valley WRF.

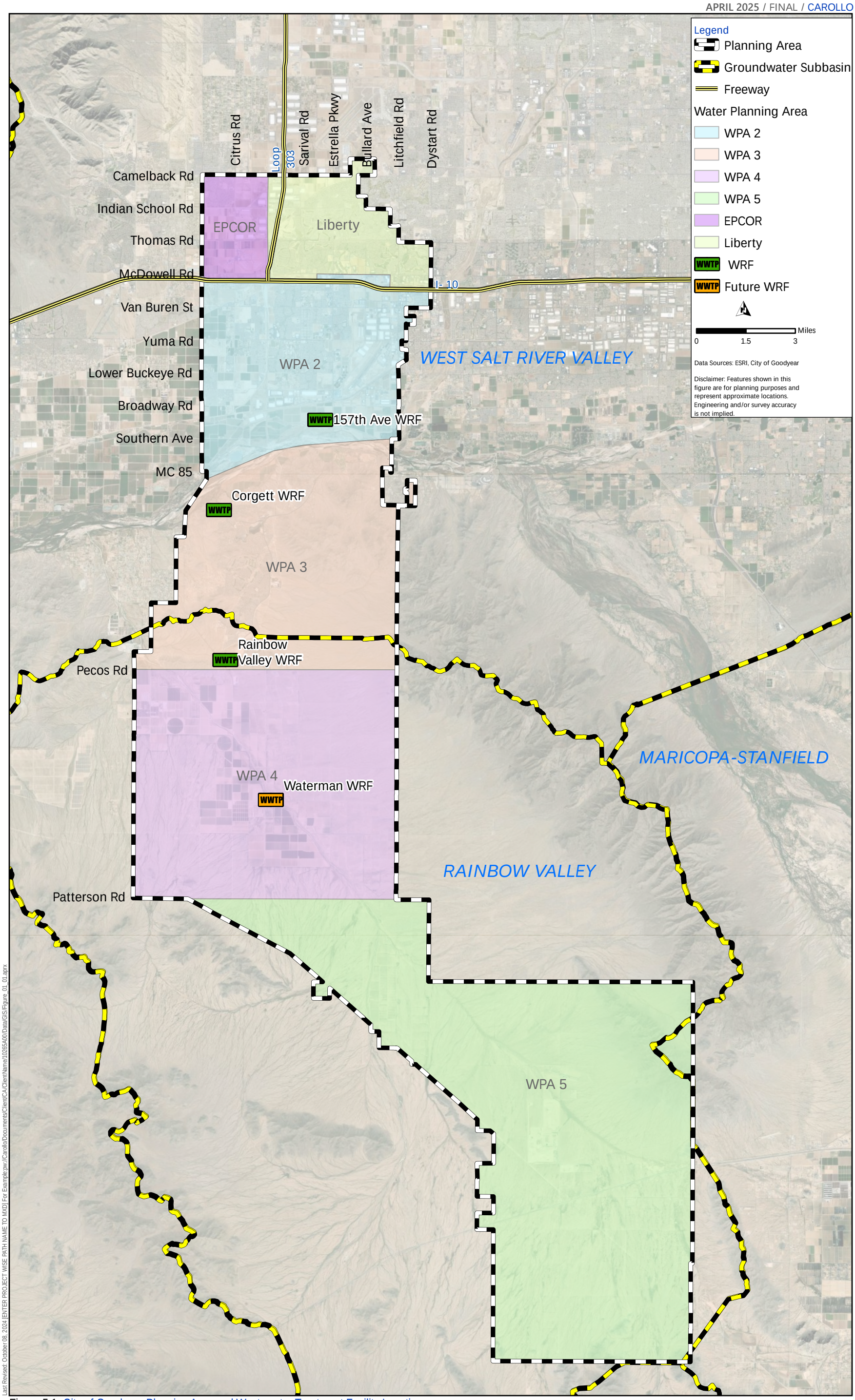


Figure 5.1 City of Goodyear Planning Area and Wastewater Treatment Facility Locations

5.2.2 Gravity Collection System

The City's existing wastewater collection system consists of 343 miles of gravity collection system pipes ranging from 4 to 60 inches in diameter, with approximately 7,108 manholes. Table 5.1 presents a summary of the gravity mains by diameter, based on the City's GIS geodatabase provided for this project. As shown in Table 5.1, roughly 84 percent of the City's gravity pipes are 8 to 12 inches in diameter. Figure 5.2 presents the 2024 wastewater collection system including gravity sewers, lift stations, and WRFs.

Table 5.1 Gravity Pipeline Summary by Diameter

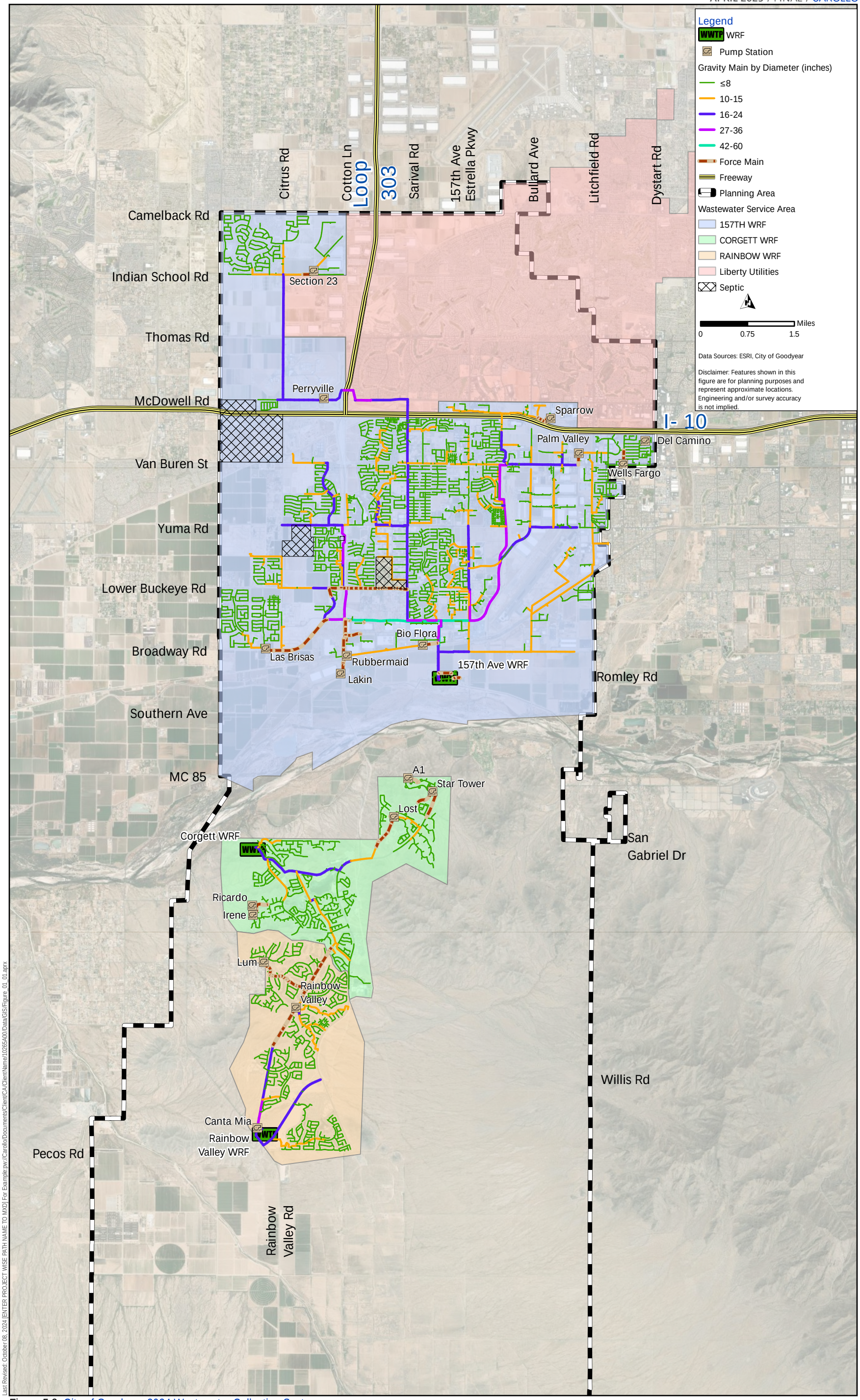
Diameter (in)	Length (mi)	Percent of Collection System
≤6	9.0	2.6%
8	251.4	73.4%
10	14.8	4.3%
12	22.1	6.4%
15	12.2	3.6%
16	0.1	0.04%
18	11.1	3.2%
20	0.02	0.004%
21	3.7	1.1%
24	8.0	2.3%
27	1.2	0.3%
30	3.3	1.0%
33	0.6	0.2%
36	2.7	0.8%
42	0.5	0.2%
54	1.6	0.5%
60	0.4	0.1%
Total	**342.6**	

Table 5.2 summarizes the existing gravity mains by material. As shown in Table 5.2, the majority of the City's gravity pipelines are made of PVC. Approximately 70 percent of the gravity pipelines are PVC, 14 percent are vitrified clay pipe, and 1 percent are fiberglass pipe. Approximately 14 percent of the City's sewer gravity pipes do not have a pipe material classification in the City's GIS.

Although only a small percentage of the total pipe in the collection system, Orangeburg pipe is known to have a substandard quality, so these pipes should be considered for replacement.

Table 5.2 Gravity Pipeline Summary by Material

Pipe Material	Length (mi)	Percent of System
PVC	238.6	69.63%
Vitrified Clay	48.9	14.28%
Fiberglass	3.7	1.09%
Ductile Iron	2.3	0.66%
Orangeburg	1.0	0.30%
HOBAS	1.0	0.28%
Cement	0.6	0.17%
Precast	0.4	0.12%
Asbestos	0.1	0.017%
Unknown	46.0	13.44%
Total	**342.6**	



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Figure 5.2 City of Goodyear 2024 Wastewater Collection System

5.2.3 Lift Stations

Most of the City's wastewater collection system flow by gravity directly to a water reclamation facility. However, lift stations are required to pump flow from lands with a lower elevation. The City currently operates and maintains 18 wastewater lift stations and 28 miles of force mains with diameters of 4 inches up to 12 inches in diameter, as shown in Figure 5.2. Table 5.3 summarizes lift station information, including the location, number of pumps, pump capacity, and discharge force main size.

Table 5.3 Lift Station Facilities

Lift Station Name	Location	Number of Pumps	Pump Capacity (gpm)	Lift Station Firm Capacity (gpm)	Force Main Diameter (in)
Goodyear WRF Service Area					
Bio Flora	Bio Flora Fertilizer Division	2	250	250	6
Del Camino	Country Aire Apartments	2	250	250	8
Las Brisas	181st Ave and Broadway Rd	3	400	800	8, 10
Palm Valley	Celebrate Life Way by the Cancer Treatment Centers of America	2	330	330	8
Rubbermaid	MC 85 and Cotton Ln	2	220	220	4
Wells Fargo	Van Buren St and Central Ave	2	250	250	6
Lakin	Buckeye Canal Rd and Cotton Ln	2	710	710	10, 12
Section 23	Indian School Rd and Cotton Ln	2	475	475	6, 6
Sparrow	145th Ave and McDowell Rd	2	300	300	4
Corgett WRF Service Area					
Irene	Santa Irene De and Wilson Ln	2	150	150	4
Lost	Northwest of Allen St and 168th Dr	2	710	710	8, 8
Ricardo	San Ricardo Dr	2	150	150	4
A1	Sophie Ln and 166th Dr	2	150	150	4
Star Tower	Hillside Dr and Estrella Pkwy	2	200	200	4
Sendero(1)	Sendero Dr and Ardmore Rd	2	150	150	4
Arroyo Ranch(1)	Cheyenne Rd and 188th Ave	2	150	150	4
Rainbow Valley WRF Service Area					
Canta Mia	Rainbow Valley WRF	2	250	250	4
Lum	Westar Dr and Sunward Dr	2	475	475	8
Rainbow Valley	Westar Dr and Lavender Ln	3	1,050	2,100	12, 12

Notes:
gpm - gallons per minute
(1) Sendero and Arroyo Ranch Lift Stations are planned for construction in the end of 2024 and 2025.

5.3 Wastewater Collection System Hydraulic Model Update

A sewer collection system model is a numerical representation of the actual sewer system. Sewer models can assess the conveyance capacity for a collection system and can also be used to perform "what if" scenarios to assess the impacts of future developments and land use changes. The City's collection system hydraulic model was updated using GIS data and operational information provided by the City. A model of the City's wastewater collection system was available from a previous study using the Innovyze InfoSewer hydraulic modeling software. However, this modeling software is being discontinued. Therefore, the model was converted from InfoSewer to the AquaTwin sewer modeling software by Aquanuity, which has similar features to the Infosewer software.

5.3.1 Wastewater Flow Allocation

Determining the magnitude and location of dry weather wastewater flows generated by a municipality is an important component of the master planning and modeling process. Good estimates of wastewater flows are important to evaluate existing and future wastewater collection system capacity requirements. Baseline wastewater flows were allocated in the hydraulic model at a parcel level based on the land use type. Parcels were linked to the closest gravity main, and flows were allocated to the upstream manhole of the gravity main. Chapter 2 describes the process used to calculate flows based on unit flows and developed status. The allocated flows were adjusted, as necessary, during the calibration process to closely match the actual measured flows recorded during the flow monitoring period for each flow monitoring basin.

5.4 Hydraulic Model Calibration

Hydraulic model calibration is a crucial component of the hydraulic modeling effort. Calibrating the model is used to get the model to provide a reasonable correlation between the model and flow data collected during the flow monitoring program. This section summarizes the methodology employed to calibrate the City's wastewater collection system hydraulic model and presents a summary of the calibration results.

5.4.1 Field Test

A wastewater system field test was conducted to record flow at 16 locations throughout the collection system starting June 11, 2023, and ending on June 23, 2023. The locations selected for flow monitoring were mostly the same sites metered in the 2016 IWMP that were performed by Carollo. The field test locations and collection basins are shown in Figure 5.3.

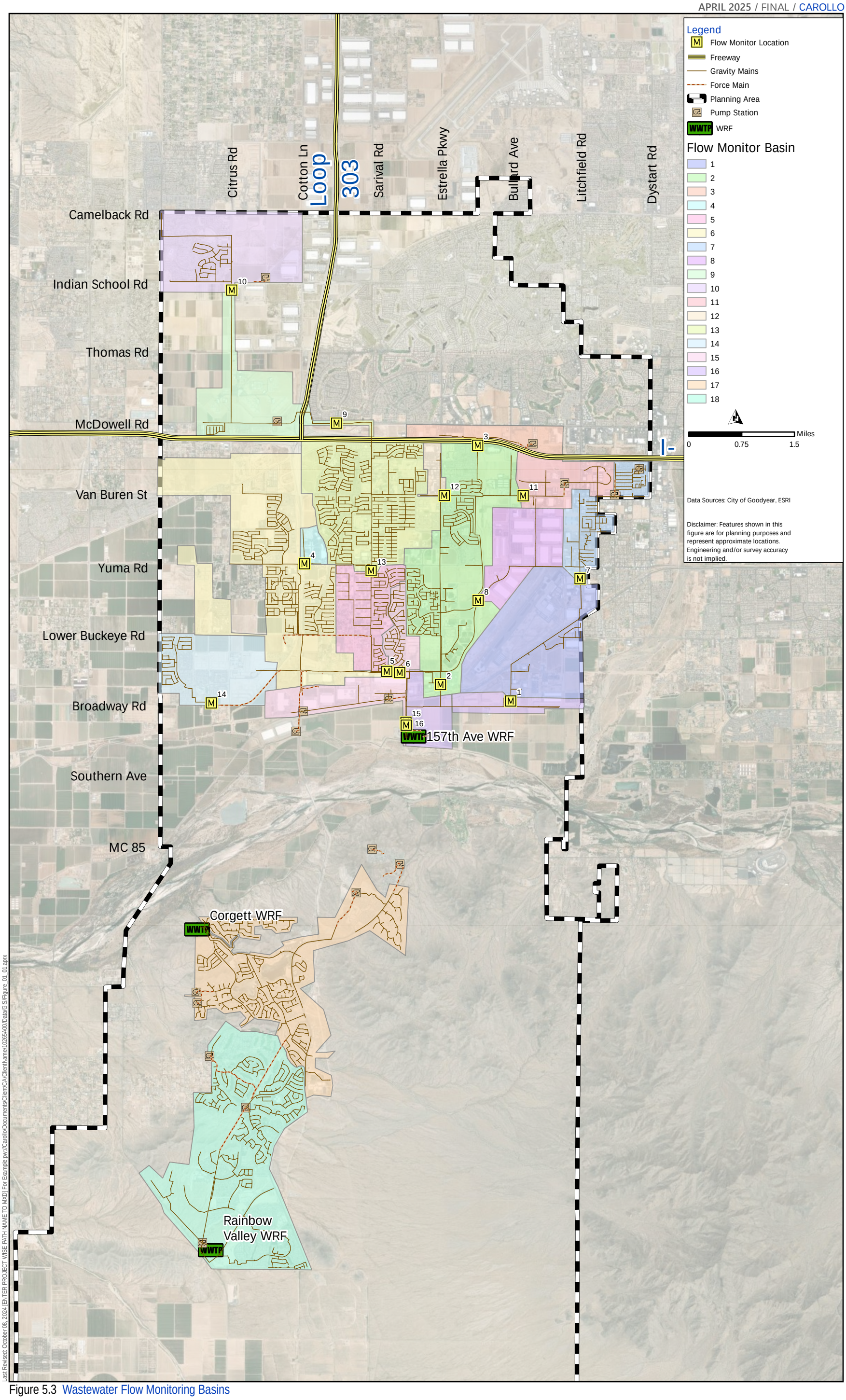


Figure 5.3 Wastewater Flow Monitoring Basins

Table 5.4 lists the manholes where the flowmeters were installed. Figure 5.4 provides a schematic representation of the flowmeters and collection basins upstream of each temporary flowmeter. The purpose of the schematic is to show the connectivity between each basin and flowmeter. The temporary flowmeter locations are all in the 157th Avenue WRF service area.

The flowmeters at the inlets to the Corgett and Rainbow Valley WRF were used to measure flow going into the facility. Each flowmeter has a flowmeter basin number that shows the tributary area of flow that directly goes to the flowmeter. The flow measurements from the flowmeters correspond to the flow from the upstream basin plus any additional flow measured from upstream flowmeters. Data from the flow monitoring program was used to develop diurnal flows and calibrate the hydraulic model.

Table 5.4 Wastewater Flowmeter Locations

Flowmeter Number	Location	Pipe Diameter (in.)	Manhole ID
FM-1	S Bullard Ave between Broadway Rd and W La Estrella	12	MH88C-301
FM-2	4040 Estrella Pkwy	12	MH86D-405
FM-3	Bullard Wash, south of the I-10	15	MH57B-304
FM-4	Northeast of Cotton Ln and Yuma Rd	15	MH64D-403
FM-5	W Elwood St, west of 161st Ave	30	MH86A-301
FM-6	W Elwood St, between 161st Ave and Estrella Pkwy	54	MH86C-202
FM-7	Litchfield Rd, east of Lancaster Arms store	12	MH79A-101
FM-8	S Bullard Ave, north of Durango St alignment	24	MH77B-308
FM-9	North of W McDowell Rd and west of Clubhouse Dr	24	MH45C-401
FM-10	N Citrus Rd, south of Indian School Rd	18	MH34A-102
FM-11	W Van Buren St between Bullard Ave and 145th Ave	18	MH58C-302
FM-12	W Van Buren St, east of Estrella Pkwy	12	MH67A-104
FM-13	Sarival Ave, south of Yuma Rd	24	MH75B-203
FM-14	Las Brisas Lift Station	8	MH83D-301
FM-15	North of 157th Ave WRF	24	MH96B-107
FM-16	North of 157th Ave WRF	36	MH96B-303

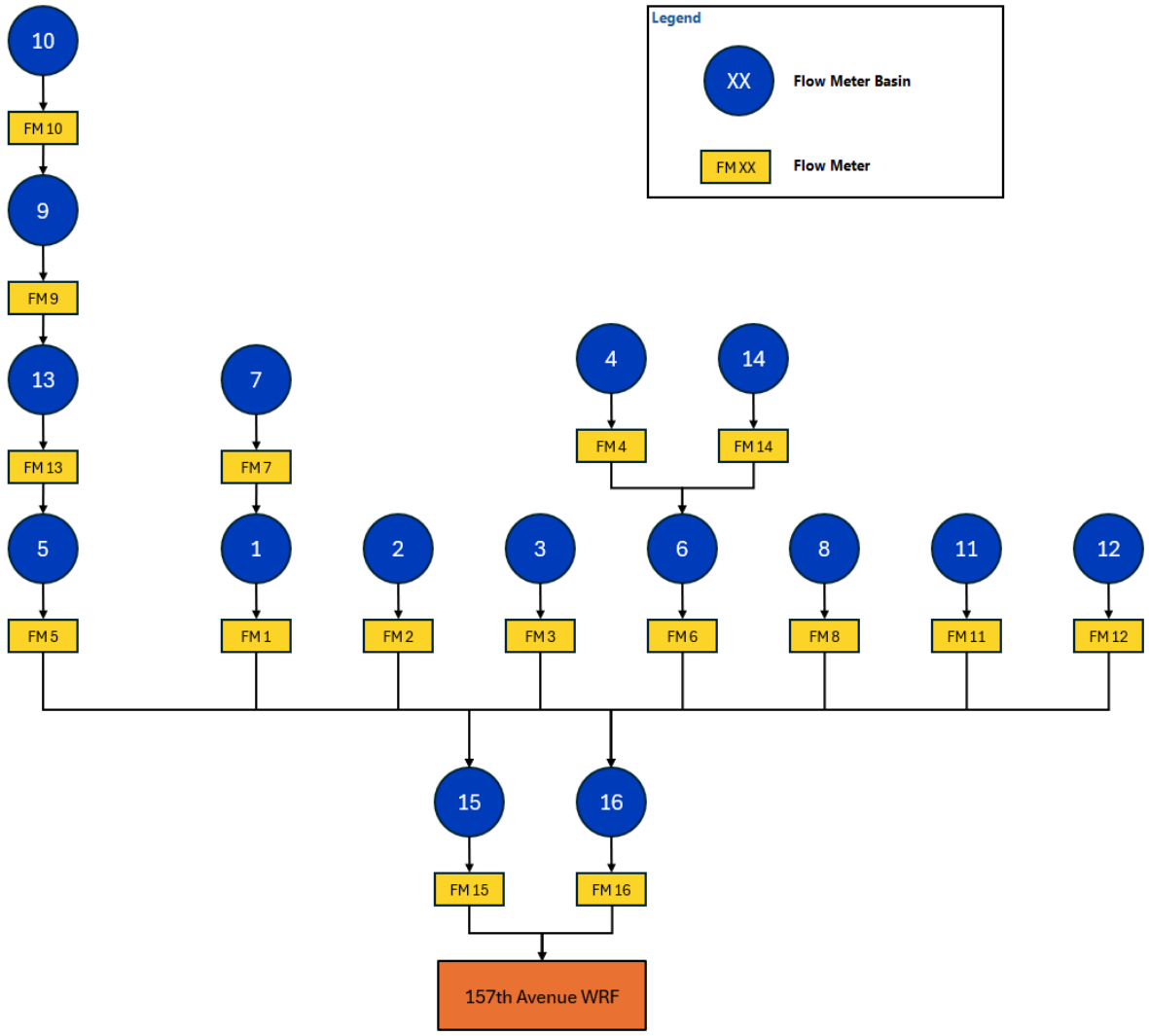


Figure 5.4 Collection Basin and Flowmeter Schematic

5.4.2 Flow Monitoring Program Results

Table 5.5 summarizes the results of the flow monitoring program, including average and maximum flows and depths observed during the flow monitoring program. The flows listed in Table 5.5 are the flows measured at each flowmeter, including flow from any upstream flowmeters. As shown in Table 5.5, the maximum to average flow peaking factors ranges from 1.52 to 4.26. There was no rain during the flow monitoring period. Table 5.5 also lists the maximum depth (d) recorded during the flow monitoring program and the pipe diameter (D). Site 13 had the highest d/D ratio of 0.62. There was no surcharging at any of the flow monitoring sites during the field test. Appendix 5A contains the flow monitoring test results.

Table 5.5 Flow Monitoring Results Summary

Flowmeter Site	Average Flow (mgd)	Maximum Flow (mgd)	Maximum to Average Flow Peaking Factor	Pipe Diameter, D (in)	Maximum Depth, d, (in)	Maximum d/D Ratio
Site 1	0.21	0.44	2.14	12	4.83	0.40
Site 2	0.12	0.24	1.96	12	3.32	0.28
Site 3	0.11	0.46	4.26	15	4.76	0.32
Site 4	0.05	0.12	2.50	15	1.23	0.08
Site 5	1.83	3.99	2.18	30	11.15	0.37
Site 6	1.92	4.75	2.47	54	11.14	0.21
Site 7	0.13	0.50	3.92	12	6.15	0.51
Site 8	0.51	0.97	1.88	24	8.30	0.35
Site 9	0.46	0.72	1.58	24	5.80	0.24
Site 10	0.18	0.26	1.44	18	4.01	0.22
Site 11	0.29	0.52	1.79	18	5.28	0.29
Site 12	0.13	0.27	2.05	12	4.69	0.39
Site 13	1.79	4.04	2.25	24	14.90	0.62
Site 14	0.18	0.38	2.12	8	4.14	0.52
Site 15	2.13	3.24	1.52	24	12.36	0.52
Site 16	3.42	6.17	1.80	36	16.29	0.45

5.4.3 Calibration Results

After reviewing the data from the flow monitoring period, Thursday June 15th was selected as the calibration day because the data for each site on this day appeared reasonable, and the evening peak was also consistently higher than other days. The model is only calibrated for dry weather flow (DWF) as there was no rainfall during the flow monitoring period. Goodyear is in a desert where wet weather flow (WWF) occurs infrequently, and storm inflows are small and last only a short time.

Flow calibration was completed for each of the flow monitoring sites. The flows were calibrated for Thursday June 15, 2023, because on average, the highest flows occurred on that day and not on the weekend. Figure 5.5 is an example graph comparing the modeled and measured flow at Site 14. Appendix 5B contains calibration graphs for each flowmeter site. Flows from flowmeter sites 15 and 16 were combined for calibration because the flowmeter basins for these sites were connected upstream of the meters. The calibrated modeled flows are within 10 percent of the measured average flows at each of the flow monitoring sites, which is a good calibration.

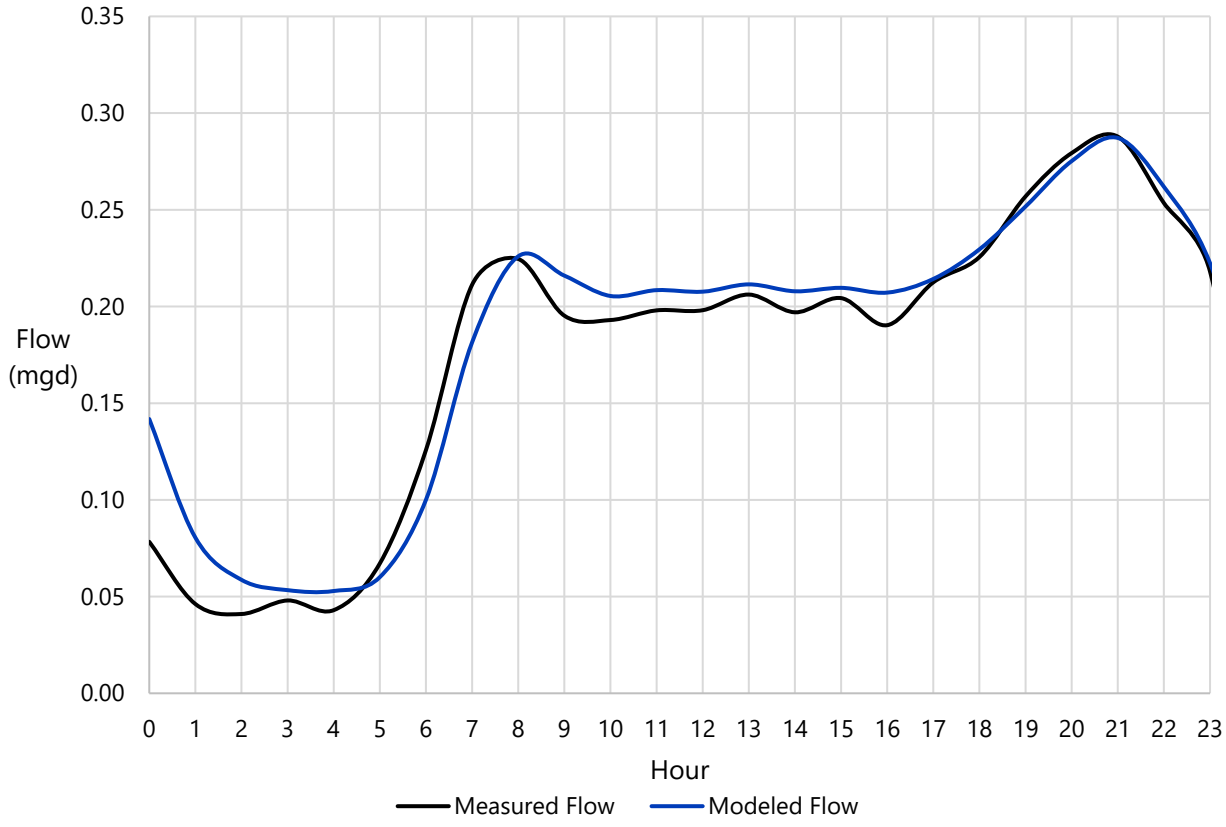


Figure 5.5 Flow Calibration Graph for Site 14

5.5 Wastewater System Performance Criteria

Performance criteria are the standards of measurement used to evaluate the adequacy of wastewater collection system infrastructure including pipe (gravity and force main), lift station, and treatment facility capacity. Performance criteria are based on legal requirements and engineering best practices. Design criteria are also included in this section for reference and is applied to future infrastructure.

The wastewater design standards and performance criteria are described below.

5.5.1 Gravity Pipe Capacity

Sewer capacity is dependent on factors, including pipe roughness, maximum allowable flow depth, limiting velocity, and pipe slope.

Gravity sewers should be designed and constructed to have:

- A minimum of 4 feet of cover or sufficient depth to serve the ultimate drainage area.
- A target depth of 7 feet of cover for new sewer main installation.

Gravity sewers and force mains must have a minimum separation of 6 feet from potable water mains and reclaimed water mains unless they are provided with increased protection in accordance with A.A.C. R-18-5, Article 4 and A.A.C. R-18-9, Article 6.

Manholes with sewers intersecting at greater than or equal to 90-degree angles should provide 0.2 foot of invert drop across the manhole. Other manholes should provide a minimum 0.1 foot of invert drop.

5.5.1.1 Pipe Roughness

The Manning's coefficient 'n' is a friction coefficient that varies with respect to pipe material, size of pipe, depth of flow, smoothness of joints, root intrusion, and other factors.

For planning purposes, and 'n' value of 0.013 is used. The A.A.C. requires the use of a Manning's coefficient of 0.013 for the design of new sewers (A.A.C. R18-9-E301(D)(2)(e)).

5.5.1.2 Flow Depth

When designing sewers, it is common practice to establish a flow depth capacity criterion to evaluate pipe capacity. This criterion is expressed as a ratio of maximum depth of flow (d) to pipe diameter (D). Design d/D ratios typically range from 0.5 to 0.75, with the lower value typically used for smaller pipes that may experience flow peaks greater than planned or may experience blockages from debris.

The City's performance criteria from the 2016 IWMP state that new sewer pipes should be sized for a d/D ratio of 0.6 during peak hour dry weather flow, and 0.65 for peak hour, wet weather flows. Existing sewers will be evaluated based on a flow depth criterion of 0.9 at peak hour, wet weather flows because there are fewer unknowns, especially in established, built out areas, and because there is no need to replace or provide relief for an existing sewer until flows are at the maximum design capacity of the pipe.

The hydraulic criteria used for sizing new, proposed gravity sewers will have a greater factor of safety than the criteria used to evaluate the capacity of the existing system due to the uncertainties in making projections of future flows. This approach allows full use of existing sewer capacity and avoids upsizing sewer prematurely.

5.5.1.3 Velocity and Minimum Slope

To minimize the settlement of solids in the flow and promote scouring, it is standard design practice to specify that a minimum velocity of 2 ft/sec be maintained when the pipe is flowing half full. The City of Goodyear requires 2.5 ft/sec to be maintained in gravity sewers that are 8 inches in diameter or smaller. At these velocities, sewer flows will typically provide self-cleaning for the pipe. Due to the hydraulics of a circular pipe, the velocity for half-full pipe flow approaches the velocity of nearly full pipe flow.

Table 5.6 lists the minimum slopes for maintaining self-cleaning velocities at half or full flow with d/D = 0.5 or 1.0, which provides the most conservative minimum slope. The minimum slope listed in the table is 0.0008 foot per foot (ft/ft), which is the minimum practical slope for gravity construction.

Table 5.6 Recommended Minimum Slopes for Circular Gravity Sewers

Pipe Diameter (in.)	Minimum Slope (ft/ft)	Pipe Capacity	
		(gpm)	(mgd)
8	0.0052	392	0.56
10	0.0025	493	0.71
12	0.0020	717	1.03
15	0.0015	1,126	1.62
18	0.0012	1,638	2.36
21	0.0010	2,255	3.25
24	0.0008	5,221	7.52
≥36	0.0008	8,490	12.23

Notes:
(1) Slopes are calculated using Manning's Equation for full pipe flow (d/D = 1.0) with a minimum velocity of 2 ft/sec for all diameters except for 8 inches for which the minimum slope corresponds to 2.5 ft/sec.
(2) Sewers larger than 24 inches should have a slope ≥0.0008.
(3) Pipe Capacity based on full pipe flow or d/D = 1.0.

Greater slopes are desirable if they are compatible with existing topography and infrastructure, provided that the wastewater velocity does not exceed the maximum velocity criteria of 10 ft/sec established in A.A.C. R-18-9-E301(D)(2)(f) unless scour resistant material is used. Velocities greater than 10 ft/sec may also result in turbulent flow conditions that contribute to odor problems.

5.5.1.4 Changes in Pipe Size

When a smaller sewer joins a larger sewer, the invert of the larger sewer will be lowered sufficiently to maintain the same energy gradient. Since GIS data is available for the City's existing sewer mains, this information will be used for the sewer inverts in the hydraulic model when available. For planning sewer pipes, sewer crowns were matched at manholes when a smaller sewer joins a larger one.

5.5.1.5 Manhole Spacing

Manholes are typically installed at grade changes, changes in sewer pipe sizes, alignment changes, and intersections with other sewer pipes. In addition, manholes should be located to facilitate sewer cleaning. The recommended maximum manhole spacing for different diameters of sewer pipe are listed in Table 5.7.

Table 5.7 Recommended Maximum Manhole Spacing

Sewer Pipe Diameter (in)	Maximum Manhole Spacing (ft)
10 in and less	400
12 in and larger	500

5.5.2 Lift Stations

Lift Stations should be sized for a "firm" capacity greater than the peak daily flow rate. Lift station firm capacity was compared to the peak hour dry weather inflow and sized to pump the maximum daily flow with the largest pump out of service.

Lift station wet well sizing takes into consideration the fill time, based on average flow, and the minimum pump cycle. The A.A.C. R-18-9-E301(D) requires that the minimum wet well volume in gallons be 1/4 of the product of the minimum pump cycle time, in minutes, and the total pump capacity, in gpm. The volume of the wet well should provide a retention period not to exceed 30 minutes of average daily design flow. In addition, regional lift stations should be provided with additional wet well capacity for redundancy. When selecting the minimum cycle time, the pump manufacturer's duty cycle recommendations shall be utilized. Starting and stopping more than seven times an hour for any one pump is not recommended.

5.5.3 Force Mains

The A.A.C. requires that new force mains be designed to maintain a minimum flow velocity of 3 ft/sec and a maximum flow velocity of 7 ft/sec (A.A.C. R-18-9-E301(D)(4)(a)). These velocity criteria promote scouring so that the solids deposited in the force main while the pumps are off will be transported downstream when the pumps are operating. Wastewater retention time in the pipeline should also be considered in sizing force mains to avoid excessive hydrogen sulfide generation. The City requires that force mains be sized for velocities between 2 and 6 ft/sec.

Manholes at the force mains discharge should be constructed with corrosion resistant coatings to prevent concrete corrosion due to sulfates. Force mains should be dropped into manholes to prevent raw sewage from splashing against the manhole walls and releasing odors.

A typical Hazen-Williams friction coefficient of 120 was used for force mains.

5.5.4 Water Reclamation Facilities

Maricopa County is responsible for enforcing state regulations associated with water quality related to water reclamation facilities. Water reclamation facility performance criteria requirements include the required design capacity of the treatment facility. When the average daily maximum month flow reaches 80 percent of the rated design capacity of a water reclamation facility, design for a facility expansion must be initiated. When the average daily maximum month flow reaches 90 percent of the rated design capacity, construction of the expansion needs to have commenced.

5.5.5 Performance Criteria Summary

Table 5.8 summarizes the performance criteria used to evaluate the collection system. Note Table 5.8 contains just the criteria that was used to evaluate the performance of the existing and proposed collection system.

Table 5.8 Performance Criteria

Category	Performance Criteria
Gravity Mains	
Maximum d/D	0.9 (Existing Sewers) 0.65 (Proposed/Future Sewers)
Minimum Velocity	2 ft/sec
Lift Stations	
Firm Capacity	≥ peak hour dry weather inflow
Force Main Velocity	3-7 ft/sec
Treatment Facilities	
Design Phase For An Expansion	80% of maximum monthly flow

5.6 Future Infrastructure

This section outlines planned facilities to serve future growth areas for development through 2040. The future facilities include gravity pipelines, lift stations, and force mains are shown in Figure 5.6. The future facilities include infrastructure that is in the City's capital improvement program and infrastructure that would be paid for by developers.

5.6.1 Water Planning Area 2

Multiple large high density residential developments are expected to start developing in the 157th WRF service area in the next fifteen years as shown in Figure 5.7. The increased flows from these residential developments were evaluated to evaluate collection system capacity.

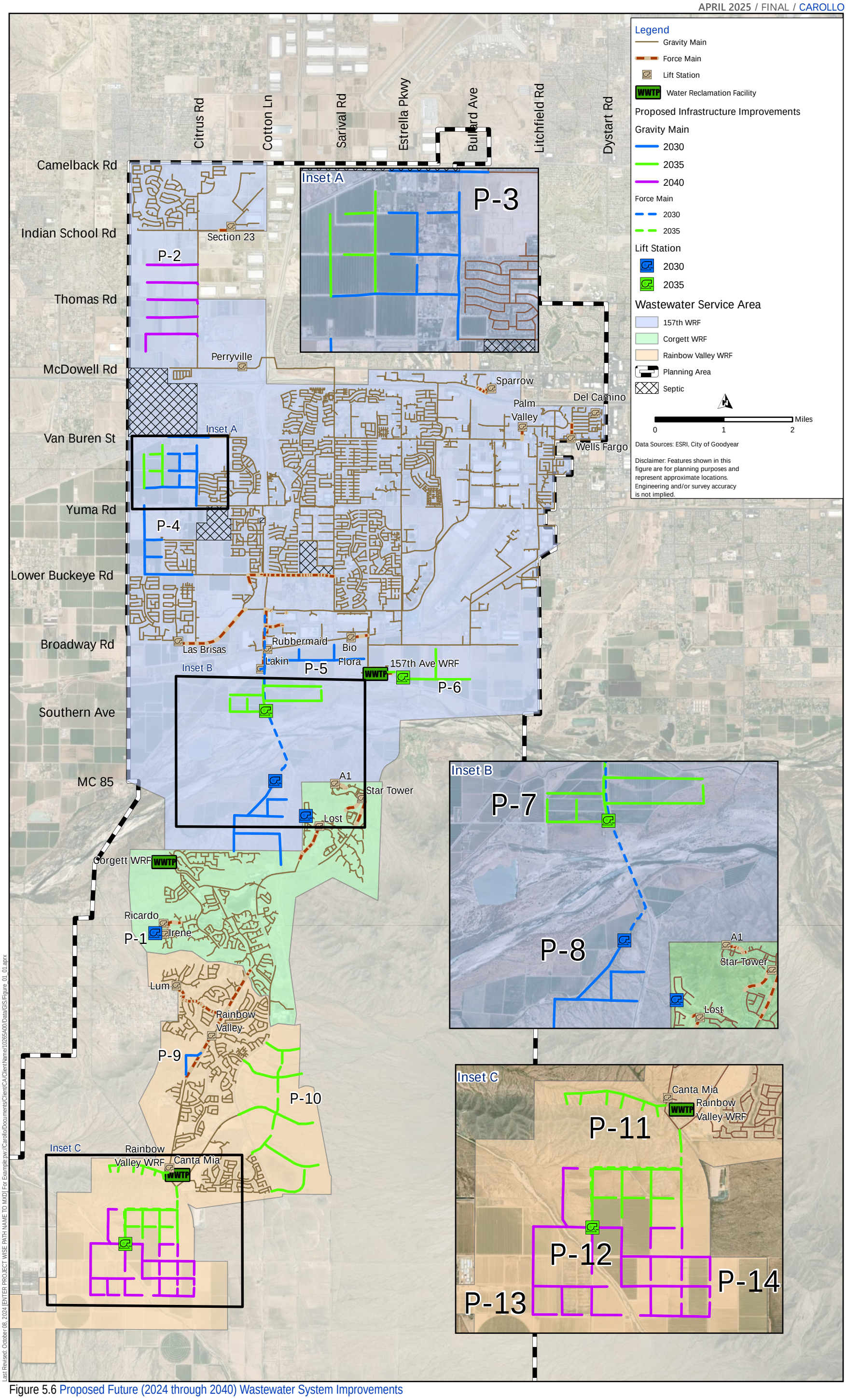
Lands generally referred to as West Goodyear are located west of Cotton Lane in WPA 2. These areas are expected to develop by 2040 and are therefore included in the capacity evaluation.

The southwest corner of WPA 2 is not projected to develop within the time frame of the master plan, so future wastewater infrastructure was not considered for this area.

5.6.2 Water Planning Areas 3 and 4

South of the Rainbow Valley WRF, the Terrasante, Estrella Highlands, and Rainbow Valley developments are expected to begin developing in the next fifteen years. The developments would require a lift station with a force main to deliver wastewater to the Rainbow Valley WRF. This lift station should be located where all three of the developments can use the lift station. The force main from this lift station would deliver wastewater directly to the Rainbow Valley WRF to avoid sending wastewater through the Canta Mia Lift Station which would require an expansion.

The King Ranch development resides south of the Gila River and is planned to be a part of the 157th WRF Service Area. This development is all residential zoning and is planned to be partially developed in the next fifteen years. A future lift station in the north section of King Ranch is planned to pump flow from the development to the 54-inch gravity main along Elwood Street.



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Figure 5.6 Proposed Future (2024 through 2040) Wastewater System Improvements

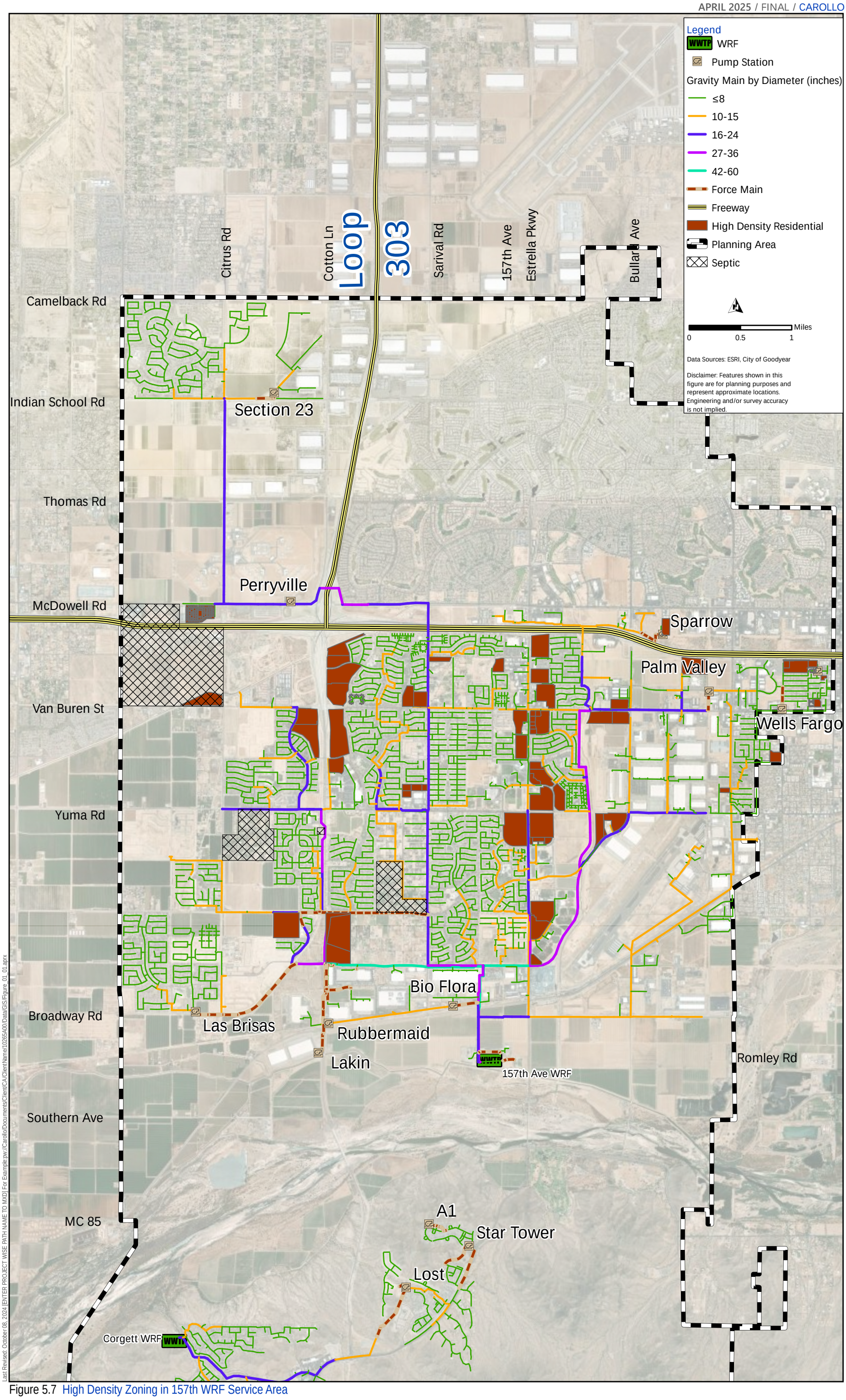


Figure 5.7 High Density Zoning in 157th WRF Service Area

5.7 Collection System Evaluation

A capacity analysis of the existing and future collection system was performed to determine if there are gravity mains or lift stations that do not have sufficient capacity. Sewers that lack sufficient capacity to convey peak flows can potentially cause sanitary sewer overflows (SSOs). The collection system was evaluated based on planning criteria listed in Table 5.8.

A global multiplier of 1.3 was applied to dry weather flows to simulate peak wet weather conditions. The 1.3 factor was used in the 2016 IWMP to simulate peak wet weather flow (PWWF) so the same method was used to estimate peak flows. Since wet weather flow events are rare and small, the 1.3 peaking factor provides a level of conservatism in the modeling analysis results.

In all collection system capacity evaluations, if the model predicts a pipe that is out of capacity, then the next step is to conduct flow monitoring at the location where the pipe capacity is predicted to be limited. Flow monitoring is a relatively inexpensive way to validate model results before investing in a pipe replacement project.

5.7.1 2023 Pipeline Capacity Evaluation

The 2023 wastewater collection system was evaluated using the same dry weather flows that were used for model calibration, multiplied by the peak wet weather flow multiplier of 1.3. The model predicted that the existing pipes in the City's collection system have sufficient capacity to convey wet weather flows. One pipe was predicted to be near capacity with a maximum d/D of 0.9. This pipe is located along West Auto Drive, downstream of the Wells Fargo Lift Station force main, as shown in Figure 5.8. Flows through the Wells Fargo lift station were recently routed through this pipe. Flow through the pipe is set by the Wells Fargo pump size, and there are plans to expand the lift station in 2025. The capacity expansion at the Wells Fargo Lift Station has not been determined and that may affect the recommended sizing of the gravity main expansion along West Auto Drive.

5.7.2 Future Pipeline Capacity Evaluation

A capacity analysis of the planned future collection system (2030, 2035, and 2040) was performed by applying the planned future wastewater flows in the model with the existing and planned future pipes that are anticipated in each future planning period. The flow projections were established for the MDAWS application where projected flows were calculated for 2028, 2033, and 2038 planning years. The purpose of this evaluation is to verify that planned future pipes are adequately sized and to determine if currently installed pipes are adequate to convey future flows.

Table 5.9 summarizes the flows for each of the planning periods by flow monitoring basin. There are several pipes where the estimated d/D exceeded 0.9 for 2030, 2035, and 2040 flow conditions as shown in Figure 5.8.

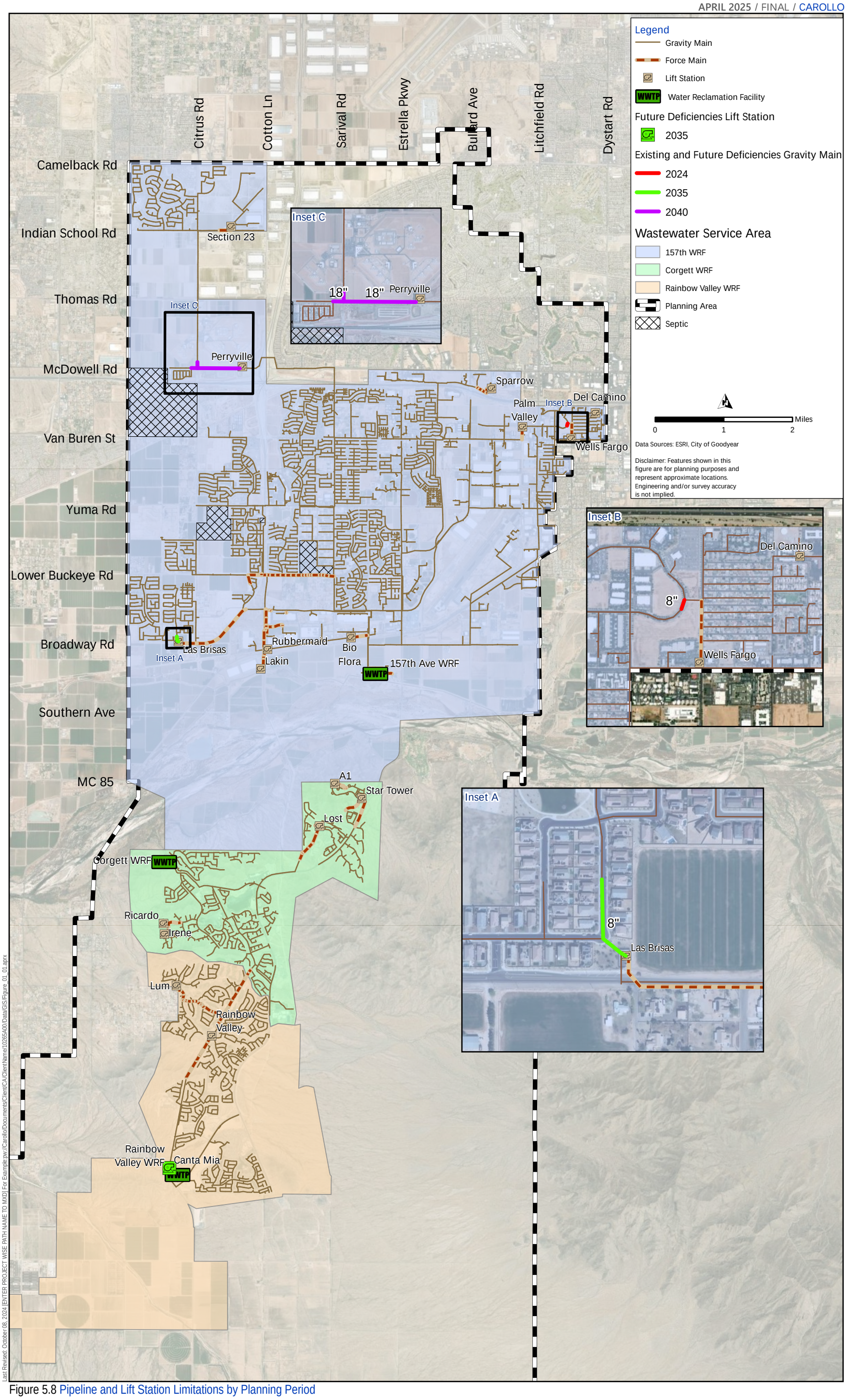
Table 5.9 Wastewater Flow Projections by Flowmeter Basin

Flow Monitoring Basin	Projected Wastewater Flow (mgd)			
	2023	2028	2033	2038
1	0.33	0.39	0.45	0.49
2	0.70	0.86	0.96	1.04
3	0.05	0.07	0.08	0.09
4	0.01	0.01	0.01	0.01
5	0.16	0.17	0.18	0.18
6	0.73	0.90	1.11	1.21
7	0.26	0.29	0.29	0.29
8	0.10	0.11	0.12	0.12
9	0.89	0.92	0.95	0.97
10	0.32	0.40	0.50	0.57
11	0.08	0.09	0.10	0.11
12	0.03	0.03	0.03	0.03
13	0.86	0.91	0.95	0.98
14	0.27	0.30	0.35	0.39
15	0.28	0.30	0.33	0.36
16	0.00	0.03	0.06	0.09
Corgett WRF	0.61	0.69	0.77	0.84
Rainbow Valley WRF	0.54	0.59	0.72	0.86
Outside the Flow Monitoring Basin Boundaries	0.01	0.25	0.68	1.32
Total	**6.23**	**7.31**	**8.64**	**9.95**

5.7.2.1 Capacity Evaluation Results

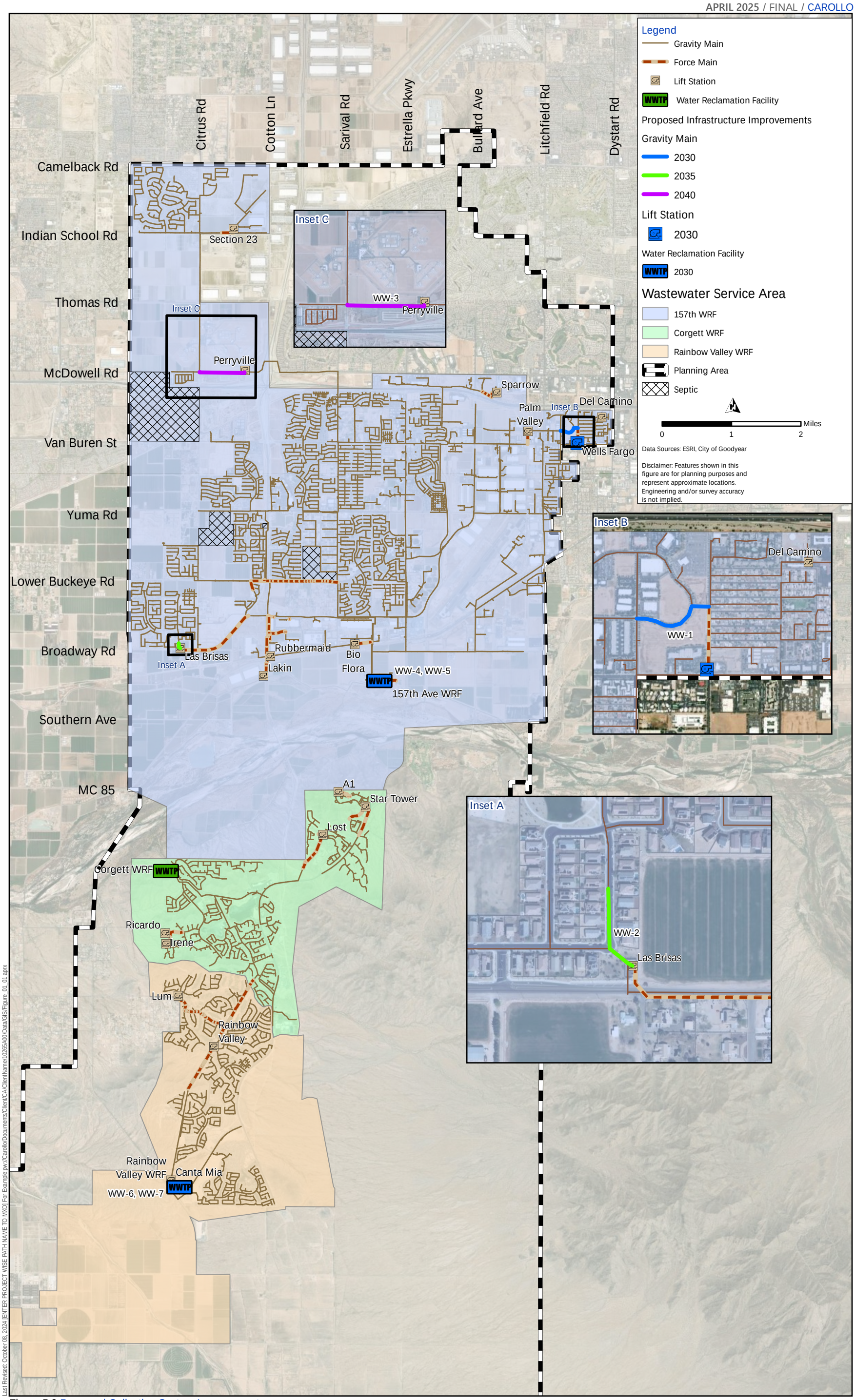
An 8-inch gravity main upstream of the Las Brisas Lift Station surcharges during the 2035 PWWF. Two 12-inch gravity mains connect to the surcharging pipeline from Broadway Road and Pueblo Avenue. The 8-inch pipeline appears to be a bottleneck because there is one 12-inch and one 8-inch gravity main upstream of the pipe. The 8-inch pipe should be expanded to a 12-inch pipe to alleviate the surcharging upstream of the lift station.

The following sections summarize the proposed improvements to existing sewers that will serve future users. The future improvements for existing infrastructure are shown in Figure 5.9.



Last Revised: October 08, 2024 [ENTER PROJECT WISE PATH NAME TO MXD] For Example:pw://Carollo/Documents/Client/CA/ClientName/102654A00/Data/GIS/Figure_01_01.aprx

Figure 5.8 Pipeline and Lift Station Limitations by Planning Period



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Figure 5.9 Proposed Collection System Improvements

5.7.2.2 2030 Improvements

There are no 2030 improvements required for existing infrastructure.

5.7.2.3 2035 Improvements

The proposed improvements to address 2035 deficiencies are shown in Figure 5.7 in green and are summarized below.

- **WW-2 (181st Dr and Pueblo Ave) –** This project consists of replacing approximately 425 feet of 8-inch diameter pipeline at the intersection of 181st Drive and Pueblo Avenue upstream of the Las Brisas Lift Station. The existing pipeline surcharges under 2033 PWWF. To provide adequate capacity, the pipeline should be replaced with a 12-inch diameter pipeline.

5.7.2.4 2040 Improvements

The proposed improvements to address 2040 deficiencies are shown in Figure 5.9 in purple and are summarized below.

- **WW-3 (McDowell Rd between Citrus Rd and the Perryville lift station) –** This pipeline is predicted to be out of capacity by 2040. One option for providing sufficient capacity is to run a new sewer south along Citrus Rd. under the freeway and tie into planned future gravity sewers down to Yuma Road, where the wastewater would flow into the existing collection system. Alternatively, the 18-inch pipe along McDowell Road could be replaced with a larger pipe, or a parallel relief sewer could be constructed. The parallel relief sewer is the least expensive option, so this is the option that is being recommended. This project consists of constructing approximately 3,500 feet of 18-inch diameter pipeline at the intersection of McDowell Road and Citrus Road to run parallel to the existing 18-inch gravity main along McDowell Road.

5.7.3 Lift Station Capacity Analysis

The peak hour inflow for each planning period was compared to the existing lift station firm capacity. Table 5.10 summarizes the lift station capacity analysis and includes the existing firm capacity as well as the peak dry weather inflow and capacity surplus or deficit for each planning period. The lift station capacity deficiencies are shown in Figure 5.8 and are color coded based on the planning period the deficiency is triggered.

Table 5.10 Lift Station Capacity Analysis

Lift Station ID	Lift Station Name	Planning Period	Number of Pumps	Firm Capacity (gpm)	2024		2030		2035		2040	
					Peak Hour Inflow (gpm)	Surplus/ Deficit (gpm)	Peak Hour Inflow (gpm)	Surplus/ Deficit (gpm)	Peak Hour Inflow (gpm)	Surplus/ Deficit (gpm)	Peak Hour Inflow (gpm)	Surplus/ Deficit (gpm)
LS86-1	Bio Flora	Existing	2	250	157	93	229	21	242	8	239	11
LS59-2	Del Camino	Existing	2	250	11	239	17	233	17	233	17	233
LS83-1	Las Brisas	Existing	3	800	125	675	244	556	314	486	306	494
LS58-1	Palm Valley	Existing	2	330	162	168	244	86	242	88	286	44
LS95-1	Rubbermaid	Existing	2	220	47	173	55	165	57	163	58	162
LS59-1	Wells Fargo	Existing	2	250	102	148	172	78	172	78	224	26
LS94-1	Lakin	Existing	2	710	22	688	295	415	511	199	513	197
LS24-1	Section 23	Existing	2	475	4	471	25	450	48	427	54	421
LS58-1	Sparrow	Existing	2	300	0	300	6	294	11	289	10	290
LS134-2	Irene	Existing	2	150	10	140	18	132	21	129	24	126
LS116-1	Lost	Existing	2	710	153	557	370	340	449	261	457	253
LS134-1	Ricardo	Existing	2	150	2	148	4	146	5	145	6	144
LS116-2	A1	Existing	2	150	5	145	38	107	57	93	70	80
LS116-3	Star Tower	Existing	2	200	46	154	65	135	63	137	51	149
LS164-1	Canta Mia(2)	Existing	2	250	114	136	137	113	430	(180)	431	(181)
LS134-3	Lum	Existing	2	475	112	337	113	362	113	362	113	362
LS144-2	Rainbow Valley	Existing	3	2,100	1,080	1,020	1,080	1,020	1,080	1,020	738	1,362
STOR110-Future	Future Lift Station 1 on Southern Ave and Cotton Ln	2030	2	300	-	-	32	268	94	206	156	144
STOR112-Future	Future Lift Station 2 on Roeser Rd and Estrella Pkwy	2030	2	300	-	-	69	231	146	154	136	164
STOR122-Future	Future Lift Station 3 on MC 85 and Cotton Ln	2030	2	600	-	-	84	516	180	420	272	328
STOR124-Future	Future Lift Station 4 on Maplewood Rd and 187th Ave	2030	2	700	-	-	30	670	179	521	486	214

Notes:
(1) Perryville LS capacity was not evaluated.
(2) Canta Mia Lift Station is planned to be abandoned in the future and replaced with a gravity main to Rainbow Valley WRF.

5.7.4 Wastewater Treatment Capacity

The wastewater treatment facilities were evaluated against the projected wastewater flows presented in Chapter 2 to determine the need and timing for future wastewater treatment plant expansions. The City's WRF capacity is provided in terms of average day maximum monthly flows. The average day maximum monthly flows are assumed to be 15 percent more than the average daily flows.

5.7.4.1 157th Avenue WRF

The City is working on capacity improvements so that the 157th WRF can be permitted for 10 mgd by 2028. The 157th Avenue WRF has an existing capacity of 6.1 mgd. The facility is under construction to bring the capacity to 6.7 mgd by the fourth quarter of 2024. As shown in Figure 5.10, the design phase for an additional upgrade from 6.7 mgd to 9.5 is suggested in 2026. Another upgrade from 9. 5 to 12 mgd will be triggered in 2030.

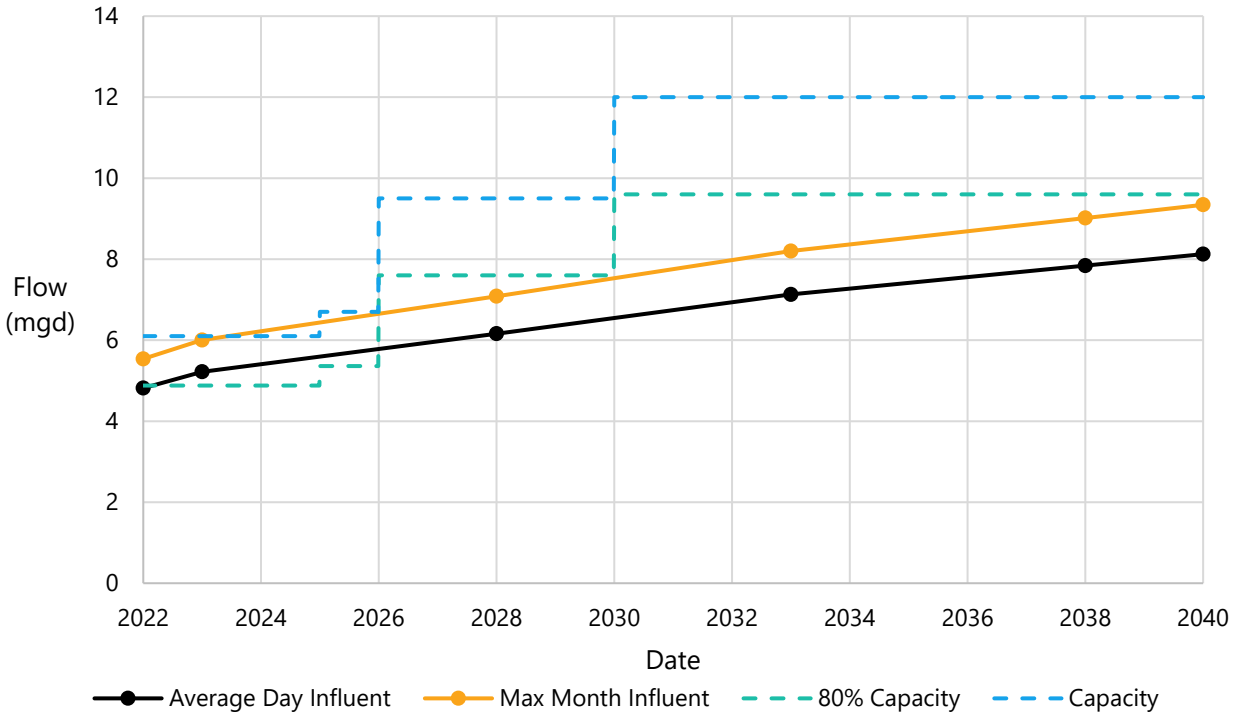


Figure 5.10 157th Avenue WRF Treatment Capacity

5.7.4.2 Corgett WRF

The Corgett WRF has an existing capacity of 0.8 mgd. As shown in Figure 5.11, the projected average day maximum monthly flow surpasses the 80 percent trigger expansion but there are no plans to connect future developments to Corgett. Therefore, there are also no plans for expansion.

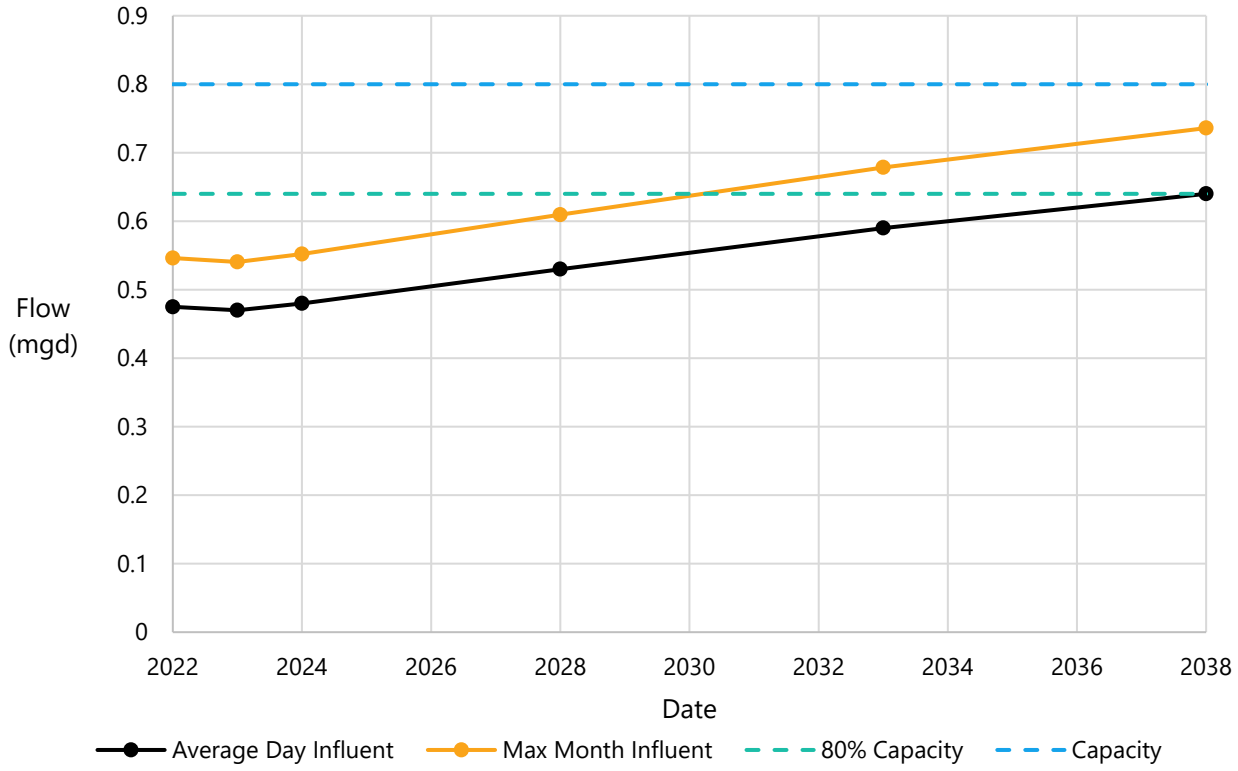


Figure 5.11 Corgett WRF Treatment Capacity

5.7.4.3 Rainbow Valley WRF

The Rainbow Valley WRF has an existing capacity of 0.75 mgd. The existing average day maximum monthly flow is above the 80 percent trigger capacity, so it is recommended for the treatment facility to be expanded as soon as possible. As shown in Figure 5.12, the Rainbow Valley maximum monthly flow has a projection based on the master plan flow projections and an adjusted maximum monthly flow to account for potential additional developments that may develop in Rainbow Valley based on recent information obtained from the development community. There is an expansion project planned to raise the capacity of the facility to 2.5 mgd by the end of 2026. The average day maximum monthly flow at the Rainbow Valley WRF approaches 80 percent of the design capacity by 2038, so a second expansion is recommended by 2038. The projected average day maximum monthly buildout flow is 9.7 mgd, so additional expansions would be needed to reach an ultimate capacity of 10 mgd.

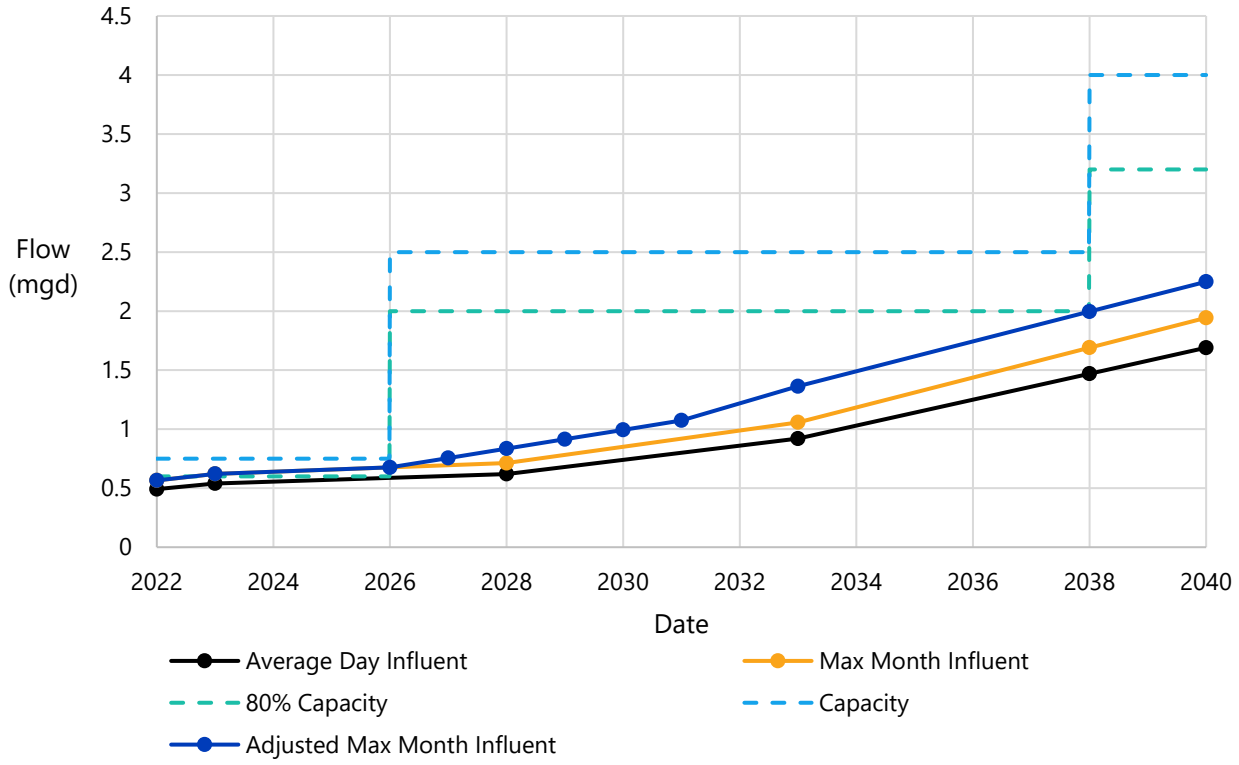


Figure 5.12 Rainbow Valley WRF Treatment Capacity

5.8 Wastewater System Capital Improvement Program

Based on the system evaluation and improvement projects identified in Section 5.7 and Section 5.8, the following projects have been identified and are described below.

5.8.1 City Funded Projects

The projects shown in Table 5.11 have been identified for the collection system and are described in more detail below.

5.8.2 Developer Funded Projects

The projects shown in Table 5.12 have been identified as projects to serve new growth areas in the collection system that would be paid for by developers. These projects are described in more detail below.

Table 5.11 City Funded Projects

Project #	Description	Justification	Location	Diameter/Size (in/mgd)	Length/Qty (ft/#)	Planning Period
WW-1	Expand gravity main along Auto Drive downstream of Wells Fargo Lift Station	To help prevent surcharging when the lift station is expanded	157th WRF Service Area	12	1,214	2030
WW-2	181st Dr and Pueblo Ave	Surcharging under 2033 PWWF	157th WRF Service Area	12	425	2035
WW-3	Construct parallel 18-inch gravity main along McDowell Rd from Citrus Rd	Surcharging under 2038 PWWF	157th WRF Service Area	3,500	18	2040
WW-4	Expand the 157th WRF from 6.7 mgd to 9.5 mgd	Required for increasing flows due to development	157th WRF Site	2.8	1	2030
WW-5	Expand the 157th WRF from 9.5 mgd to 12 mgd capacity	80% of 2028Treatment plant capacity is less than 2038 projected ADWF	157th WRF Service Area	2	1	2030
WW-6	Expand the Rainbow Valley WRF from 0.8 mgd to 2.5 mgd	Required for increasing flows due to development	Rainbow Valley WRF site	1.7	1	2030
WW-7	Expand the Rainbow Valley WRF from 2 mgd to 4 mgd	Required for increasing flows due to development	Rainbow Valley WRF site	2.0	1	2040

Table 5.12 Developer Funded Projects

Project #	Description	Justification	WRF Service Area	Diameter/Size (in/mgd)	Length/Qty (ft/gpm)	Planning Period
P-1	12-inch gravity main west of North Citrus Rd, along West Osborn Rd	Convey flows from future developments to collection system	157th WRF	12	3,925	2030
P-2	12-inch gravity main west of North Citrus Rd, along West Earll Dr	Convey flows from future developments to collection system	157th WRF	12	3,925	2030
P-3	12-inch gravity main from West of North Citrus Rd, along West Thomas Rd	Convey flows from future developments to collection system	157th WRF	12	3,925	2030
P-4	12-inch gravity main from West of North Citrus Rd, along West Virginia Ave	Convey flows from future developments to collection system	157th WRF	12	3,925	2030
P-5	12-inch gravity main from West of North Citrus Rd, along West Encanto Blvd and south along 185th Ave	Convey flows from future developments to collection system	157th WRF	12	5,320	2030
P-6	12-inch gravity main along West Van Buren St to Roosevelt Canal	Convey flows from future developments to collection system	157th WRF	12	3,113	2030
P-7	12-inch gravity main along South Citrus Rd from West Yuma Rd to West Adam St	Convey flows from future developments to collection system	157th WRF	12	4,623	2030
P-8	12-inch gravity main along West Hadley St from South Citrus Rd to South 185 Ave and along South 181st Ave from Lilac St to West Hadley St	Convey flows from future developments to collection system	157th WRF	12	4,970	2030
P-9	12-inch gravity main along West Harrison St from South Citrus Rd to 183rd Ave	Convey flows from future developments to collection system	157th WRF	12	2,162	2030
P-10	12-inch gravity main along South 181st Ave from West Harrison St to West Jefferson St and along West Jefferson St from 181st Ave to 183rd Ave	Convey flows from future developments to collection system	157th WRF	12	2,206	2030
P-11	12-inch gravity main along West Jefferson St from North Citrus Road to North 181st Ave	Convey flows from future developments to collection system	157th WRF	12	986	2030
P-12	12-inch gravity main along North 183rd Ave from West Hadley St to Adam St and along West Harrison St from 183rd Ave to 185th Ave	Convey flows from future developments to collection system	157th WRF	12	4,193	2030
P-13	12-inch gravity main along West Jefferson St from 183rd Ave to 185th Ave	Convey flows from future developments to collection system	157th WRF	12	944	2030

Project #	Description	Justification	WRF Service Area	Diameter/Size (in/mgd)	Length/Qty (ft/gpm)	Planning Period
P-14	12-inch gravity main along South 185th Ave from West Hadley St to West Jefferson St	Convey flows from future developments to collection system	157th WRF	12	2,585	2030
P-15	12-inch gravity main along West Lower Buckeye Rd from South Citrus Rd to South 185th Ave	Convey flows from future developments to collection system	157th WRF	12	3,652	2030
P-16	12-inch gravity main along South 185th Ave from West Lower Buckeye Rd to West Durango St	Convey flows from future developments to collection system	157th WRF	12	2,483	2030
P-17	12-inch gravity main along South 185th Ave from West Durango St to West Yuma Rd	Convey flows from future developments to collection system	157th WRF	12	2,642	2030
P-18	12-inch gravity main along West Watkins St and along West Durango St from South 185th Ave to 183rd Ave	Convey flows from future developments to collection system	157th WRF	12	2,644	2030
P-19	12-inch gravity main along Wier Ave from South Cotton Ln to 159th Ave	Convey flows from future developments to collection system	157th WRF	12	7,618	2030
P-20	12-inch gravity main along South Cotton Ln from Wier Ave to Lakin Park Lift Station	Convey flows from future developments to collection system	157th WRF	12	960	2030
P-21	12-inch gravity main along 167th Ave and Sarival Ave from Wier Ave to County Road 85	Convey flows from future developments to collection system	157th WRF	12	1,995	2030
P-22	12-inch gravity main along Roeser Rd from South Bullard Ave to South Estrella Pkwy	Convey flows from future developments to collection system	157th WRF	12	5,303	2030
P-23	12-inch gravity main along 150th Dr from West Broadway Rd to Roeser Rd	Convey flows from future developments to collection system	157th WRF	12	2,311	2030
P-24	12-inch gravity main along West Southern Ave from South 175th Ave to South Cotton Ln	Convey flows from future developments to collection system	157th WRF	12	2,743	2030
P-25	600 gpm Lift Station on Southern Ave and Cotton Ln	Convey flows from future developments to collection system	157th WRF	0.86	1	2030
P-26	8-inch force main from future Lift Station on Southern Ave and Cotton Ln to Lakin Lift Station	Convey flows from future developments to collection system	157th WRF	8	3,430	2030
P-27	600 gpm Lift Station on Estrella Pkwy and Roeser Rd	Convey flows from future developments to collection system	157th WRF	0.86	1	2030
P-28	8-inch force main from future Lift Station on Estrella Pkwy to Romley Rd	Convey flows from future developments to collection system	157th WRF	8	1,930	2030

Project #	Description	Justification	WRF Service Area	Diameter/Size (in/mgd)	Length/Qty (ft/gpm)	Planning Period
P-29	12-inch gravity main along South 175th Ave from West Sunland Ave to West Southern Ave	Convey flows from future developments to collection system	157th WRF	12	1,001	2030
P-30	12-inch gravity main along South 173rd Ave from West Sunland Ave to West Southern Ave	Convey flows from future developments to collection system	157th WRF	12	1,001	2030
P-31	12-inch gravity main along West Sunland Ave from South 175th Ave to South Cotton Ln	Convey flows from future developments to collection system	157th WRF	12	2,532	2030
P-32	12-inch gravity main along Chambers St from 164th Dr to South Cotton Ln	Convey flows from future developments to collection system	157th WRF	12	4,458	2030
P-33	12-inch gravity main along West Hidalgo Ave from 164th Dr to South Cotton Ln and along 164th Dr from West Hidalgo Ave to Chambers St	Convey flows from future developments to collection system	157th WRF	12	5,231	2030
P-34	12-inch gravity main along West Euclid Ave from 174th Dr to South Cotton Ln	Convey flows from future developments to collection system	157th WRF	12	3,510	2030
P-35	12-inch gravity main along South Cotton Ln from South Estrella Pkwy to West Euclid Ave	Convey flows from future developments to collection system	157th WRF	12	2,380	2030
P-36	12-inch gravity main along 174th Dr from West Paseo Way to West Magdalena Ln	Convey flows from future developments to collection system	157th WRF	12	2,751	2030
P-37	12-inch gravity main along West Magdalena Ln from 174th Dr to South Cotton Ln	Convey flows from future developments to collection system	157th WRF	12	3,710	2030
P-38	900 gpm Lift Station in King Ranch 1,500 ft west of Cotton Ln and 4,100 ft south of Gila River	Convey flows from future developments to collection system	157th WRF	1.3	1	2030
P-39	12-inch force main from future King Ranch Lift Station to South Cotton Ln and Dunlap Rd	Convey flows from future developments to collection system	157th WRF	12	13,800	2030
P-40	12-inch gravity main from West Magdalena Ln to the proposed lift station in King Ranch	Convey flows from future developments to collection system	157th WRF	12	1,300	2030
P-41	12-inch gravity main from South Cotton Ln to the proposed lift station in King Ranch	Convey flows from future developments to collection system	157th WRF	12	1,482	2030
P-42	8-inch gravity main along 184th Ln to West Cassia Way and connect to the gravity main parallel to the Rainbow Valley LS force main	Convey flows from future developments to collection system	Rainbow Valley WRF	8	2,689	2030

Project #	Description	Justification	WRF Service Area	Diameter/Size (in/mgd)	Length/Qty (ft/gpm)	Planning Period
P-43	12-inch gravity main along South 176th Ave from South Estrella Pkwy to Sarival Rd	Convey flows from future developments to collection system	Rainbow Valley WRF	12	3,131	2030
P-44	12-inch gravity main along West Calistoga Dr from South Estrella Pkwy to Sarival Rd	Convey flows from future developments to collection system	Rainbow Valley WRF	12	4,987	2030
P-45	12-inch gravity main along West Willis Rd from South Estrella Pkwy to Sarival Rd	Convey flows from future developments to collection system	Rainbow Valley WRF	12	6,140	2030
P-46	12-inch gravity main along West Tanglewood Dr from South Estrella Pkwy to Sarival Rd	Convey flows from future developments to collection system	Rainbow Valley WRF	12	5,957	2030
P-47	12-inch gravity main along West Cedarwood Ln from South Estrella Pkwy to Sarival Rd	Convey flows from future developments to collection system	Rainbow Valley WRF	12	3,962	2030
P-48	12-inch gravity main along Pecos Rd west of South Rainbow Valley Rd to the RV WRF	Convey flows from future developments to collection system	Rainbow Valley WRF	12	4,558	2030
P-49	12-inch gravity main a quarter mile north of Willis Rd from 189th Ave to 181st Ave and from 181st Ave to South Rainbow Valley Rd	Convey flows from future developments to collection system	Rainbow Valley WRF	12	7,090	2030
P-50	12-inch gravity main along 189th Ave from a quarter mile north of Willis Rd to Maplewood Rd and from 189th Ave to 187th Ave along Maplewood Rd	Convey flows from future developments to collection system	Rainbow Valley WRF	12	3,832	2030
P-51	12-inch gravity main along Willis Rd from 185th Ave to 187th Ave and along 187th Ave from Willis Rd to a quarter mile north	Convey flows from future developments to collection system	Rainbow Valley WRF	12	2,360	2030
P-52	12-inch gravity main along 185th Ave from Willis Rd to a quarter mile north	Convey flows from future developments to collection system	Rainbow Valley WRF	12	1,320	2030
P-53	1,050 gpm Lift Station on 187th Ave and Maplewood Rd	Convey flows from future developments to collection system	Rainbow Valley WRF	1.5	1	2030
P-54	8-inch force main from future Lift Station on 187th Ave and Maplewood Rd to Rainbow Valley Rd and Willis Rd	Convey flows from future developments to collection system	Rainbow Valley WRF	12	7,450	2030
P-55	12-inch gravity main along 181st Ave from Maplewood Rd to a quarter mile north of Willis Rd	Convey flows from future developments to collection system	Rainbow Valley WRF	12	2,640	2035
P-56	12-inch gravity main along 183rd Ave from Maplewood Rd to a quarter mile north of Willis Rd	Convey flows from future developments to collection system	Rainbow Valley WRF	12	2,640	2035

Project #	Description	Justification	WRF Service Area	Diameter/Size (in/mgd)	Length/Qty (ft/gpm)	Planning Period
P-57	12-inch gravity main along Maplewood Rd from 181st Ave to 183rd Ave	Convey flows from future developments to collection system	Rainbow Valley WRF	12	1,070	2035
P-58	12-inch gravity main along Willis Rd from 181st Ave to 183rd Ave	Convey flows from future developments to collection system	Rainbow Valley WRF	12	1,070	2035
P-59	12-inch gravity main along Willis Rd from 183rd Ave to 185th Ave and along 185th Ave from Maplewood Rd to Willis Rd	Convey flows from future developments to collection system	Rainbow Valley WRF	12	1,880	2035
P-60	12-inch gravity main along 187th Ave from Maplewood Rd to Willis Rd	Convey flows from future developments to collection system	Rainbow Valley WRF	12	810	2030
P-61	12-inch gravity main along Maplewood Rd from 191st Ave to 189th Ave	Convey flows from future developments to collection system	Rainbow Valley WRF	12	1,522	2035
P-62	12-inch gravity main along 191st Ave from Ryan St to Maplewood Rd	Convey flows from future developments to collection system	Rainbow Valley WRF	12	3,960	2035
P-63	12-inch gravity main along Superstition Dr from 187th Ave to 191st Ave	Convey flows from future developments to collection system	Rainbow Valley WRF	12	2,645	2035
P-64	12-inch gravity main along Ryan St from 189th Ave to 191st Ave	Convey flows from future developments to collection system	Rainbow Valley WRF	12	1,072	2035
P-65	12-inch gravity main along Ryan St from 187th Ave to 189th Ave and along 189th Ave from Ryan St to Superstition Dr	Convey flows from future developments to collection system	Rainbow Valley WRF	12	2,162	2035
P-66	12-inch gravity main along 187th Ave from Ryan St to Superstition Dr	Convey flows from future developments to collection system	Rainbow Valley WRF	12	1,267	2035
P-67	12-inch gravity main along 187th Ave from Maplewood Rd toward Superstition Dr	Convey flows from future developments to collection system	Rainbow Valley WRF	12	2,066	2035
P-68	12-inch gravity main along Maplewood Rd from 185th Ave to 187th Ave	Convey flows from future developments to collection system	Rainbow Valley WRF	12	1,336	2035
P-69	12-inch gravity main along 183rd Ave from Germann Rd to Maplewood Rd	Convey flows from future developments to collection system	Rainbow Valley WRF	12	894	2040
P-70	12-inch gravity main along 181st Ave from Germann Rd to Maplewood Rd	Convey flows from future developments to collection system	Rainbow Valley WRF	12	894	2040

Project #	Description	Justification	WRF Service Area	Diameter/Size (in/mgd)	Length/Qty (ft/gpm)	Planning Period
P-71	12-inch gravity main along Superstition Dr from 185th Ave to 187th Ave	Convey flows from future developments to collection system	Rainbow Valley WRF	12	700	2040
P-72	12-inch gravity main along Ryan St from 185th Ave to 187th Ave	Convey flows from future developments to collection system	Rainbow Valley WRF	12	1,336	2040
P-73	12-inch gravity main along 185th Ave from Superstition Dr to Maplewood Rd	Convey flows from future developments to collection system	Rainbow Valley WRF	12	2,641	2040
P-74	12-inch gravity main along Germann Rd from Rainbow Valley Rd to 185th Ave	Convey flows from future developments to collection system	Rainbow Valley WRF	12	4,008	2040
P-75	12-inch gravity main along Superstition Dr from Rainbow Valley Rd to 185th Ave	Convey flows from future developments to collection system	Rainbow Valley WRF	12	4,008	2040
P-76	12-inch gravity main along Ryan St from Rainbow Valley Rd to Waterman Wash	Convey flows from future developments to collection system	Rainbow Valley WRF	12	3,110	2040
P-77	12-inch gravity main along 183rd Ave from Superstition Dr to Germann Rd	Convey flows from future developments to collection system	Rainbow Valley WRF	12	1,040	2040
P-78	12-inch gravity main along 181st Ave from Superstition Dr to Germann Rd	Convey flows from future developments to collection system	Rainbow Valley WRF	12	1,040	2040
P-79	12-inch gravity main along Rainbow Valley Rd from Superstition Dr to Germann Rd	Convey flows from future developments to collection system	Rainbow Valley WRF	12	1,040	2040
P-80	12-inch gravity main along 183rd Ave from Ryan St to Superstition Dr	Convey flows from future developments to collection system	Rainbow Valley WRF	12	1,327	2040
P-81	12-inch gravity main along 181st Ave from 500 ft north of Ryan St to Ryan St	Convey flows from future developments to collection system	Rainbow Valley WRF	12	500	2040
P-82	12-inch gravity main along 181st Ave from 500 ft south of Superstition Dr to Superstition Dr	Convey flows from future developments to collection system	Rainbow Valley WRF	12	500	2040
P-83	12-inch gravity main along Rainbow Valley Rd from 500 ft north of Ryan St to Ryan St	Convey flows from future developments to collection system	Rainbow Valley WRF	12	500	2040
P-84	12-inch gravity main along Rainbow Valley Rd from 500 ft south of Superstition Dr to Superstition Dr	Convey flows from future developments to collection system	Rainbow Valley WRF	12	500	2040

5.9 Conclusion and Recommendations

1. Most of the City's 2024 wastewater system has sufficient capacity to convey existing and future peak wet weather flows through 2030. However, the gravity main downstream of Wells Fargo Lift Station along West Auto Drive should be monitored when the lift station is expanded to see if it should be upsized to a 12-inch diameter pipeline.
2. The City should increase the 157th WRF design capacity from 6.1 mgd to 9.5 mgd in the 2030 planning period and then to 12 mgd in the 2040 planning period so the average day maximum monthly flows do not exceed 80 percent of the treatment plant capacity.
3. The City should increase the Rainbow Valley WRF design capacity from 0.75 mgd to 2.5 mgd in the 2030 planning period so the average day maximum monthly flows do not exceed 80 percent of the treatment plant capacity.
4. The gravity main upstream of Las Brisas Lift Station should be upsized in the 2035 planning period to a 12-inch diameter pipeline to avoid surcharging.
5. A parallel 18-inch gravity main along McDowell Road to the Perryville lift station should be constructed in the 2040 planning period as additional developments are constructed in the northwest along Citrus Road to prevent surcharging in the existing 18-inch gravity main.
6. The City should increase the Rainbow Valley WRF from 2 mgd to 4 mgd in the 2040 planning period so the projected average day maximum monthly flows do not exceed 80 percent of the treatment plant capacity.

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CHAPTER 6 RECLAIMED WATER MASTER PLAN

6.1 Introduction

Chapter 6 presents the reclaimed water infrastructure evaluation for the City as part of the 2024 IWMP. This chapter presents the reclaimed water infrastructure implementation of the reclaimed water resource strategies that are in Chapter 3 of this IWMP. The purpose of the reclaimed water master plan is to identify the infrastructure needs and timing required for the City to beneficially use reclaimed water as the City grows. Reclaimed water management strategies are discussed in Chapter 3 and form the basis for the infrastructure recommendations presented here.

The reclaimed water system will adapt over time as the City grows and is able to fund capital improvements that increase the utilization of reclaimed water and use the water for the highest and best use for the City's benefit. The path for obtaining full utilization of this reclaimed water source is presented in this chapter.

This chapter of the master plan contains the following sections:

- 2024 Reclaimed Water System.
- Reclaimed Water Flows.
- Reclaimed Water Management Strategies.
- Reclaimed Water Infrastructure Plan.
- Reclaimed Water Projects.
- Recommendations.

6.2 2024 Reclaimed Water Systems

The City manages water resources in the City's five WPAs, named WPA 1, WPA 2, WPA3, WPA 4, and WPA 5. Each water planning area is served by one or more existing or planned WRFs that produce reclaimed water that can be used within the planning area where it was generated. Reclaimed water facilities in each planning area are discussed below. Figure 6.1 presents the City's reclaimed water system in each water planning area along with interconnected reclaimed water systems for Liberty Utilities and Estrella.

6.2.1 Water Planning Areas 1 and 2

The 157th Avenue WRF has a current capacity of 6.1 mgd with an expansion to 6.7 mgd in 2024 and a planned expansion to 9.95 mgd by 2028. The plant is located along Buckeye Canal Road and Estrella Parkway in WPA 2. The plant currently collects wastewater from WPA 1 and WPA 2. In the future, the plant will serve King Ranch located in WPA 3 so that the City can obtain use of the King Ranch reclaimed water at the 157th WRF.

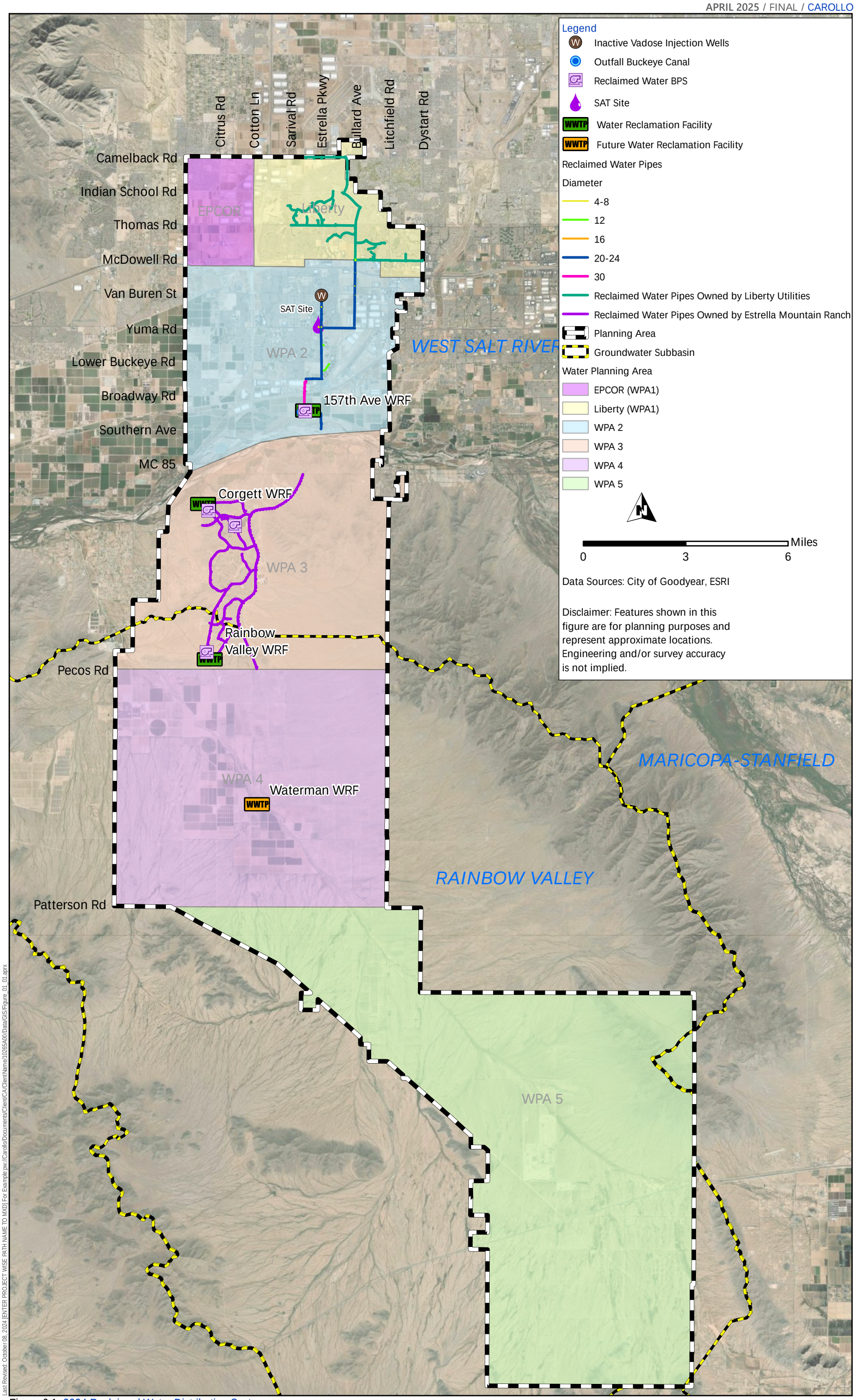
The 157th WRF pump station has a planned firm capacity of 13 mgd at buildout of the service area. Reclaimed water from the 157th WRF is pumped into a transmission main system that can transport the reclaimed water to the Goodyear ballpark, the SAT site, Buckeye Canal, and to a connection with the Liberty Utilities reclaimed water distribution network. The reclaimed water transmission system consists of approximately 9 miles of reclaimed water mains ranging in size from 6 to 30 inches in diameter. A summary of the City's reclaimed water mains is shown in Table 6.1.

Table 6.1 Reclaimed Water Mains

Diameter (in)	Length (miles)
≤ 6-inch	0.5
8-inch	0.1
12-inch	0.5
16-inch	0.3
20-inch	2.1
24-inch	4.7
30-inch	0.9
Total	**9.1**

Reclaimed water is currently recharged in the spreading basins of the SAT site. In the past, reclaimed water has been delivered to the Goodyear ballparks and to vadose zone wells that are no longer in service. Any left-over reclaimed water is sent to the BWCDD canal. The City does not obtain groundwater credits for reclaimed water discharged to the canal because the canal is not permitted as a groundwater savings facility.

In the past, Liberty Utilities used to deliver its excess reclaimed water to Goodyear until a recharge basin was constructed within its service area. The City has no plans to use the connection between Goodyear and Liberty Utilities to deliver or receive additional reclaimed water, so the Liberty Utilities reclaimed system will not be considered as an option for additional resource capacity. Liberty Utilities is not likely to need the connection now that they have a recharge facility.



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Figure 6.1 2024 Reclaimed Water Distribution System

6.2.2 Water Planning Area 3

The Corgett WRF has a treatment capacity of 0.8 mgd and is located northwest of the Estrella community west of San Gabriel Drive.

The Corgett WRF reclaimed water pump station has a total capacity of 3.2 mgd and a firm capacity of 1.6 mgd. Reclaimed water is discharged through a privately owned reclaimed water distribution system to the Estrella lakes to irrigate turf in the Estrella development. The Estrella development takes possession of all the reclaimed water from the Corgett WRF, so the City does not benefit from reclaimed water from this plant. If there is more reclaimed water at the plant than can be used by Estrella, the excess water is discharged to the Corgett wash. The Corgett wash is not permitted as a managed recharge facility so reclaimed water credits cannot be obtained for water discharged to the Corgett wash.

The Rainbow Valley WRF has a treatment capacity of 0.75 mgd and is located on the northeast corner of Rainbow Valley Road and Willis Road intersection in the Estrella Community.

The Rainbow Valley WRF reclaimed water pump station has a total capacity of 3.3 mgd and a firm capacity of 1.7 mgd. The treatment plant serves Estrella and Canta Mia developments in WPA 3 and is planned to serve future developments in WPA 3 and WPA 4. Reclaimed water is discharged through a privately owned reclaimed water distribution system owned by the Estrella and Canta Mia developments to irrigate turf in the and the Canta Mia lakes. The portion of reclaimed water created by this plant that is not used by Estrella and Canta Mia is currently discharged to a nearby wash that is not permitted as a managed recharge facility, but in the future the City can construct a recharge facility to recharge this reclaimed water and obtain groundwater credits.

6.2.3 Water Planning Area 4

The Rainbow Valley WRF is located north of the border of WPA 4 and is planned to serve developments in WPA 4 including Terrasante, Rainbow Valley, and Estrella Highlands.

The future Waterman Wash WRF is located near the center of WPA 4 and is planned to serve development in WPA 4 that is not served by the Rainbow Valley WRF. There are no plans for development in the Waterman Wash WRF service area within the planning periods of this IWMP.

6.2.4 Water Planning Area 5

WPA 5 is not planned for development within the planning periods of this master plan and will likely be served by a private utility so reclaimed water infrastructure has not been planned in WPA 5 in this IWMP.

6.3 Reclaimed Water Flows

6.3.1 Reclaimed Water Production

The City's reclaimed water supply is primarily generated at the 157th Avenue WRF. Based on the data for 2023, the total reclaimed water volume at the facility was 5,799 ac-ft. This is equivalent to an annual average flow of 5.18 mgd. Corgett and Rainbow Valley produced approximately 500 and 580 ac-ft of reclaimed water respectively, in 2023. Table 6.2 summarizes the historical, average annual reclaimed water flow for the WRFs in Goodyear from 2019 through 2023.

Table 6.2 Historical Reclaimed Water Production

Water Reclamation Facility	Historical Reclaimed Water Flow (mgd)				
	2019	2020	2021	2022	2023
157th Avenue	3.83	4.54	4.80	4.81	5.18
Corgett	0.41	0.45	0.48	0.51	0.45
Rainbow Valley	0.36	0.41	0.46	0.47	0.52
Total	**4.60**	**5.40**	**5.74**	**5.79**	**6.15**

Table 6.3 summarizes the historical, average monthly reclaimed water production, and the average monthly flow rates to recharge and irrigation delivery points. Based on 2023 data, most of the reclaimed water produced by the 157th Avenue WRF is sent to the BWCDD Canal where the City is not receiving a groundwater storage credit. In 2023, 1,937 AFY was sent to the BWCDD Canal.

In WPA 3, the reclaimed water produced by Corgett and Rainbow Valley WRFs are mostly used for turf irrigation and the lakes at Estrella, with very little being sent to washes. Figure 6.2 and Figure 6.3 present the 2023 reclaimed water deliveries by planning area.

Table 6.3 2023 Average Monthly Reclaimed Water Deliveries

Month	157th Avenue		Corgett		Rainbow Valley		
	Discharge to BWCDD (mgd)	Discharge to SAT Site (mgd)	Discharge to Corgett Wash (mgd)	Discharge to Estrella Lakes (mgd)	Discharge to Estrella (mgd)	Discharge to Canta Mia (mgd)	Discharge to Wash (mgd)
January	3.91	0.66	0.00	0.54	0.19	0.09	0.27
February	4.08	0.61	0.04	0.56	0.41	0.02	0.12
March	3.70	0.81	0.01	0.56	0.41	0.17	0.00
April	2.99	1.92	0.00	0.56	0.42	0.14	0.00
May	3.95	1.11	0.00	0.47	0.43	0.09	0.00
June	3.37	2.00	0.00	0.36	0.36	0.11	0.00
July	3.23	2.40	0.00	0.35	0.36	0.09	0.00
August	3.01	2.86	0.00	0.37	0.35	0.12	0.00
September	2.44	3.16	0.00	0.38	0.31	0.16	0.00
October	2.63	2.74	0.00	0.39	0.33	0.17	0.00
November	5.06	0.09	0.00	0.42	0.36	0.19	0.00
December	2.45	2.42	0.00	0.41	0.37	0.19	0.00
Average	**3.40**	**1.73**	**0.00**	**0.45**	**0.36**	**0.13**	**0.03**

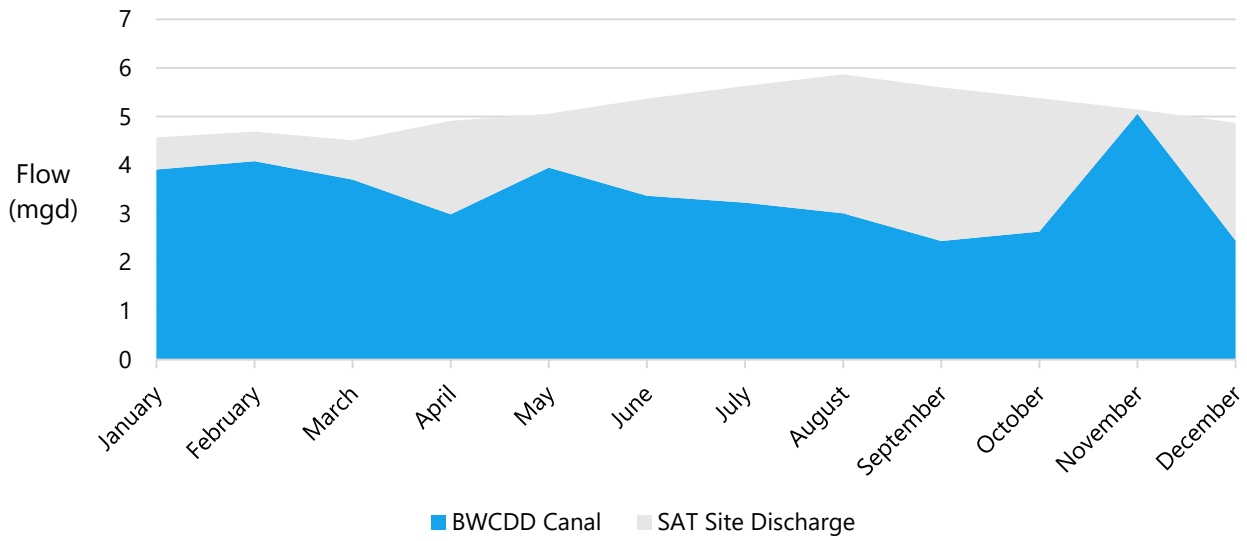


Figure 6.2 2023 Reclaimed Water Deliveries in WPA 2

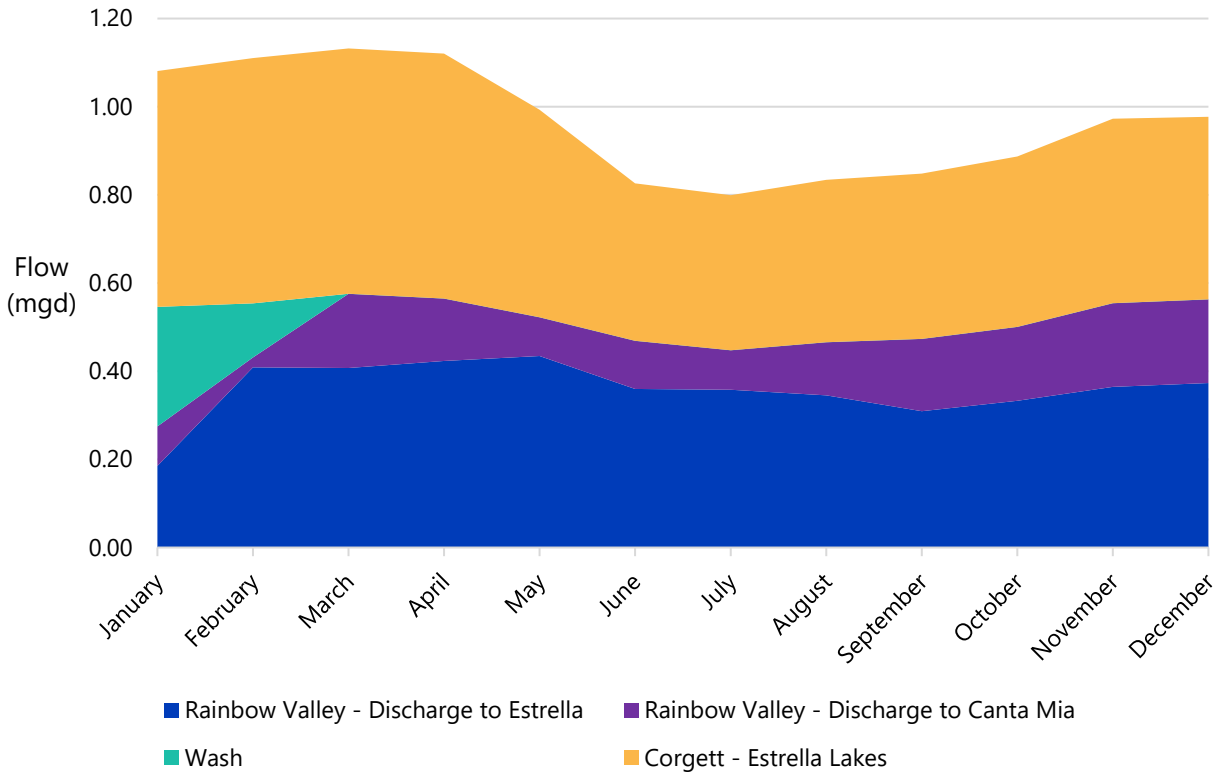


Figure 6.3 2023 Reclaimed Water Deliveries in WPA 3

6.3.2 Projected Reclaimed Water Flows

The reclaimed water flow projections described in Chapter 2 are presented in Table 6.4. These flows are used to plan the reclaimed water that can be beneficially used, and to size infrastructure. The flow projections in Chapter 2 were calculated for three five-year planning periods to align with the MDAWS renewal over a fifteen-year time period (2028, 2033, 2038). The infrastructure plan is scoped for the 2030, 2035, and 2040 planning periods. Flow projections used to calculate the MDAWS are used for the infrastructure recommendations, and the planning periods where infrastructure recommendations are placed are set to provide the capacity needed for the five-year infrastructure planning periods.

Table 6.4 Reclaimed Water Flow Projections

WRF	Projected Reclaimed Water Flow (mgd)			
	2023	2028	2033	2038
157th Avenue	5.11	5.72	6.63	7.29
Corgett	0.46	0.49	0.55	0.60
Rainbow Valley	0.53	0.58	0.86	1.36
Total	**6.1**	**6.8**	**8.0**	**9.3**

6.4 Reclaimed Water Management Strategies

The objective of reclaimed water systems and reclaimed water management is to accomplish the following:

- Maximize the value of reclaimed water as a water resource, whether for long-term storage credits or direct use.
- Find the highest and best use for the reclaimed water.
- Implement reclaimed water utilization alternatives that provide the best value.

The following reclaimed water management strategies are potentially viable in Goodyear, and are listed in order by increasing relative cost:

1. **Irrigation –** Reclaimed water used for irrigation is a viable reclaimed water management strategy as long as the reclaimed water use offsets potable water use and does not increase total water consumption by irrigating lands that would not otherwise be irrigated. To make the best use of reclaimed water for irrigation, an aquifer storage facility is also needed to take water when not needed for irrigation, and to provide water for irrigation when reclaimed water supplies are not sufficient.
2. **Exchange Reclaimed Water for Surface Water –** The City could implement an exchange agreement with the BWCDD to deliver reclaimed water in exchange for surface water to beneficially use the water in the City's portfolio.
3. **Managed recharge facilities –** Managed recharge facilities are usually natural systems such as stream beds and require limited engineering to design, which typically includes only a turnout structure and may include temporary levees to slow water flows in the stream bed to enhance infiltration.

4. **Constructed recharge facilities –** Spreading basins are constructed recharge facilities consisting of engineered basins that have been excavated, shored, and planned in a way for operators to control flow to one or more basins. Water can be delivered to basins that go through wet and dry cycles to dry out the basin to perform the maintenance required to maintain percolation rates. The long-term feasibility of surface recharge is largely determined by hydrogeologic conditions and the ability of the soil to continuously percolate water. Site specific recharge rates need to be developed using site specific hydrogeologic studies and soil testing.
5. **Aquifer storage and recovery (ASR) wells –** ASR wells are typically designed like a water production well with depths between 500 and 2500 feet below land surface (bls). Water recharged through an ASR well enters the aquifer and can be recovered later through the same well as a water source. The bi-directional flow of an ASR well allows cycling that helps to avoid clogging.
6. **Direct potable reuse (DPR) –** DPR requires an advanced treatment facility to treat the reclaimed water to a potable standard. This treatment often includes a reverse osmosis treatment process that creates a brine stream that needs to be managed. DPR is the most expensive option for utilizing reclaimed water, but it also provides the greatest flexibility for use of the water and does not depend on aquifer conditions which are not always favorable for aquifer storage and recovery.

6.5 Reclaimed Water Infrastructure Plan

6.5.1 Reclaimed Water System Performance Criteria

The City's reclaimed water system infrastructure recommended in the 2024 IWMP is sized to provide acceptable levels of performance and reliability.

Performance criteria focuses primarily on sizing the reclaimed water infrastructure to provide sufficient capacity and reliability to take reclaimed water from the WRFs and deliver it to customers or to recharge sites. Reclaimed water infrastructure should satisfy the following criteria:

1. **Pump stations –** The firm capacity (largest pump out of service) of the pump stations in the reclaimed water system needs to be able to pump the peak hour flows with the largest pump in the station out of service.
2. **Recharge basins –** When used along with irrigation, recharge facilities need to be capable of recharging water produced by the WRFs for time periods up to a month when winter storms eliminate the need for outdoor irrigation. The total recharge flow rate capacity in each basin should equal the total reclaimed water flow to the basin plus 50 percent so basins can be out of service for maintenance.
3. **ASR wells –** ASR wells should have a capacity that is 20 percent higher than the required maximum recharge flow rate or have one extra ASR well, whichever is greater, for mechanical redundancy and for well redevelopment.
4. **Distribution pipe velocity –** Pipe velocities should not exceed 7 ft/sec when delivering peak hour flows.

6.5.2 Water Planning Areas 1 and 2 Reclaimed Water Strategy

The following strategies are recommended to maximize the benefit of reclaimed water to the City. Multiple infrastructure strategies are used where less expensive strategies are implemented first to satisfy the water resource strategies outlined in Chapter 3.

1. **Maximize utilization of the SAT site –** The SAT site has a capacity of 8,960 AFY and a total permitted underground storage capacity of 6,570 AFY. The 2023 reclaimed flow data shows that 1,950 AFY was discharged to the SAT. site, which is only 30 percent of the site's permitted recharge capacity. The remaining reclaimed flow produced from 157th WRF in 2023 was discharged to the BWCDD canal. Future reclaimed water should be sent to the SAT site to obtain groundwater recharge credits up to the capacity of the facility. The SAT site recharge permit expires in 2040, and permit renewal is recommended because the SAT site is the least expensive way to constructively use the reclaimed water resource.

   To increase flow into the SAT site, the pipe between the reclaimed water transmission main and the SAT site needs to be upsized. The pipes into the SAT site have a diameter of 8 inches. A 16-inch main would be large enough to deliver a flow equal to the permitted capacity of the SAT site. This new main to the SAT site is relatively inexpensive and should be constructed as soon as practical to obtain the full benefit of this site. The SAT site can recharge most of the reclaimed water that is currently produced at the157th Avenue WRF.

2. **Construct ASR wells –** The City should construct ASR wells along or near the reclaimed water transmission mains in WPA 2 to increase the recharge capacity to fully use the available reclaimed water, and to recharge the additional reclaimed water that will be available due to growth through 2040. The wells would be constructed to provide extra capacity to defer the need for a DPR facility beyond 2040. Where possible, the ASR wells should be located within a mile of potable wells so that ADWR will give full credit for the water being recharged. The former vadose well locations may be appropriate sites for ASR wells, and the City should also consider locations that are within a mile of potable production wells. Other entities have applied for aquifer storage facilities in the West Salt River Valley aquifer, so a groundwater study will be needed to determine how much reclaimed water can be recharged using the ASR wells. The allowable recharge volume will dictate how much ASR well recharge capacity can be constructed.

3. **Implement DPR –** A DPR facility would treat the reclaimed water to a potable standard once the aquifer storage and recovery alternatives have been fully developed. In 2019, the ADEQ proposed revisions to the A.A.C. removing the prohibition of reclaimed water being used for human consumption. This decision, in addition to other changes to the A.A.C. that were subsequently approved, means that a DPR site can be permitted. However, DPR is an expensive solution so the City will want to develop less expensive solutions first.

The costs and benefits of DPR for the City depends on many factors that should be studied, including:

- The City's water demand projections and physical water supplies in the City's water resource portfolio.
- Long-term aquifer recharge and recovery capacity, which could dictate how long the City's storage and recovery strategy is viable.
- Wastewater quality and treatment needed to produce potable water.
- The cost of building, operating, and maintaining an advanced water treatment facility (AWTF) along with staffing needs in terms of both manpower and training.
- Public acceptance of DPR.

DPR provides a reliable, long-term supply even in times of drought. Due to the cost of DPR, the timing of a DPR facility is deferred until aquifer storage and recovery solutions do not provide sufficient capacity to meet the City's needs.

4. **Exchange with BWCDD –** The City may pump excess reclaimed water to BWCDD and exchange it for a surface water credit provided by the BWCDD using a reclaimed water to surface water ratio of 1.5. This will provide the City with a way to use reclaimed water to obtain an additional surface water right that may be particularly useful if the City's CAP water allocation is reduced. Exchanging reclaimed water with BWCDD could let the City delay the implementation of DPR until after 2040. To obtain the surface water, the BWCDD would allow the City to use one of its wells that currently pumps surface water sub flow along the Gila River. The BWCDD may allow the City to pump up to 2,000 AFY per year.

Table 6.5 summarizes the additional recharge capacity needed to recharge projected reclaimed water flows. Figure 6.4 presents the existing recharge infrastructure and potential expansion options in the 157th Avenue WRF service area.

Table 6.5 157th Avenue WRF Service Area Recharge Capacity

	Reclaimed Water Recharge Capacity by Planning Year (mgd)			
	2023	2030	2035	2040
Maximum Monthly Production(1)	5.92	6.64	7.70	8.46
Recharge at the SAT Site(2)	1.58	4.52	4.52	4.52
Aquifer Storage and Recovery Wells(3)		0.94	1.87	2.81
Reclaimed Water Exchanged with BWCDD(4)		1.79	1.79	1.79
Subtotal Reclaimed Water Delivery Capacity	1.58	7.25	8.18	9.12
Reclaimed Water Flows Discharged without Water Resource Benefit(5)	4.34	0.0	0.0	0.0

Notes:
(1) The future maximum monthly reclaimed water production is assumed to be 16 percent greater than the average annual reclaimed water production.
(2) The SAT Site currently has an 8-inch inlet pipe with a maximum allowable velocity of 7 ft/sec. A larger pipe is recommended to be installed to allow the permitted capacity of the site to be delivered.
(3) Assumed capacity of 650 gallons per minute (gpm) per well with the largest well out of service.
(4) The maximum amount that can be exchanged with BWCDD is 1.79 mgd.
(5) Unused reclaimed water was sent to the Buckeye canal in 2023.

In addition to the physical recharge capacity, the capacity of the booster pump stations must be sufficient to pump the peak hour reclaimed water flows to the recharge sites. The 157th WRF pump station has a total capacity of 18 mgd and a firm capacity of 12 mgd. The pump station has sufficient capacity to pump reclaimed water through 2040.

6.5.3 Water Planning Areas 3 and 4 Reclaimed Water Strategy

The City is planning for new development in WPA 4 that will increase the reclaimed water produced at the Rainbow Valley WRF. The City will need to use this reclaimed water to strengthen its water resource portfolio in the Rainbow Valley groundwater basin as outlined in Chapter 3. Constructed recharge facilities are recommended over a managed aquifer storage facility because ADWR will recognize the full recharge volume minus a cut to the aquifer whereas a managed recharge facility can only get credit for 50 percent of the recharged volume.

The 2016 IWMP recommended the use of spreading basins in the Rainbow Valley service area to recharge groundwater. A 2007 study conducted by Hydro Systems, Inc. (HSI) was completed for the City to determine the viability of using the constructed recharge facilities in the Rainbow Valley Area. The conclusion of the study by HSI proposed infiltration basins with wetting and drying cycles and surface soil removal. The assumption from the 2016 IWMP to size the recharge basin for planning purposes is to use a conservative infiltration rate of 0.3 feet per day (ft/day).

The City may also construct ASR wells in WPA 4 to provide additional reclaimed water capacity as a substitute for the constructed recharge facilities. However, the ASR wells are not recommended because the costs to construct ASR wells are significantly higher than the constructed recharge facilities. The ASR wells do not require as much space as the constructed recharge facility so the ASR wells may become more attractive if land availability becomes an issue.

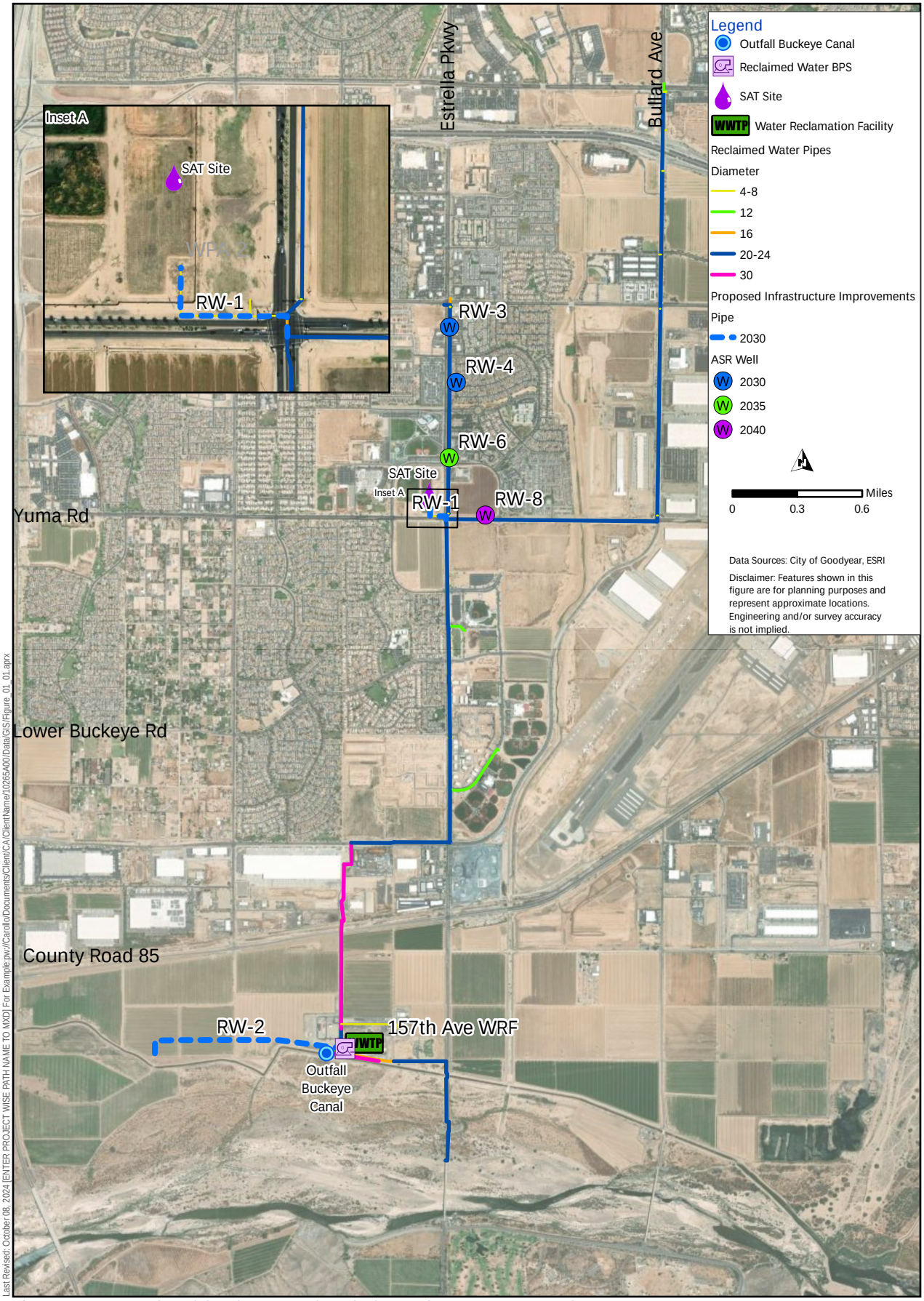


Figure 6.4 Proposed Reclaimed Water Projects in the 157th Avenue WRF Service Area

The City should explore options to improve recharge rates when infiltration basins are used. Some communities have improved recharge rates in poorly performing basins by constructing dry wells through confining clay layers and filling the wells with gravel material. The size of the recharge facility will be determined based on hydrogeological investigations at the selected recharge sites and potentially will require pilot testing various trenching and/or drilling methods.

The infiltration basin could be located south of the Canta Mia development along Rainbow Valley Road. The recharge basin would be split into multiple projects that will increase the size of the infiltration basin, starting at 5 acres and expanding to 60 acres.

Table 6.6 summarizes the additional recharge capacity needed to recharge the projected reclaimed water production from the Rainbow Valley WRF. Figure 6.5 presents the potential location of a spreading basin in the Rainbow Valley Groundwater Basin.

Table 6.6 Rainbow Valley WRF Service Area Recharge Capacity

	Reclaimed Water Recharge Capacity by Planning Year (mgd)			
	2023	2030	2035	2040
Maximum Monthly Rainbow Valley WRF Production(1)	0.58	0.67	1.00	1.58
Reclaimed Water from Corgett to Estrella(3)	0.56	0.56	0.56	0.56
Committed Reclaimed Water to Estrella and Canta Mia(2)	1.13	1.13	1.13	1.13
Flow Rate to the Future Spreading Basin		0.10	0.43	1.01

Notes:
(1) The future maximum monthly reclaimed water production is assumed to be 16 percent greater than the average annual reclaimed water production.
(2) Based on the maximum month delivered to Estrella and Canta Mia in 2023.
(3) Based on the maximum month delivered from the Corgett WRF to Estrella Lakes in 2023.

The Rainbow Valley WRF pump station has a total capacity of 3.3 mgd and a firm capacity of 1.7 mgd. The Rainbow Valley WRF pump station capacity is sufficient to deliver flows through 2035. The pump station will require an expansion to 2.6 mgd of firm capacity before 2040 to meet peak hour requirements.

6.6 Reclaimed Water Projects

Table 6.7 summarizes the reclaimed water projects for the 2030, 2035, and 2040 planning periods.

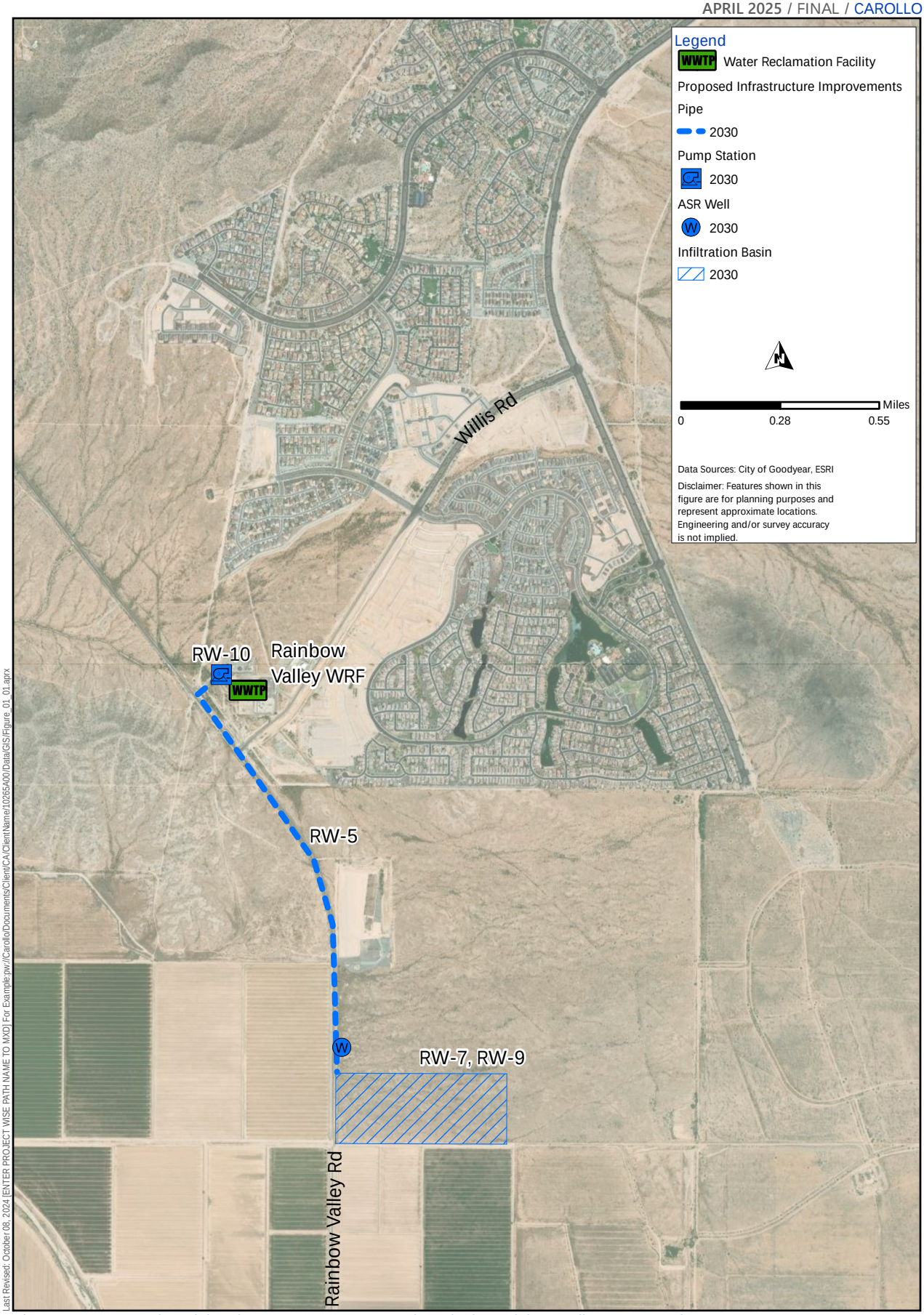


Figure 6.5 Proposed Reclaimed Water Improvement Projects in the Rainbow Valley WRF Service Area

Table 6.7 Proposed Reclaimed Water Infrastructure Facilities by Planning Period

Project #	Description	Justification	Location	Diameter/Size (in/mgd)	Length/Qty (ft/#)	Planning Period
RW-1	16-inch pipeline to the SAT Site	Deliver more flow into the site	WPA 2, SAT Site	16	640	2030
RW-2	Pipeline to BWCDD	To be able to deliver flow from 157th WRF to BWCDD	WPA 2, 157th WRF Service Area	12 in	5,120	2030
RW-3	First ASR Well in WPA 2	Provide additional recharge capacity	WPA 2, 157th WRF Service Area	650 gpm	3	2030
RW-4	Second ASR Well in WPA 2	Provide additional recharge capacity	WPA 2, 157th WRF Service Area	650 gpm	3	2030
RW-5.1	1 mgd pump station at Rainbow Valley WRF	Pump water to spreading basin	WPA 4, Rainbow Valley WRF Service Area	1	1	2030
RW-5.2	16-inch pipeline from Rainbow Valley WRF to the spreading basin	Deliver flow to the spreading basin	WPA 4, Rainbow Valley WRF Service Area	16	6,540	2030
RW-5.3	5-acre spreading basin south of Canta Mia	Provide recharge capacity for Rainbow Valley WRF flows	WPA 4, Rainbow Valley WRF Service Area	5-acre	1	2030
RW-5.4	(Option) First ASR Well in WPA 4	Provide additional recharge capacity	WPA 4, Rainbow Valley WRF Service Area	1	1	2030
RW-5.5	(Option) Second ASR Well in WPA 4	Provide additional recharge capacity	WPA 4, Rainbow Valley WRF Service Area	1	1	2030
RW-6	Third ASR Well in WPA 2	Provide additional recharge capacity	WPA 2, 157th WRF Service Area	1	1	2035
RW-7	Rainbow Valley 25-acre spreading basin expansion	Provide recharge capacity for Rainbow Valley WRF	WP A4, Rainbow Valley WRF Service Area	25-acre	1	2035
RW-8	Fourth ASR Well in WPA 2	Provide additional recharge capacity	WPA 2, 157th WRF Service Area	1	1	2040
RW-9	Rainbow Valley 30-acre spreading basin expansion	Provide recharge capacity for Rainbow Valley WRF	WPA 4, Rainbow Valley WRF Service Area	30-acre	1	2040
RW-10	3 mgd pump station expansion at Rainbow Valley WRF	Pump water to spreading basin	WPA 4, Rainbow Valley WRF Service Area	3	1	2040

6.7 Recommendations

1. The pipeline leading to the SAT site should be upsized to 16 inches in the 2030 planning period to fully utilize the permitted capacity of this site.
2. A 12-inch pipeline from 157th WRF to BWCDD should be constructed in the 2030 planning period to allow the City to exchange reclaimed water.
3. A siting study should be conducted within the 2030 planning period on the viability of ASR wells in central Buckeye. Once completed, the first two 650 gpm ASR wells should be constructed in WPA 2.
4. A study should be conducted within the 2030 planning period on the viability of recharge facilities in the Rainbow Valley WRF service area. Once completed, the first 5 acres of the spreading basin should be constructed along with a 1 mgd pump station and 16-inch pipeline from Rainbow Valley WRF to the spreading basin.
5. The third 650 gpm ASR well in WPA 2 should be constructed in the 2035 planning period to provide additional recharge capacity to the 157th WRF service area.
6. The spreading basin in the Rainbow Valley service area should be expanded from 5 acres to 30 acres in the 2035 planning period to provide additional recharge capacity to the Rainbow Valley service area.
7. The fourth 650 gpm ASR well in WPA 2 should be constructed in the 2040 planning period to provide additional recharge capacity to the 157th WRF service area.
8. The spreading basin in the Rainbow Valley WRF service area should be expanded from 30 acres to 60 acres and the pump station at Rainbow Valley WRF should be expanded by 3 mgd in the 2040 planning period.

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CHAPTER 7 CAPITAL IMPROVEMENT PROGRAM

7.1 Introduction

This chapter presents the CIP developed as part of the 2024 IWMP for the City. The purpose of the CIP is to define the costs of the capital improvements the City will need to expand the water, wastewater, and reclaimed water systems through 2040 to support growth and provide the infrastructure needed to fully utilize the City's water resources. The capital costs for projects assumed to be paid for by developers are also included in this chapter separate from the CIP projects to provide a complete picture of the improvements the City will need to expand through 2040. This chapter includes the following sections:

- Cost development methodology.
- Capital improvement projects.
- Developer funded projects.

7.2 Cost Development Methodology

7.2.1 Overview

7.2.1.1 Capital Project Definitions

Capital projects are funded differently and are therefore categorized differently depending on the funding source. Projects fall into the following categories:

- **CIP Projects –** These projects provide additional capacity to address existing deficiencies or provide capacity for future growth that would be paid for by the City and fall within the 15-year planning horizon (through year 2040).
- **Developer Funded Projects –** These projects define the major transmission, pumping, and storage facilities on undeveloped lands within the City's planning area to be constructed by developers. The plans for this infrastructure are at a conceptual level and may change significantly as specific development plans are prepared. These projects would be paid for by developers and are therefore not included in the CIP but are listed in this report to identify infrastructure needed for a complete picture of the projects to be added.

7.2.1.2 Cost Definitions

Unit Cost

The cost of infrastructure that contains detailed listing of components. The unit cost is multiplied by a length, volume, or capacity to determine the construction cost.

Construction Cost

The construction cost is the cost that would be paid to a contractor to construct the project. Construction costs were calculated by multiplying the estimated unit construction costs by a length or capacity to obtain the construction cost.

Project Cost

The Project Cost is the cost that a water utility would budget for the project. In addition to the construction cost, the project cost includes engineering design (10%), construction management (10%), and a contingency (20%) for a total multiplier of 1.4. The project cost does not include land acquisition, city administration, or Construction Manager at Risk (CMAR) fees.

7.2.2 Planning Level Cost Accuracy

Cost estimates have been developed for the water, wastewater, and reclaimed water capital improvement projects that were identified in Chapters 4, 5, and 6, respectively. The cost estimates presented in the CIP have been prepared for general master planning purposes and for guidance in project evaluation and implementation. Final costs of a project will depend on actual labor and materials costs, competitive market conditions, final project scope, implementation schedule, and other variable factors identified during the preliminary and final design stages. For water and sewer pipes this might include items such as preliminary alignment, investigation of alternative routings, and detailed utility and topography surveys.

This cost estimate was prepared in accordance with the guidelines of the Association for the Advancement of Cost Engineering International (AACEI) for a Class 5 estimate. According to the definitions of Association for the Advancement of Cost Engineering (AACE), the Class 5 estimate is defined as:

> "CLASS 5 ESTIMATE. Generally prepared based on very limited information, where little more than proposed plant type, its location, and the capacity are known. Strategic planning purposes, such as but not limited to, market studies, assessment of viability, evaluation of alternative schemes, project screening, location and evaluation of resource needs and budgeting, long range capital planning, etc. Some examples of estimating methods used would be estimating methods such as cost/capacity curves and factors, scale up factors, parametric and modeling techniques. Typically, very little time is expended in the development of this estimate. The typical expected accuracy range for this class estimate is -20 percent to -50 percent on the low side and +30 percent to + 100 percent on the high side."

Table 7.1 summarizes the AACE International cost estimating classifications, the level of project definition (percent of design), use, appropriate cost estimating methodologies, and the expected accuracy of each class. Design work would need to be undertaken to obtain more precise cost estimates.

Table 7.1 AACE International Cost Estimating Classification Summary

Estimate Class	Maturity Level of Project Definition Deliverables - (Level of Engineering Design)	End Use	Typical Cost Estimating Methodology Used	Expected Accuracy Range (Low/High)
Class 5	0% to 2%	Conceptual screening	Capacity factored, parametric models, judgment, or analogy	L: -20% to -50% H: +30% to +100%
Class 4	1% to 15%	Study or feasibility	Equipment factored or parametric models	L: -15% to -30% H: +20% to +50%
Class 3	10% to 40%	Budget authorization or control	Semi-detailed unit costs with assembly level line items	L: -10% to -20% H: +10% to +30%
Class 2	30% to 75%	Control or bid/tender	Detailed unit cost with forced detailed take-off	L: -5% to -10% H: +5% to +20%
Class 1	65% to 100%	Check estimate or bid/tender	Detailed unit cost with detailed take-off	L: -3% to -10% H: +3% to +15%

7.2.3 Unit Costs

Unit costs were developed for the recommended water and wastewater infrastructure based on Carollo's database of material, labor, and equipment from recent projects, R.S. Means and other unit cost databases. These costs form the basis of the capital improvement project costs. A detailed breakdown of information associated with the unit cost development is included in Appendix 7A and Appendix 7B for water and wastewater infrastructure, respectively.

Multipliers for construction overhead and profit (16%), sales tax (65 percent of applicable costs at 8.35%), and general conditions (10%) were then added to prepare unit construction costs. When multiplied by the capacity, quantity, or size of infrastructure, the construction cost represents what the City should expect to pay a contractor to construct the project. The City will have other expenses to complete the project including design, inspection, project management, and contingencies.

Table 7.2 summarizes the water infrastructure unit costs for the 2024 IWMP. Some projects do not require all the cost items that are developed in the unit costs. For these projects, a unit cost was calculated that includes only the required infrastructure components.

7.2.3.1 Water Unit Costs

Unit costs utilized for the proposed water system infrastructure are described in the sections below. The unit costs correspond with an Engineering News Record Construction Cost Index (ENR CCI) of 13532 for May 2024.

Water Main Unit Costs

Unit costs for the construction of potable or reclaimed water pipelines are shown in Table 7.2. The unit costs are based on an open cut construction method and assume "typical" field conditions with construction in stable soil at a depth ranging between 4 to 8 feet. Fittings, valves, and hydrants are included in the unit costs on a quantity-per-mile basis. The material for water mains is assumed to be ductile iron.

Table 7.2 Water Main Unit Costs

Pipe Diameter (in)	Construction Cost ($/lf)	Project Cost ($/lf)
8	410	574
10	450	630
12	490	686
16	670	938
20	790	1,106
24	950	1,330

$/lf - cost per linear foot

Storage Tank Unit Costs

Unit costs for the construction of water storage tanks are shown in Table 7.3. The unit costs are for welded steel tanks and include costs for piping, coatings, electrical, and disinfection.

Table 7.3 Storage Tank Unit Costs

Tank Size (MG)	Construction Cost ($)	Project Cost ($)
2	6,582,000	9,214,800
3	8,340,000	11,676,000

Booster Pump Station Unit Costs

Unit costs for the construction of water and reclaimed water booster pump stations are shown in Table 7.4. The unit costs are for stations with 4 to 5 pumps and include costs for pressure relief, electrical, disinfection, and coatings. Costs for pump stations of other sizes were inferred from the unit costs shown in Table 7.4.

Table 7.4 Booster Pump Station Unit Costs

Firm Capacity (mgd)	Construction Cost ($)	Project Cost ($)
5	6,305,000	8,827,000
10	7,636,000	10,690,400
15	10,070,000	14,098,000
20	12,103,000	16,944,200

PRV Station Unit Costs

Unit costs for the construction of pressure reducing valve stations are shown in Table 7.5. The PRV station costs were taken from a recent construction project in the West Valley, where multiple PRVs were installed like those proposed in this report.

Table 7.5 PRV Station Unit Costs

PRV Diameter (in)	Construction Cost ($)	Project Cost ($)
8	631,000	883,000

Well Unit Costs

Unit costs for the construction of potable wells are shown in Table 7.6. Costs for wells of other sizes were inferred from the unit costs shown in Table 7.6.

Table 7.6 Well Unit Costs

Well Capacity (mgd)	Construction Cost ($)	Project Cost ($)
1	4,423,000	6,192,200
1.5	4,626,000	6,476,400
3	5,077,000	7,107,800

7.2.3.2 Wastewater System Unit Costs

Unit costs utilized for the proposed wastewater system infrastructure are described in the sections below.

Gravity Sewer Unit Costs

Unit costs for the construction of gravity sewer pipelines are shown in Table 7.7. The unit costs are based on an open cut construction method and assume "typical" field conditions with construction in stable soil at a depth ranging between 6 to 15 feet. Appurtenances (e.g., manholes) are included in the unit costs. The material for gravity pipeline projects is assumed to be vitrified clay.

Table 7.7 Gravity Sewer Unit Costs

Pipe Diameter (in)	Construction Cost ($/lf)	Project Cost ($/lf)
8	340	476
12	420	588
15	500	700
16	570	798
18	580	812
20	650	910
21	730	1,022
24	760	1,064

Force Main Unit Costs

The unit costs of the force main pipes are shown in Table 7.8. The pipe material for force mains is assumed to be ductile iron.

Table 7.8 Force Main Unit Costs

Pipe Diameter (in)	Construction Cost ($/lf)	Project Cost ($/lf)
6	930	1,302
8	1,020	1,428
10	1,040	1,456
12	1,100	1,540

Lift Station Unit Costs

Lift station unit costs were developed based on Carollo's cost database. Table 7.9 lists the lift station unit costs in terms of lift station firm capacity.

Table 7.9 Lift Station Unit Costs

Firm Capacity (mgd)	Construction Cost ($)	Project Cost ($)
1	1,592,000	2,228,000
3	3,349,000	4,688,000
3.5	3,391,000	4,747,000
5	3,528,000	4,939,000

7.2.3.3 Reclaimed Water Unit Costs

ASR Wells

Aquifer storage and recovery (ASR) wells unit cost was developed based on Carollo's cost database. Table 7.10 lists the ASR well unit cost in terms of ASR well firm capacity.

Table 7.10 ASR Well Unit Costs

Firm Capacity (mgd)	Construction Cost ($)	Project Cost ($)
1	7,339,000	10,359,000

Spreading Basin

The spreading basin unit cost was developed based on similar projects. Table 7.11 lists the spreading basin construction cost by acreage of the recharge basins.

Table 7.11 Spreading Basin Unit Costs

Basin Total Acreage (acres)	Construction Cost ($)	Project Cost ($)
5	285,250	400,000

Notes:
(1) Spreading basins are sized with the assumed infiltration rate of 0.3 ft/day and only half the spreading basins' total acreage are available for recharge.

DPR Facility

DPR facility unit cost is based on DPR cost estimates for other communities. The DPR construction cost is the advanced treatment cost which is in addition to the wastewater treatment cost, and excludes brine management infrastructure costs, because brine management is assumed to be handled by Arizona Public Service (APS) in accordance with the City's agreement with APS. The DPR treatment construction cost is estimated at $19 per gallon of treatment capacity. For this type of facility, the project cost is obtained by multiplying the construction cost by a multiplier of 1.3.

7.3 Capital Improvement Program

7.3.1 Water System CIP

A summary of the water capital improvement program is presented in Table 7.12. The water CIP is itemized in Table 7.13, Table 7.14, and Table 7.15 for planning periods 2030, 2035, and 2040 respectively. The CIP locations are presented in Figure 4.26. Detailed water CIPs are illustrated in maps in Appendix 7C.

Table 7.12 Water CIP Summary

Facility Type	Planning Period Project Costs ($)			Total Cost ($)
	2030 ($)	2035 ($)	2040 ($)	
Altitude Valve	0	496,000	0	**496,000**
PRV	0	7,064,000	0	**7,064,000**
Pump Station	3,500,000	8,827,000	5,467,000	**17,794,000**
Storage Tank	9,067,000	9,215,000	0	**18,282,000**
Water Main	10,397,000	28,246,000	5,727,000	**44,370,000**
Water Supply Purchase	0	17,000,000	0	**17,000,000**
Well + Groundwater Treatment	13,407,000	26,659,000	0	**40,066,000**
Surface Water Treatment Expansion	85,570,000	0	0	**85,570,000**
Total	**121,941,000**	**97,507,000**	**11,194,000**	**230,642,000**

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Table 7.13 Water CIPs (FY 2025 - FY 2030)

Project #	Description	Justification	Location	Diameter/ Size (in/mgd)	Length/ Qty (ft/#)	Planning Period	Unit Cost ($ per ft/qty)	Construction Cost ($)	Project Cost ($)	Project Cost by Year					
										2025 ($)	2026 ($)	2027 ($)	2028 ($)	2029 ($)	2030 ($)
W-7.1	12 Inch Water Main	Serve future developments and improve system looping	Broadway Rd, from Estrella Pkwy to Bullard Ave	12	5,250	2030	490	2,573,000	3,602,000	360,000	3,242,000				
W-28	Surface Water Treatment Plant Expansion	Expand water treatment and storage capacity at the Surface Water Treatment Plant (5,250 gpm treatment, 4 MG storage and 8,000 gpm pumping capacity)	Goodyear Water Campus	9.5	1	2030		61,121,000	85,570,000			8,557,000	25,671,000	25,671,000	25,671,000
W-31	Well 18B Replacement	Replace failed well. Redrilling cost only	Well 18B	1.25	1	2030	1,719,000	1,719,000	2,407,000	241,000	2,166,000				
W-36	24 Inch Water Main	Improve transmission from the Surface Water Treatment Plant	From MC85 & North of SWTP to Estrella Pkwy and MC85	24	2,660	2030	950	2,527,000	3,538,000		354,000	3,184,000			
W-37	16 Inch Water Main	Improve looping to industrial sites south of airport	Litchfield Rd from El Cielo to Main St	16	750	2030	670	503,000	704,000	70,000	634,000				
W-41	1.5 MG Storage Tank. Cost split with Data Center Operators	Replace storage at Site 7 and Site 8	Site 18	1.5	1	2030	2,904,500	2,905,000	4,067,000					407,000	3,660,000
61-24-356	Site 10 Booster Tank Rehab	Project copied from City's CIP list	Site 10			2030			2,000,000				2,000,000		
61-21-117	Site 11 Reservoir Rehabilitation	Project copied from City's CIP list	Site 11			2030			3,000,000				3,000,000		
61-23-234	Site 13 and 23 Chlorination System Upgrades	Project copied from City's CIP list	Sites 13 and 23			2030			500,000			500,000			
61-25-458	Well 25 Equipping and Treatment	Project copied from City's CIP list	Well 25			2030			6,000,000				2,000,000	4,000,000	
61-25-460	Well 11 Re-Drill	Project copied from City's CIP list	Well 11			2030			2,500,000					2,500,000	
61-24-357	Site 11 Booster Station MCC Replacement	Project copied from City's CIP list	Site 11			2030			3,000,000				3,000,000		
61-20-001/60041	Water Main Replacement	Project copied from City's CIP list				2030			2,553,000			2,553,000			
	Well 12 Re-drill	Project copied from City's CIP list	Well 12			2030			2,500,000				2,500,000		
Total								**71,348,000**	**121,941,000**	**671,000**	**6,396,000**	**14,794,000**	**38,171,000**	**32,578,000**	**29,331,000**

Notes:
MCC - motor control center
(1) Project cost for SWTP expansion is escalated cost from the 2016 Master Plan.
(2) Project costs correspond to the ENR 20 Cities Construction Cost Index (CCI) of 13,532 for May 2024.

Table 7.14 Water CIPs (FY 2031 - FY 2035)

Project #	Description	Justification	Location	Diameter/ Size (in/mgd)	Length/ Qty (ft/#)	Planning Period	Unit Cost ($ per ft/qty)	Construction Cost ($)	Project Cost ($)	Project Cost by Year				
										2031 ($)	2032 ($)	2033 ($)	2034 ($)	2035 ($)
W-72	12 Inch Water Main	Serve future developments and improve system looping	Roeser Rd, from Estrella Pkwy to Bullard Ave	12	5250	2035	490	2,573,000	3,602,000				360,000	3,242,000
W-14	12 Inch Water Main	Serve future developments and improve system looping	Desert Trumpet Rd to Westar Dr	12	3,385	2035	490	1,658,000	2,321,000				232,000	2,089,000
W-211	575 mgd Booster Pump Station	Provide additional pumping capacity to Central Zone 2	Yuma Rd and Cotton Ln	5.75	1	2035	6,305,000	6,305,000	8,827,000	883,000	7,944,000			
W-212	2 MG Storage Tank	Provide additional storage capacity to Central Zone 2	Yuma Rd and Cotton Ln	2	1	2035	6,582,000	6,582,000	9,215,000	922,000	8,294,000			
W-213	24 Inch Water Main	Improve transmission capabilities from West Goodyear booster pump station	From Citrus Rd and Jefferson St to Van Buren St at RV Park	24	3,895	2035	950	3,700,000	5,180,000		518,000	4,662,000		
W-214	24 Inch Water Main	Improve transmission capabilities from West Goodyear booster pump station	From Citrus Rd and Yuma Rd to Yuma Rd and 175th Dr	24	2,409	2035	950	2,289,000	3,205,000		321,000	2,885,000		
W-215	10 Inch Altitude Valve	Manage flow into the West Goodyear storage tank	Van Buren St and Cotton Ln	10	1	2035	253,000	354,000	496,000	50,000	446,000			
W-216	2 mgd Well	Supply water to the West Goodyear Storage and Booster Pump Station	Yuma Rd and Cotton Ln	2	1	2035	4,851,500	4,852,000	6,793,000	679,000	6,114,000			
W-22	8 Inch PRV Station	Split Central Zone into two pressure zones	Yuma Rd and 173rd Ave	8	1	2035	631,000	631,000	883,000	88,000	795,000			
W-23	8 Inch PRV Station	Split Central Zone into two pressure zones	Sarival Ave and Yavapai St	8	1	2035	631,000	631,000	883,000	88,000	795,000			
W-24	8 Inch PRV Station	Split Central Zone into two pressure zones	Yuma Rd and 158th Dr	6	1	2035	631,000	631,000	883,000	88,000	795,000			
W-25	8 Inch PRV Station	Split Central Zone into two pressure zones	Yuma Rd and 157th Ave	8	1	2035	631,000	631,000	883,000	88,000	795,000			
W-26	8 Inch PRV Station	Split Central Zone into two pressure zones	Yuma Rd and Estrella Pkwy	8	1	2035	631,000	631,000	883,000	88,000	795,000			
W-27	8 Inch PRV Station	Split Central Zone into two pressure zones	Yuma Rd and Litchfield Rd	8	1	2035	631,000	631,000	883,000	88,000	795,000			
W-32	Ion Exchange Treatment for Adaman Well Water	Remove nitrate from Adaman well water	Site 21	2.25	1	2035	4,792,000	10,782,000	15,095,000			1,510,000	6,793,000	6,793,000
W-33	24 Inch Water Main	Improve transmission capabilities from the Surface Water Treatment Plant to western Goodyear	From County Rd 85 and Sarival Ave to Citrus Rd and Broadway Rd	24	7,530	2035	950	7,153,000	10,014,000				1,001,000	9,013,000
W-35	20 Inch Water Main	Replace undersized pipes to remove bottlenecks in pipeline	Central zone to Site 13 along Cotton Ln	20	3,548	2035	790	2,803,000	3,924,000		392,000	3,532,000		
W-38	8 Inch PRV Station	Split Central Zone into two pressure zones	Yuma Rd and Bullard Ave	8	1	2035	631,000	631,000	883,000	88,000	795,000			
W-39	8 Inch PRV Station	Split Central Zone into two pressure zones	Yuma Rd and Canyon Trails Blvd	8	1	2035	631,000	631,000	883,000	88,000	795,000			
W-42	PFAS Treatment for Wells 18 and 18B	Remove PFAS from Well 18 and 18B water	Well 18 and 18B	1.25	1	2035	3,408,000	3,408,000	4,771,000		407,000	3,660,000		
	Bartlett Dam Water Purchase	Project copied from City's CIP list				2035			17,000,000				17,000,000	
Total								**57,507,000**	**97,507,000**	**3,238,000**	**30,796,000**	**16,249,000**	**25,386,000**	**21,137,000**

Notes:
(1) Project cost for well ion exchange escalated from the 2019 Waterman Wash study.
(2) Project costs correspond to the ENR 20 Cities CCI of 13,532 for May 2024.

Table 7.15 Water CIPs (FY 2036 - FY 2040)

Project #	Description	Justification	Location	Diameter/ Size (in/mgd)	Length/ Qty (ft/#)	Planning Period	Unit Cost ($ per ft/qty)	Construction Cost ($)	Project Cost ($)	Project Cost by Year				
										2036 ($)	2037 ($)	2038 ($)	2039 ($)	2040 ($)
W-30	Site 13 (Zone 2) Pump Expansion	Provide additional pumping and fire flow capacity to South Zone 2	Site 13 (Zone 2) Pump Station	2.25	1	2040	3,905,000	3,905,000	5,467,000	547,000	4,920,000			
W-34	16-Inch Water Main	Parallels existing 16-inch. Improve transmission capabilities from Site 12	From Site 12 to Cotton Ln and County Rd 85	16	6,106	2040	670	4,091,000	5,727,000		573,000	5,154,000		
Total								**7,996,000**	**11,194,000**	**547,000**	**5,493,000**	**5,154,000**	**0**	**0**

Notes:
(1) Project costs correspond to the ENR 20 Cities CCI of 13,532 for May 2024.

7.3.2 Wastewater System CIP

A summary of the wastewater CIP is presented in Table 7.16. The wastewater CIP is itemized in Table 7.17, Table 7.18, and Table 7.19 for planning periods 2030, 2035, and 2040. Wastewater CIP locations are presented in Figure 5.9 in chapter 5 of the IWMP. Detailed wastewater CIPs are illustrated in maps in Appendix 7D.

Table 7.16 Wastewater CIP Summary

Facility Type	Planning Period Costs ($)			Total Cost ($)
	2030 ($)	2035 ($)	2040 ($)	
Gravity and Pressure Pipelines	8,224,000	250,000	2,842,000	**11,316,000**
Lift Station	6,851,000	0	0	**6,851,000**
WRF	256,000,000	0	83,000,000	**339,000,000**
Sewer Service Relocation	6,000,000	0	0	**6,000,000**
Total	**277,075,000**	**250,000**	**85,842,000**	**363,167,000**

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Table 7.17 Wastewater CIPs (FY 2025 - FY 2030)

Project #	Description	Justification	Location	Diameter/ Size (in/mgd)	Length/ Qty (ft/#)	Planning Period	Unit Cost ($)	Construction Cost ($)	Project Cost ($)	Project Costs by Year					
										2025 ($)	2026 ($)	2027 ($)	2028 ($)	2029 ($)	2030 ($)
WW-1	Upsize gravity main along Auto Dr and 137th Ave	Pipe is at 90% capacity with the higher Wells Fargo lift station flows	Along Auto Dr from the force main connection to 175 ft south of the connection	12	1,214	2030	420	510,000	714,000	71,000	643,000				
WW-4	Expand the 157th Avenue WRF from 6.7 mgd to 10 mgd(1)	The projected 2028 average dry weather flow reaches the 80% expansion trigger for designing the treatment plant	157th WRF Site	3.3	1	2030	92,857,000	92,857,000	130,000,000	13,000,000	13,000,000	52,000,000	52,000,000		
WW-5	Expand the 157th Avenue WRF from 10 mgd to 12 mgd(2)	The projected 2038 average dry weather flow reaches the 80% expansion trigger for designing the treatment plant	157th WRF Site	2	1	2040	39,286,000	39,286,000	55,000,000				5,500,000	24,750,000	24,750,000
WW-6	Expand the Rainbow Valley WRF from 0.8 mgd to 2.5 mgd(3)	The projected 2030 average dry weather flow reaches the 80% expansion trigger for designing the treatment plant	Rainbow Valley WRF Site	1.7	1	2030	50,714,000	50,714,000	71,000,000	7,100,000	31,950,000	31,950,000			
61016	Central Avenue sewer line and Wells Fargo Lift Station upgrade	Expand capacity to handle flow from new developments upstream of the lift station	Wells Fargo Lift Station on Van Buren St						5,551,000		5,551,000				
61-23-245	Lum Lift Station Force Main	Rehabilitation of the pipeline The project was obtained from City's CIP projects	Lum Lift Station on Westar Dr						5,165,000				425,000	4,740,000	
61-23-223	Rainbow Valley Lift Station Force Main	Rehabilitation of the pipeline The project was obtained from City's CIP projects	Rainbow Valley Lift Station on Westar Dr						2,345,000				2,345,000		
61-24-352	Del Camino Lift Station Generator Replacement	Lift station generator needs replacement The project was obtained from City's CIP projects	Del Camino Lift Station on Via Villat St						650,000				650,000		
61-24-359	Wells Fargo Lift Station Generator Replacement	Lift station generator needs replacement The project was obtained from City's CIP projects	Wells Fargo Lift Station on Van Buren St						650,000				650,000		
New	Historic Goodyear Sewer Service Relocation	Existing sewer system improvement obtained from City's CIP projects	Master Plan Sewer Service Area						6,000,000					6,000,000	
Total								**183,367,000**	**277,075,000**	**20,171,000**	**51,144,000**	**83,950,000**	**61,570,000**	**35,490,000**	**24,750,000**

Notes:
(1) The project cost for the 157th WRF expansion is based in the Goodyear August, 2024 CIP.
(2) The project cost for the 157th WRF expansion is based on Goodyear's August 2022 IIP.
(3) The project costs for the treatment plant expansions in WW-6 is based on the Rainbow Valley WRF expansion cost in the Goodyear 2022 Infrastructure Improvement Plan (IIP).
(4) Project costs are based on the ENR 20 cities CCI index of 13,532 for May 2024.

Table 7.18 Wastewater CIPs (FY 2031 - FY 2035)

Project #	Description	Justification	Location	Diameter/ Size (in/mgd)	Length/ Qty (ft/#)	Planning Period	Unit Cost ($)	Construction Cost ($)	Project Cost ($)	Project Costs by Year				
										FY 2031 ($)	FY 2032 ($)	FY 2033 ($)	FY 2034 ($)	FY 2035 ($)
WW-2	Upsize gravity main along 181st Dr and Pueblo Ave to the Las Brisas Lift Station	Pipe is surcharging under 2033 peak wet weather flow	Las Brisas Lift Station	12	425	2035	420	179,000	250,000				25,000	225,000
Total								**179,000**	**250,000**	**0**	**0**	**0**	**25,000**	**225,000**

Notes:
(1) Project costs are based on the ENR 20 cities CCI index of 13,532 for May 2024

Table 7.19 Wastewater CIPs (FY 2036 - FY 2040)

Project #	Description	Justification	Location	Diameter/ Size (in/mgd)	Length/ Qty (ft/#)	Planning Period	Unit Cost ($)	Construction Cost ($)	Project Cost ($)	Project Costs by Year				
										FY 2036 ($)	FY 2037 ($)	FY 2038 ($)	FY 2039 ($)	FY 2040 ($)
WW-3	Construct parallel 18-inch gravity main along McDowell Rd from Citrus Rd to the Perryville Prison	Pipe is surcharging under 2038 peak wet weather flow	157th WRF Service Area	18	3,500	2040	580	2,030,000	2,842,000	284,000	2,558,000			
WW-7	Expand the Rainbow Valley WRF from 2 mgd to 4 mgd(1)	The projected 2040 average dry weather flow reaches the 80% expansion trigger for designing the treatment plant	Rainbow Valley WRF Site	2	1	2040	59,286,000	59,286,000	83,000,000			8,300,000	37,350,000	37,350,000
Total								**61,316,000**	**85,842,000**	**284,000**	**2,558,000**	**8,300,000**	**37,350,000**	**37,350,000**

Notes:
(1) The project costs for the treatment plant expansions in WW-8 are based on the Rainbow Valley WRF expansion cost in the Goodyear 2022 IIP.
(2) Project costs are based on the ENR 20 cities CCI index of 13,532 for May 2024.

7.3.3 Reclaimed Water System CIP

A summary of the reclaimed water CIPs are presented in Table 7.20. The reclaimed water CIP is itemized in Table 7.21, Table 7.22, and Table 7.23 for planning years 2030, 2035, and 2040 respectively. Reclaimed water CIPs are presented in Figures 6.4 and 6.5 in Chapter 6 of the IWMP. Detailed reclaimed water CIPs are illustrated in maps in Appendix 7E.

Table 7.20 Reclaimed Water CIP Summary

Facility Type	Planning Period Costs ($)			Total Cost ($)
	2030 ($)	2035 ($)	2040 ($)	
Pipeline	17,356,000	0	0	**17,356,000**
Pump Station	3,361,000	0	6,497,000	**9,858,000**
ASR Wells	20,718,000	10,359,000	10,359,000	**41,436,000**
Spreading Basin	559,000	1,997,000	2,396,000	**4,952,000**
Total	**41,994,000**	**12,356,000**	**19,252,000**	**73,602,000**

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Table 7.21 Reclaimed Water CIP (FY 2025 - FY 2030)

Project #	Description	Justification	Location	Diameter/ Size (in/mgd)	Length/ Qty (ft/#)	Planning Period	Unit Cost ($)	Construction Cost ($)	Total Project Cost ($)	Project Costs by Year					
										2025 ($)	2026 ($)	2027 ($)	2028 ($)	2029 ($)	2030 ($)
RW-1	16-inch pipeline to the SAT Site and the beautification of the site	Deliver more flow into the site	WPA 2, SAT Site	16	640	2030	1,490	2,383,000	3,336,000	334,000	3,002,000				
RW-2	Pipeline to BWCDD	Deliver flow from 157th WRF to BWCDD	WPA 2, 157th WRF Service Area	12	5,120	2030	1,100	5,632,000	7,885,000	789,000	7,096,000				
RW-3	First ASR Well in WPA 2	Provide additional recharge capacity	WPA 2, 157th WRF Service Area	1	1	2030	7,399,000	7,399,000	10,359,000	1,035,000	4,662,000	4,662,000			
RW-4	Second ASR Well in WPA 2	Provide additional recharge capacity	WPA 2, 157th WRF Service Area	1	1	2030	7,399,000	7,399,000	10,359,000		1,035,000	4,662,000	4,662,000		
RW-5.1	1 mgd pump station at Rainbow Valley WRF	Pump water to spreading basin	WPA 4, Rainbow Valley WRF Service Area	1	1	2030	2,401,000	2,401,000	3,361,000				337,000	1,512,000	1,512,000
RW-5.2	16-inch pipeline from Rainbow Valley WRF to the spreading basin	Deliver flow to the spreading basin	WPA 4, Rainbow Valley WRF Service Area	16	6,540	2030	670	4,382,000	6,135,000					613,000	5,522,000
RW-5.3	5-acre spreading basin south of Canta Mia	Provide recharge capacity for Rainbow Valley WRF flows	WPA 4, Rainbow Valley WRF Service Area	5-acre	1	2030	399,311	399,000	559,000				56,000	252,000	252,000
RW-5.4	(Option) First ASR Well in WPA 4	Provide additional recharge capacity.	WPA 4, Rainbow Valley WRF Service Area	1	1	2030	7,399,000	7,399,000	10,359,000						
RW-5.5	(Option) A second ASR well in WPA 4	Provide additional recharge capacity	WPA 4, Rainbow Valley WRF Service Area	1	1	2040	7,399,000	7,399,000	10,359,000						
Total								**29,995,000**	**41,994,000**	**2,158,000**	**15,795,000**	**9,324,000**	**5,054,000**	**2,377,000**	**7,286,000**

Notes:
(1) Project costs are based on the ENR 20 cities CCI of 13,533 for May 2024.

Table 7.22 Reclaimed Water CIP (FY 2031 - FY 2035)

Project #	Description	Justification	Location	Diameter/ Size (in/mgd)	Length/Qty (ft/#)	Planning Period	Unit Cost ($)	Construction Cost ($)	Total Project Cost ($)	Project Costs by Year				
										2031 ($)	2032 ($)	2033 ($)	2034 ($)	2035 ($)
RW-6	Third ASR Well in WPA 2	Provide additional recharge capacity	WPA 2, 157th WRF Service Area	1	1	2035	$7,399,000	7,399,000	10,359,000	1,035,000	4,662,000	4,662,000		
RW-7	Rainbow Valley 25-acre spreading basin expansion	Provide recharge capacity for Rainbow Valley WRF	WPA 4, Rainbow Valley WRF Service Area	25-acre	1	2035	$3,423,000	1,426,000	1,997,000			199,000	899,000	899,000
Total								**8,825,000**	**12,356,000**	**1,035,000**	**4,662,000**	**4,861,000**	**899,000**	**899,000**

Notes:
(1) Project costs are based on the ENR 20 cities CCI of 13,533 for May 2024

Table 7.23 Reclaimed Water CIP (FY 2036 - FY 2040)

Project #	Description	Justification	Location	Diameter/ Size (in/mgd)	Length/Qty (ft/#)	Planning Period	Unit Cost ($)	Construction Cost ($)	Total Project Cost ($)	Project Costs by Year				
										2036 ($)	2037 ($)	2038 ($)	2039 ($)	2040 ($)
RW-8	Fourth ASR Well in WPA 2	Provide additional recharge capacity	WPA 2, 157th WRF Service Area	1	1	2035	$7,399,000	7,399,000	10,359,000	1,035,000	4,662,000	4,662,000		
RW-9	Rainbow Valley 30-acre spreading basin expansion	Provide recharge capacity for Rainbow Valley WRF	WPA 4, Rainbow Valley WRF Service Area	30-acre	1	2040	3,423,000	1,711,000	2,396,000	240,000	1,078,000	1,078,000		
RW-10	3 mgd pump station expansion at Rainbow Valley WRF	Pump water to spreading basin	WPA 4, Rainbow Valley WRF Service Area	3	1	2040	4,641,000	4,641,000	6,497,000			649,000	2,924,000	2,924,000
Total								**13,751,000**	**19,252,000**	**1,275,000**	**5,740,000**	**6,389,000**	**2,924,000**	**2,924,000**

Notes:
(1) Project costs are based on the ENR 20 cities CCI of 13,533 for May 2024.

7.4 Developer Funded Projects

7.4.1 Water System

The water development projects are listed in Table 7.24 and shown in Figure 4.27.

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Table 7.24 Water Developer Funded Projects

Project #	Description	Justification	Location	Diameter/ Size (in/mgd)	Length/ Qty (ft/ #)	Planning Phase	Unit Cost ($ per ft/qty)	Construction Costs ($)	Project Cost ($)	2030 ($)	2035 ($)	2040 ($)
W-8	12-Inch Water Main	Serve future developments	South of MC 85, from Cotton Ln to SWTP	12	9,944	2030	490	4,872,000	6,821,000	6,821,000		
W-9	12-Inch Water Main	Serve future developments	Southeast of Buckeye Canal Rd and Cotton Ln	12	9,827	2030	490	4,815,000	6,741,000	6,741,000		
W-10	12-Inch Water Main	Serve future developments	Southwest of Buckeye Canal Rd and Cotton Ln	12	8,063	2030	490	3,951,000	5,531,000	5,531,000		
W-11	12-Inch Water Main	Serve future developments	Van Buren St to Yuma Rd and Perryville Rd to Citrus Rd	12	19,949	2030	490	9,775,000	13,685,000	13,685,000		
W-12	12-Inch Water Main	Serve future developments	Yuma Rd to Lower Buckeye Rd, east of Perryville Rd	12	7,930	2030	490	3,886,000	5,440,000	5,440,000		
W-13	12-Inch Water Main	Serve future developments	North of San Gabriel Dr, west of Cotton Ln	12	12,119	2030	490	5,938,000	8,313,000	8,313,000		
W-15	12-Inch Water Main	Serve future developments	Estrella Mountain Ranch Development Area	12	23,137	2030	490	11,337,000	15,872,000	15,872,000		
W-161	12-Inch Water Main	Serve future developments	Terrasante	12	13,272	2035	490	6,503,000	9,104,000		9,104,000	
W-162	16-Inch Water Main	Serve future developments	Terrasante	16	6,557	2035	670	4,393,000	6,150,000		6,150,000	
W-163	24-Inch Water Main	Serve future developments	Terrasante	24	630	2035	950	599,000	839,000		839,000	
W-171	56 mgd Pump Station	Serve future developments	Terrasante Booster Pump Station	5.6	1	2035	6,305,000	6,305,000	8,827,000		8,827,000	
W-172	2 MG Storage Tank	Serve future developments	Terrasante Tank	2	1	2035	6,582,000	6,582,000	9,215,000		9,215,000	
W-173	2 mgd Well	Serve future developments	Terrasante Well	2	1	2035	4,852,000	4,852,000	6,793,000		6,793,000	
W-201	56 mgd Pump Station	Serve future developments	Rainbow Valley Booster Pump Station	5.6	1	2040	6,305,000	6,305,000	8,827,000		8,827,000	
W-202	2 MG Storage Tank	Serve future developments	Rainbow Valley Tank	2	1	2040	6,582,000	6,582,000	9,215,000		9,215,000	
W-203	2 mgd Well	Serve future developments	Rainbow Valley Well	2	1	2040	4,852,000	4,852,000	6,793,000		6,793,000	
W-191	12-Inch Water Main	Serve future developments	Rainbow Valley	12	14,544	2040	490	7,127,000	9,978,000		9,978,000	
W-192	16-Inch Water Main	Serve future developments	Rainbow Valley	16	10,650	2040	670	7,136,000	9,990,000		9,990,000	
W-181	12-Inch Water Main	Serve future developments	Estrella Highlands	12	15,888	2040	490	7,785,000	10,899,000			10,899,000
W-182	16-Inch Water Main	Serve future developments	Estrella Highlands	16	13,205	2040	670	8,847,000	12,386,000			12,386,000
W-401	2 mgd Well	Serve future developments	Estrella Highlands Well	2	1	2040	4,852,000	4,852,000	6,793,000			6,793,000
W-402	2 MG Storage Tank	Serve future developments	Estrella Highlands Storage Tanks	2	1	2040	6,582,000	6,582,000	9,215,000			9,215,000
W-403	56 mgd Pump Station	Serve future developments	Estrella Highlands Booster Pump Station	5.6	1	2040	6,305,000	6,305,000	8,827,000			8,827,000
Total								**140,181,000**	**196,254,000**	**62,403,000**	**85,731,000**	**48,120,000**

7.4.2 Wastewater System

The wastewater development projects are summarized in Table 7.25 and presented in Figure 5.6.

Table 7.25 Wastewater Development Projects

Project #	Description	Justification	Location	Diameter/ Size (in/mgd)	Length/ Qty (ft/#)	Unit Cost ($)	Construction Cost ($)	Project Cost ($)	2030 ($)	2035 ($)	2040 ($)
P-3-1	12-inch gravity main	Serve future developments	Along West Van Buren St to Roosevelt Canal	12	3,113	420	1,307,000	1,830,000	1,830,000		
P-3-2	12-inch gravity main	Serve future developments	Along South Citrus Rd from West Yuma Rd to West Adam St	12	4,623	420	1,942,000	2,719,000	2,719,000		
P-3-3	12-inch gravity main	Serve future developments	Along West Hadley St from South Citrus Rd to South 185 Ave and along South 181st Ave from Lilac St to West Hadley St	12	4,970	420	2,087,000	2,922,000	2,922,000		
P-3-4	12-inch gravity main	Serve future developments	Along West Harrison St from South Citrus Rd to 183rd Ave	12	2,162	420	908,000	1,271,000	1,271,000		
P-3-5	12-inch gravity main	Serve future developments	Along South 181st Ave from West Harrison St to West Jefferson St and along West Jefferson St from 181st Ave to 183rd Ave	12	2,206	420	927,000	1,298,000	1,298,000		
P-3-6	12-inch gravity main	Serve future developments	Along West Jefferson St from North Citrus Road to North 181st Ave	12	986	420	414,000	580,000	580,000		
P-3-7	12-inch gravity main	Serve future developments	Along North 183rd Ave from West Hadley St to Adam St and along West Harrison St from 183rd Ave to 185th Ave	12	4,193	420	1,761,000	2,465,000		2,465,000	
P-3-8	12-inch gravity main	Serve future developments	Along West Jefferson St from 183rd Ave to 185th Ave	12	944	420	396,000	554,000		554,000	
P-3-9	12-inch gravity main	Serve future developments	Along South 185th Ave from West Hadley St to West Jefferson St	12	2,585	420	1,086,000	1,520,000		1,520,000	
P-4-10	12-inch gravity main	Serve future developments	Along West Lower Buckeye Rd from South Citrus Rd to South 185th Ave	12	3,652	420	1,534,000	2,148,000	2,148,000		
P-4-11	12-inch gravity main	Serve future developments	Along South 185th Ave from West Lower Buckeye Rd to West Durango St	12	2,483	420	1,043,000	1,460,000	1,460,000		
P-4-12	12-inch gravity main	Serve future developments	Along South 185th Ave from West Durango St to West Yuma Rd	12	2,642	420	1,110,000	1,554,000	1,554,000		

Project #	Description	Justification	Location	Diameter/ Size (in/mgd)	Length/ Qty (ft/#)	Unit Cost ($)	Construction Cost ($)	Project Cost ($)	2030 ($)	2035 ($)	2040 ($)
P-4-13	12-inch gravity main	Serve future developments	Along West Watkins St and along West Durango St from South 185th Ave to 183rd Ave	12	2,644	420	1,110,000	1,554,000	1,554,000		
P-5-14	12-inch gravity main	Serve future developments	Along Wier Ave from South Cotton Ln to 159th Ave	12	7,618	420	3,200,000	4,480,000	4,480,000		
P-5-15	12-inch gravity main	Serve future developments	Along South Cotton Ln from Wier Ave to Lakin Park Lift Station	12	960	420	403,000	564,000	564,000		
P-5-16	12-inch gravity main	Serve future developments	Along 167th Ave and Sarival Ave from Wier Ave to County Road 85	12	1,995	420	838,000	1,173,000	1,173,000		
P-8-17	12-inch gravity main	Serve future developments	King Ranch	12	15,133	420	6,356,000	8,898,000	8,898,000		
P-8-18	900 gpm Lift Station	Serve future developments	In King Ranch 1,500 ft west of Cotton Ln and 4,100 ft south of Gila River	1.3	1	2,028,000	2,028,000	2,839,000	2,839,000		
P-8-19	12-inch force main	Serve future developments	From future King Ranch Lift Station to South Cotton Ln and Dunlap Rd	12	13,800	1,100	15,180,000	21,252,000	21,252,000		
P-9-20	8-inch gravity main	Serve future developments	Along 184th Ln to West Cassia Way and to the gravity main parallel to the Rainbow Valley LS force main	8	2,689	340	914,000	1,280,000	1,280,000		
P-6-21	12-inch force main	Serve future developments	Along Roeser Rd from South Bullard Ave to South Estrella Pkwy	12	5,303	420	2,227,000	3,118,000		3,118,000	
P-6-22	12-inch force main	Serve future developments	Along 150th Dr from West Broadway Rd to Roeser Rd	12	2,311	420	971,000	1,359,000		1,359,000	
P-6-23	600 gpm Lift Station	Serve future developments	Estrella Pkwy and Roeser Rd	0.86	1	1,454,000	1,454,000	2,036,000		2,036,000	
P-6-24	8-inch force main	Serve future developments	Estrella Pkwy to Romley Rd	8	1,930	1,020	1,969,000	2,757,000		2,757,000	
P-7-25	12-inch gravity main	Serve future developments	Development north of Gila River on Southern Ave and Cotton Ln	12	16,966	420	7,126,000	9,976,000		9,976,000	
P-7-26	600 gpm Lift Station	Serve future developments	Southern Ave and Cotton Ln	0.86	1	1,454,000	1,454,000	2,036,000		2,036,000	
P-7-27	8-inch force main	Serve future developments	From future Lift Station on Southern Ave and Cotton Lane to Lakin Lift Station	8	3,430	1,020	3,499,000	4,899,000		4,899,000	

Project #	Description	Justification	Location	Diameter/ Size (in/mgd)	Length/ Qty (ft/#)	Unit Cost ($)	Construction Cost ($)	Project Cost ($)	2030 ($)	2035 ($)	2040 ($)
P-10-28	12-inch gravity main	Serve future developments	Southeast Estrella	12	29,693	420	12,471,000	17,459,000		17,459,000	
P-11-29	12-inch gravity main	Serve future developments	Terrasante	12	27,390	420	11,504,000	16,106,000		16,106,000	
P-12-30	1,500 gpm Lift Station	Serve future developments	187th Ave and Maplewood Rd	2.2	1	2,210,000	2,210,000	3,094,000	310,000	2,784,000	
P-12-31	8-inch force main	Serve future developments	From future Lift Station on 187th Ave and Maplewood Rd to Rainbow Valley Rd and Willis Rd	12	7,450	1,100	8,195,000	11,473,000		11,473,000	
P-13-32	12-inch gravity main	Serve future developments	Estrella Highlands	12	26,444	420	11,106,000	15,548,000			15,548,000
P-14-33	12-inch gravity main	Serve future developments	Along 187th Ave from Maplewood Rd to Willis Rd	12	15,504	420	6,512,000	9,117,000			9,117,000
P-1-34	Arroyo Ranch Lift Station	Serve future developments	North Estrella on Ardmore Rd	0.216	1	635,000	635,000	889,000			889,000
P-2-35	12-inch gravity main	Serve future developments	Along West Osborn Rd, west of North Citrus Rd	12	3,925	420	1,649,000	2,309,000			2,309,000
P-2-36	12-inch gravity main	Serve future developments	Along West Earll Dr, west of North Citrus Rd	12	3,925	420	1,649,000	2,309,000			2,309,000
P-2-37	12-inch gravity main	Serve future developments	Along West Thomas Rd from West of North Citrus Rd	12	3,925	420	1,649,000	2,309,000			2,309,000
P-2-38	12-inch gravity main	Serve future developments	Along West Virginia Ave from West of North Citrus Rd	12	3,925	420	1,649,000	2,309,000			2,309,000
P-2-39	12-inch gravity main	Serve future developments	Along West Encanto Blvd and south along 185th Ave from West of North Citrus Rd	12	5,320	420	2,234,000	3,128,000			3,128,000
Total							**124,707,000**	**174,592,000**	**58,132,000**	**78,542,000**	**37,918,000**

Notes:
(1) The lift station cost is derived by proportioning the cost of lift stations with a similar size.
(2) Project costs are based on the ENR 20 cities CCI index of 13,532 for May 2024.

APPENDIX 5A

WASTEWATER FLOW MONITORING TEST REPORT

Dry Weather Sewer Flow Monitoring, Goodyear AZ, 2023

Final Report Submitted to **Carollo**
July 17, 2023



ADS ENVIRONMENTAL SERVICES

4820 Mercury Street, Suite C
San Diego, CA 92111

800-633-7246
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July 17, 2023

Richard A. Humpherys, PE*
Project Manager / Vice President
Carollo Engineers
4600 East Washington St. / Phoenix, AZ 85034
602-882-7904
rhumpherys@carollo.com / carollo.com

SUBJECT: Dry Weather Sewer Flow Monitoring, Goodyear AZ, 2023

Dear Mr. Humpherys,

ADS is pleased to submit the report for the project reference above completed on behalf of Carollo. The metering was conducted at sixteen (16) locations. The study was conducted during the period of Sunday, 11 June 2023 to Tuesday, 27 June 2023.

The report contains depth, velocity, and quantity hydrographs as well as daily long tables for the metering period. An Excel file containing depth, quantity, and velocity entities for the monitoring location in 5-minute format has been provided.

In addition, we would be happy to further explain any details about the report that may seem unclear. Should you have any questions or comments, you may contact the Project Manager, Paul Mitchell at 714.379.9778 xt.223 (O) or 714.920.5518 (M).

It has been our pleasure to be of service to you in the performance of this project. Thank you for choosing ADS products and services to meet your flow monitoring needs.

Sincerely,
ADS ENVIRONMENTAL SERVICES

Justin Hatch
Data Analyst

Dry Weather Sewer Flow Monitoring, Goodyear AZ, 2023

Prepared For:

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Prepared By:

ADS, LLC
4820 Mercury Street, Suite C
San Diego, CA 92111

Scope and Methodology

Introduction

Carollo entered into an agreement with ADS Environmental Services to conduct flow monitoring at (16) sixteen locations in the Goodyear Arizona Sanitary Collection System. The study was scheduled for a period of (14) fourteen days. Data from Sunday, 11 June 2023 to Tuesday, 27 June 2023 is included in this report in order to provide at least 14 full days of data at each location. Once in place, the flow monitoring equipment was used to measure depth, velocity, and to quantify flows. Data obtained from the study will be used to confirm dry weather flows in selected sewer tributaries for planning purposes.

Project Scope

The scope of this study involved using a flow monitor to quantify wastewater flow at the designated locations for the 14-day time period. Specifically, the study included the following key components.

- Investigate the proposed flow-monitoring sites for adequate hydraulic conditions
- Flow monitor installations
- Flow monitor confirmations and data collections
- Flow data analysis

Equipment installation was completed on June 10, 2023. The monitoring began on June 11, 2023 and was completed on June 27, 2023. Upon completion of the study, equipment was removed from the system.

Flow Monitoring Equipment



The ***ADS Triton+*** monitor was selected for this project. This flow monitor is an area velocity flow monitor that uses both the Continuity and Manning's equations to measure flow.

The ADS Triton+ monitor consists of data acquisition sensors and a battery-powered microcomputer. The microcomputer includes a processor unit, data storage, and an on-board clock to control and synchronize the sensor recordings. The monitor was programmed to acquire and store depth of flow and velocity readings at 5-minute intervals.

The Triton+ monitor features cross-checking using multiple technologies in each sensor for continuous running of comparisons and tolerances. The Triton+ monitor can support two (2) sets of sensors. The sensor option used for this project was:

The Peak Combo Sensor installed at the bottom of the pipe includes three types of data acquisition technologies.

The ***up looking ultrasonic depth*** uses sound waves from two independent transceivers to measure the distance from the sensor upward toward the flow surface; applying the speed of sound in the water and the temperature measured by

sensor to calculate depth.

The ***pressure depth*** is calculated by using a piezo-resistive crystal to determine the difference between hydrostatic and atmospheric pressure. The pressure sensor is temperature compensated and vented to the atmosphere through a desiccant filled breather tube.

To obtain ***peak velocity*****,** the sensor sends an ultrasonic signal at an angle upward through the widest cross-section of the oncoming flow. The signal is reflected by suspended particles, air bubbles, or organic matter with a frequency shift proportional to the velocity of the reflecting objects. The reflected signal is received by the sensor and processed using digital spectrum analysis to determine the peak flow velocity.

Installation

Installation of flow monitoring equipment typically proceeds in four steps. First, the site is investigated for safety and to determine physical and hydraulic suitability for the flow monitoring equipment. Second, the equipment is physically installed at the selected location. Third, the monitor is tested to assure proper operation of the velocity and depth of flow sensors and verify that the monitor clock is operational and synchronized to the master computer clock. Fourth, the depth and velocity sensors are confirmed and line confirmations are performed.

In pipes up to 42 inches in diameter, the sensors were mounted on expandable stainless steel rings, inserted at least a foot upstream into influent pipes and tightened against the inside walls of the pipes. Influent pipe installations reduce the influences of turbulence and backwater often caused by changes in channel geometry in manholes.





Data Collection, Confirmation, and Quality Assurance

Data collection was done remotely via wireless connect on a weekly basis via ADS Field Representatives. During the monitoring period, field crews visit each monitoring location to verify proper monitor operation and document field conditions. The following quality assurance steps are taken to assure the integrity of the collected data:

Measure power supplies: monitors were powered by dry cell battery packs. Voltages were recorded and battery packs replaced, as necessary. Separate batteries provided back-up power to memory allowing primary batteries to be replaced without loss of data.

Clock synchronization: Field crews synchronized monitor clocks to master clocks.

Confirm depth and velocity readings: Field crews descended into meter manholes to manually measure depths and velocities and compare them meter readings to confirm that they agreed. They also measured silt levels, if any, in the inverts of the pipes. Silt areas were subtracted from flow areas to compute true areas of flow.

Confirm average velocities through cross-sectional velocity profiles: Since ADS velocity sensors measure peak velocity, field crews collected cross-sectional velocity profiles in order to develop a relationship between peak and average velocity in lines that meet the hydraulic criteria.

Upload and Review Data: Data collected from the monitors were uploaded and reviewed by a Data Analyst for completeness, outliers and deviations in the flow patterns, which indicate system anomalies or equipment failure.

Flow Quantification Methods

There are two main equations used to measure open channel flow: the ***Continuity Equation*** and the ***Manning Equation.*** The Continuity Equation, which is considered the most accurate, can be used if both depth of flow and velocity are available. In cases where velocity measurements are not available or not practical to obtain, the Manning Equation can be used to estimate velocity from the depth data based on certain physical characteristics of the pipe (i.e. the slope and roughness of the pipe being measured). However, the Manning equation assumes uniform, steady flow hydraulic conditions with non-varying roughness, which are typically invalid assumptions in most sanitary sewers. The Continuity Equation was used exclusively for this study.

Continuity Equation

The Continuity Equation states that the flow quantity (Q) is equal to the wetted area (A) multiplied by the average velocity (V) of the flow.

Q = A * V

This equation is applicable in a variety of conditions including backwater, surcharge, and reverse flow.

Data Analysis and Presentation

Data Analysis

A flow monitor is typically programmed to collect data at 5-minute intervals throughout the monitoring period. The monitor stores raw data consisting of (1) the ultrasonic depth, (2) the peak velocity and (3) the pressure depth. The data is imported into ADS's proprietary software and is examined by a data analyst to verify its integrity. The data analyst also reviews the daily field reports and site visit records to identify conditions that would affect the collected data.

Velocity profiles and the line confirmation data developed by the field personnel are reviewed by the data analyst to identify inconsistencies and verify data integrity. Velocity profiles are reviewed and an average to peak velocity ratio is calculated for the site. This ratio is used in converting the peak velocity measured by the sensor to the average velocity used in the Continuity equation. The data analyst selects which depth sensor entity will be used to calculate the final depth information. Silt and/or debris are often present in sewer lines. When present, silt levels are measured at each site visit. They are reviewed by the data analyst and representative silt levels established. Silt reduces the cross sectional area of the flow where as debris causes depth to become deeper and slower. Calculated flow should remain consistent in both hydraulic conditions. Debris may result in reduced line capacity.

Occasionally the velocity sensor's performance may be compromised resulting in invalid readings sporadically during the monitoring period. This is generally caused by excessive debris (silt) blocking the sensor's crystals, shallow flows (~< 1") that may drop below the top of the sensor or very clear flows lacking the particles needed to measure rate. In order to use the Continuity equation to quantify the flow during these periods, a Data Analyst and/or Engineer will use the site's historical pipe curve (depth vs. velocity) data along with valid field confirmations to reconstitute and replace the false velocity recordings with expected velocity readings for a given historical depth along the curve.

Selections for the above parameters can be constant or can change during the monitoring period. While the data analysis process is described in a linear manner, it often requires an iterative approach to accurately complete.

Data Presentation

This type of flow monitoring project generates a large volume of data. To facilitate review of the data, results have been provided in graphical and tabular formats. The flow data is presented graphically in the form of scattergraphs and hydrographs. Hydrographs are based on 15 minute averaging. Tables are provided in daily average format. These tables show the flow rate for each day, along with the daily minimum and maximums, the times they were observed, the total daily flow, and total flow for the month (or monitoring period). The following explanation of terms may aid in interpretation of the tables and hydrographs.

DFINAL - Final calculated depth measurement (in inches)

QFINAL - Final calculated flow rate (in MGD)

VFINAL - Final calculated flow velocity (in feet per second)

REPORT TOTAL - Total volume of flow recorded for the indicated time period (in MG)

FM_01

Site Commentary

SITE INFORMATION

Pipe	Elliptical (11.88 in H x 11.88 in W)
Silt	0.00 (in)

OBSERVATIONS

Surcharge conditions were not experienced. Review of the scattergraph shows that free-flow conditions were maintained throughout the study.

This site was positioned downstream of site FM_07 and upstream of site FM_16. A review of flow balancing indicated no problems.

Average flow depth, velocity, and quantity data observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	3.29	1.77	0.208
Minimum	2.15	1.19	0.073
Maximum	4.82	2.39	0.435
Min Time	06/25/2023 6:45:00 AM	06/25/2023 6:45:00 AM	06/25/2023 6:45:00 AM
Max Time	06/26/2023 12:00:00 PM	06/16/2023 11:30:00 AM	06/26/2023 12:00:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the fifteen minutes average.

DATA UPTIME

Data uptime observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

GoodYear.Carollo.TFM.AZ23

Flow Monitoring Site Report

ADS ENVIRONMENTAL SERVICES®

Site Name

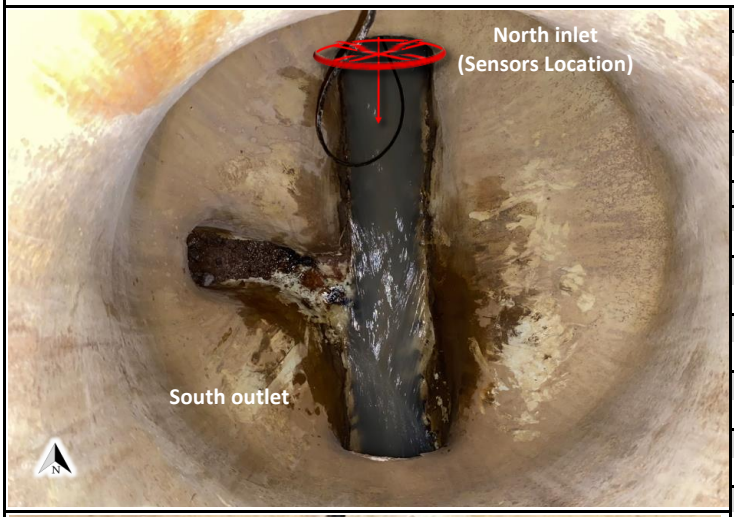
FM_01

Site Address /Location:	4204 S Bullard Ave, Goodyear, AZ 85338			Monitor Series	Location Type
				TRITON+	Temporary
Site Access Details:	External Traffic Control Required	Latitude:	33.407661	Pipe Size (H x W)	Pipe Shape
		Longitude:	-112.3750741°	11.88"x 11.88"	Circular



Manhole #	System Characteristics
N/A	Residential/Commercial
Access	**Traffic**
Drive	Medium







ADS Project Name:	GoodYear.Carollo.TFM.AZ23
ADS Project Number:	22930.11.325

Installation Information

Installation Date:	Installation Type:
Tuesday, June 6, 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4)	0 - 5 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW)
11:47:00 PM	11.88"x 11.88"
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
3.63"	-
Downlooker Physical Offset (in)	Measurement Confidence (in)
NA	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
2.14	0''
Silt (in)	Silt Type
0''	

Hydraulic Comments:

Smooth flow with low depth and moderate velocity

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
6.11	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
26"	54''
Manhole Cover	Manhole Frame
Unbolted	Normal
Active Drop Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
PVC	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

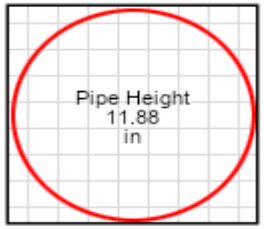
External Traffic Control Required

Hydrograph Report

FM_01

Flow Monitor

FM_01

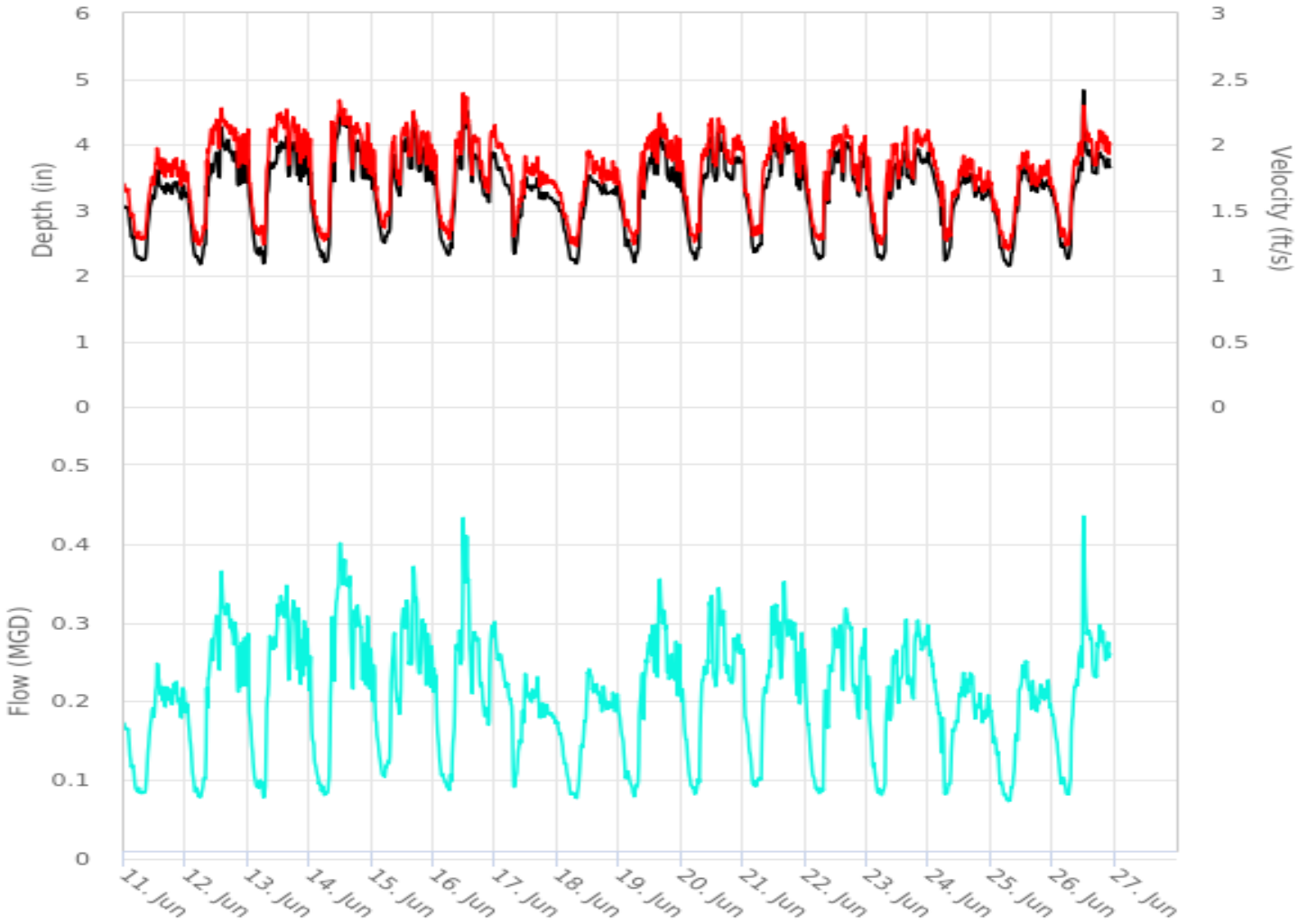


Report Period

06/11/2023
To
06/27/2023

Legend

DFINAL
QFINAL
VFINAL



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Scattergraph Report

FM_01

Flow Monitor

FM_01

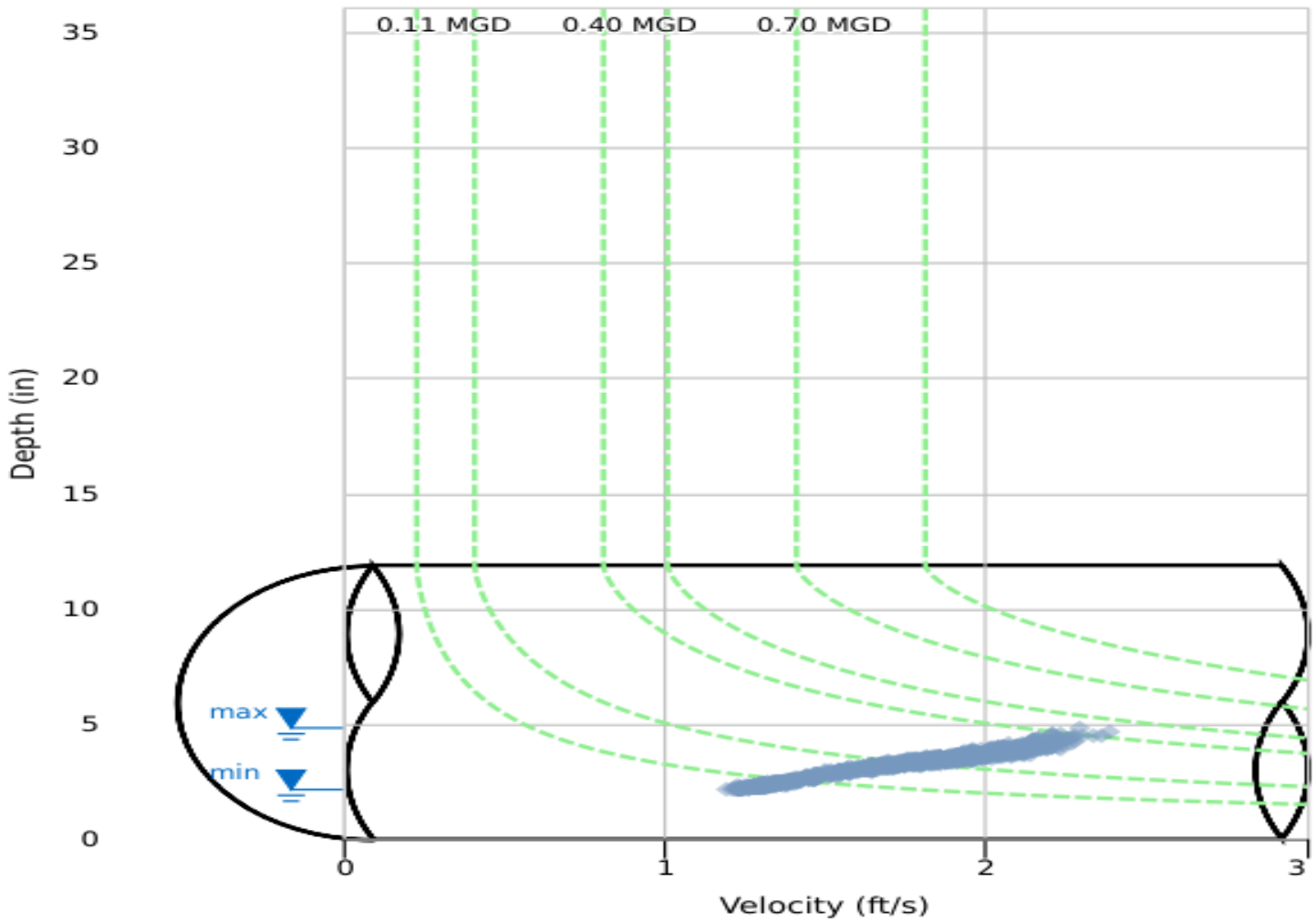
Pipe Height
11.88
in

Report Period

06/11/2023
To
06/27/2023

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Daily Tabular Report

06/11/2023 00:00 - 06/27/2023 23:59
FM_01Pipe: Elliptical (11.88 in H x 11.88 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)					
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total
06/11/2023	06:45	2.23	13:00	3.62	3.00	06:20	1.26	12:55	2.04	1.65	06:50	0.082	12:55	0.260	0.168	0.168
06/12/2023	05:30	2.17	13:40	4.29	3.34	05:20	1.21	13:45	2.32	1.85	05:20	0.076	13:45	0.376	0.223	0.223
06/13/2023	06:05	2.18	15:10	4.14	3.40	06:10	1.21	15:05	2.35	1.88	06:10	0.076	15:05	0.362	0.232	0.232
06/14/2023	05:45	2.20	11:40	4.53	3.48	05:45	1.25	11:40	2.43	1.86	05:45	0.079	11:40	0.423	0.239	0.239
06/15/2023	05:10	2.49	16:30	4.38	3.45	04:15	1.34	16:20	2.30	1.85	05:10	0.102	16:20	0.383	0.229	0.229
06/16/2023	05:35	2.31	11:35	4.67	3.38	06:00	1.22	11:35	2.43	1.81	06:00	0.083	11:35	0.441	0.221	0.221
06/17/2023	07:15	2.33	00:00	3.82	3.23	07:05	1.27	00:05	2.07	1.76	07:10	0.089	00:00	0.284	0.195	0.195
06/18/2023	07:10	2.18	12:20	3.53	3.01	07:30	1.21	12:40	1.99	1.64	07:30	0.076	12:40	0.244	0.167	0.167
06/19/2023	05:45	2.20	15:35	4.24	3.29	05:50	1.22	15:50	2.28	1.80	05:50	0.077	15:50	0.360	0.211	0.211
06/20/2023	05:20	2.24	14:45	4.20	3.36	05:10	1.24	11:50	2.26	1.82	05:20	0.081	14:30	0.348	0.219	0.219
06/21/2023	04:15	2.35	15:55	4.28	3.43	05:10	1.28	16:05	2.23	1.82	05:10	0.090	15:55	0.356	0.225	0.225
06/22/2023	05:40	2.24	16:05	4.08	3.33	05:25	1.25	15:45	2.20	1.77	05:25	0.082	15:45	0.328	0.211	0.211
06/23/2023	05:35	2.24	19:50	3.93	3.30	05:40	1.22	18:55	2.22	1.78	05:40	0.079	15:25	0.312	0.208	0.208
06/24/2023	06:20	2.22	00:00	3.81	3.20	06:15	1.25	00:35	2.04	1.71	06:15	0.081	00:00	0.279	0.188	0.188
06/25/2023	06:40	2.15	13:45	3.71	3.05	06:25	1.17	14:05	2.00	1.62	06:50	0.072	14:05	0.255	0.170	0.170
06/26/2023	05:50	2.25	12:05	4.83	3.36	05:25	1.21	12:10	2.34	1.79	06:15	0.081	12:10	0.444	0.217	0.202
06/27/2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

06/11/2023 00:00 - 06/27/2023 23:59

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)
Total			3.309
Average	3.29	1.77	0.208

FM_02

Site Commentary

SITE INFORMATION

Pipe	Elliptical (11.88 in H x 11.88 in W)
Silt	0.00 (in)

OBSERVATIONS

Surcharge conditions were not experienced. Review of the scattergraph shows that free-flow conditions were maintained throughout the study.

This site was positioned upstream of site FM_16. A review of flow balancing indicated no problems.

Average flow depth, velocity, and quantity data observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	2.27	1.77	0.121
Minimum	1.61	0.92	0.037
Maximum	2.85	2.19	0.190
Min Time	06/18/2023 5:45:00 AM	06/18/2023 5:45:00 AM	06/18/2023 5:45:00 AM
Max Time	06/25/2023 9:45:00 PM	06/25/2023 12:00:00 PM	06/25/2023 9:45:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the fifteen minutes average.

DATA UPTIME

Data uptime observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

GoodYear.Carollo.TFM.AZ23

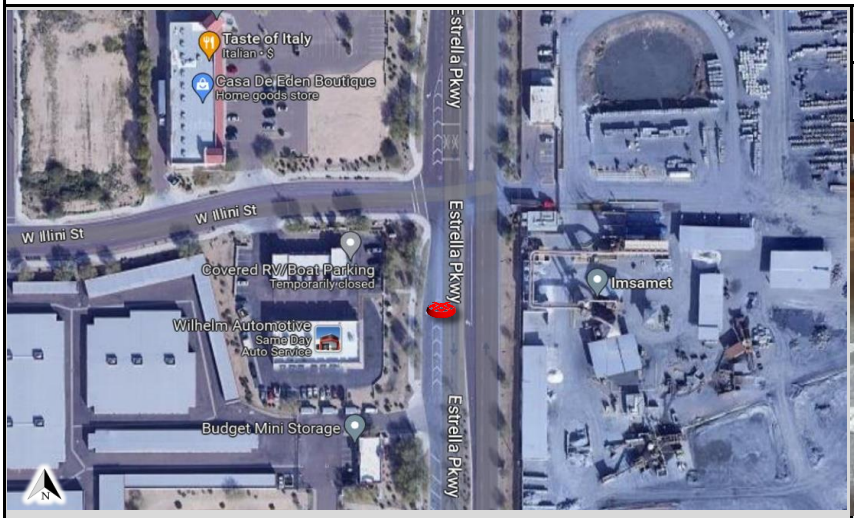
Flow Monitoring Site Report

ADS ENVIRONMENTAL SERVICES®

Site Name

FM_02

Site Address /Location:	3900 Estrella Pkwy, Goodyear, AZ 85338			Monitor Series	Location Type
				TRITON+	Temporary
Site Access Details:	External Traffic Control Required	Latitude:	33.4109769	Pipe Size (H x W)	Pipe Shape
		Longitude:	-112.3923757°	11.88"x 11.88"	Circular



Manhole #	System Characteristics
MH86D-201	Residential/Commercial
Access	Traffic
Drive	Medium







ADS Project Name:	GoodYear.Carollo.TFM.AZ23
ADS Project Number:	22930.11.325

Installation Information

Installation Date:	Installation Type:
Tuesday, June 6, 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4)	0 - 5 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW)
10:39:00 PM	11.88"x 11.88"
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
2.50"	-
Downlooker Physical Offset (in)	Measurement Confidence (in)
NA	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
2.21	0''
Silt (in)	Silt Type
0''	

Hydraulic Comments:
Smooth flow with low depth and moderate velocity

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
14.34	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
26"	54''
Manhole Cover	Manhole Frame
Unbolted	Normal
Active Drop Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
PVC	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

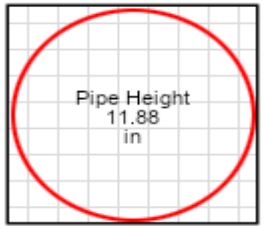
External Traffic Control Required

Hydrograph Report

FM_02

Flow Monitor

FM_02

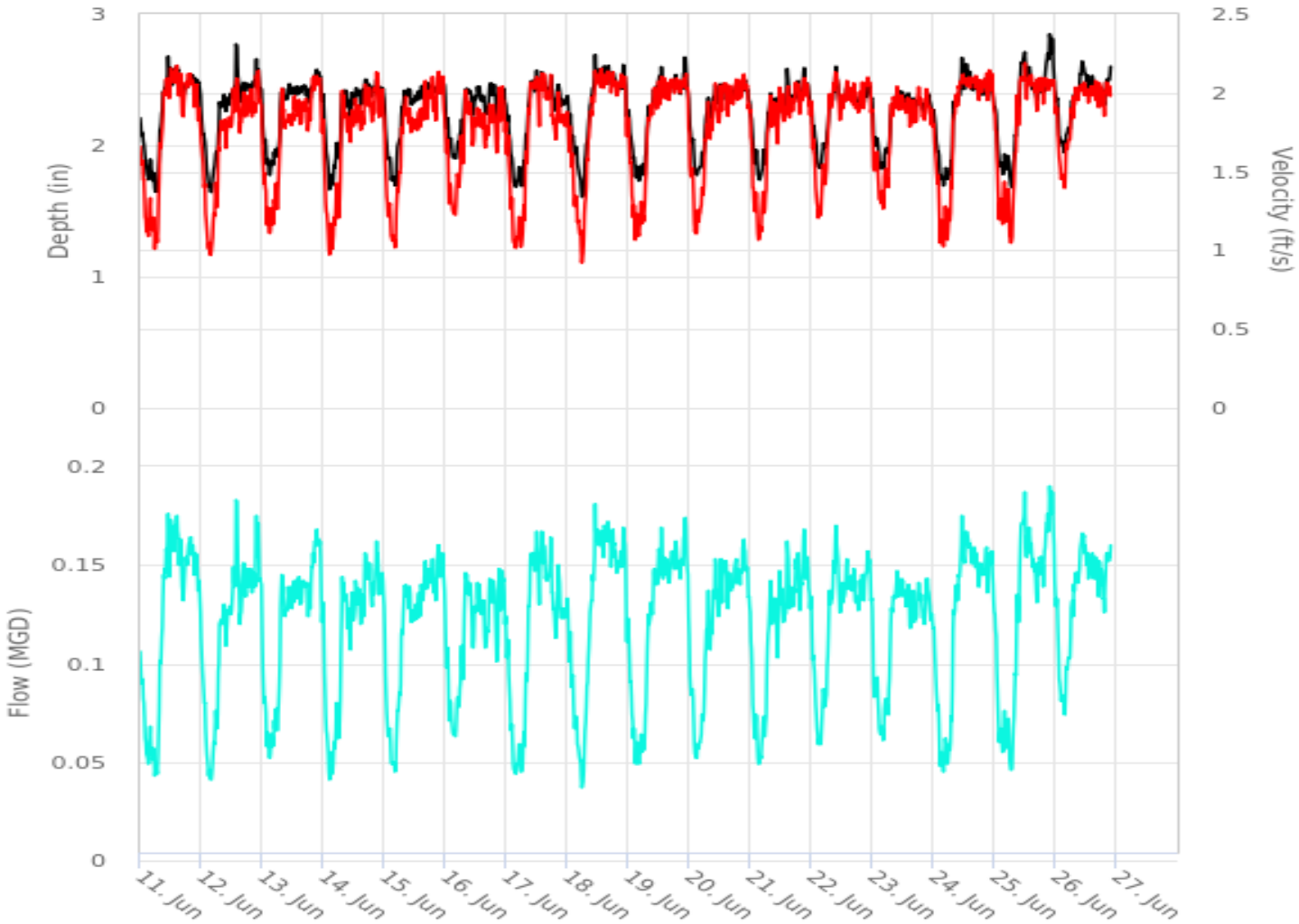


Report Period

06/11/2023
To
06/27/2023

Legend

DFINAL
QFINAL
VFINAL



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Scattergraph Report

FM_02

Flow Monitor

FM_02

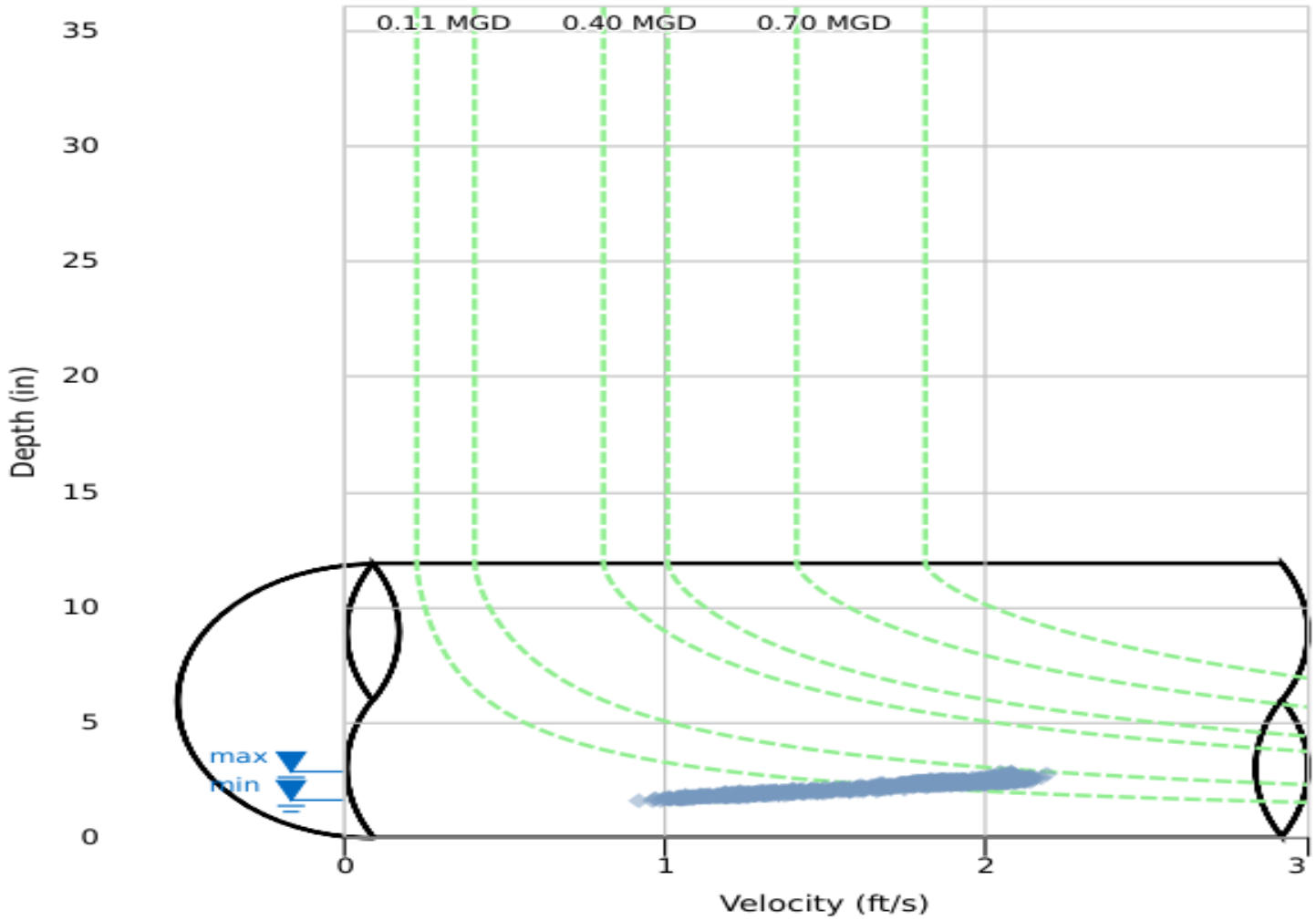
Pipe Height
11.88
in

Report Period

06/11/2023
To
06/27/2023

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Daily Tabular Report

06/11/2023 00:00 - 06/27/2023 23:59
FM_02Pipe: Elliptical (11.88 in H x 11.88 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)					
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total
06/11/2023	06:05	1.64	11:05	2.70	2.27	05:55	0.98	14:40	2.19	1.76	05:55	0.041	14:35	0.178	0.122	0.122
06/12/2023	03:55	1.64	13:55	3.32	2.27	03:50	0.96	22:30	2.16	1.71	03:50	0.040	13:55	0.237	0.118	0.118
06/13/2023	03:05	1.77	21:25	2.59	2.28	03:00	1.08	21:30	2.14	1.74	03:00	0.050	21:30	0.171	0.119	0.119
06/14/2023	02:35	1.66	16:30	2.51	2.25	02:35	0.97	21:00	2.17	1.71	02:35	0.041	21:00	0.166	0.115	0.115
06/15/2023	04:25	1.69	21:25	2.49	2.27	04:20	1.00	21:30	2.16	1.74	04:20	0.044	21:30	0.164	0.118	0.118
06/16/2023	03:00	1.90	18:10	2.48	2.27	04:05	1.20	21:20	2.08	1.72	04:05	0.062	08:30	0.150	0.116	0.116
06/17/2023	03:50	1.68	12:00	2.58	2.23	03:50	0.98	14:55	2.17	1.71	03:50	0.042	12:00	0.169	0.115	0.115
06/18/2023	05:55	1.60	11:05	2.71	2.30	05:45	0.90	16:00	2.20	1.80	05:45	0.036	11:05	0.182	0.126	0.126
06/19/2023	04:10	1.72	22:25	2.69	2.27	02:50	1.04	13:00	2.13	1.79	04:20	0.047	22:15	0.177	0.123	0.123
06/20/2023	02:50	1.77	21:10	2.52	2.26	02:55	1.08	21:35	2.13	1.79	02:55	0.050	21:30	0.163	0.121	0.121
06/21/2023	03:40	1.73	14:35	2.60	2.24	03:15	1.07	21:15	2.13	1.77	03:40	0.048	21:15	0.172	0.118	0.118
06/22/2023	03:40	1.82	09:50	2.61	2.27	02:50	1.20	09:35	2.14	1.84	03:00	0.058	09:50	0.170	0.124	0.124
06/23/2023	03:20	1.82	09:50	2.43	2.23	04:30	1.22	09:50	2.08	1.79	04:30	0.059	09:50	0.152	0.117	0.117
06/24/2023	04:05	1.68	11:15	2.69	2.25	04:05	0.99	22:05	2.17	1.81	04:05	0.043	11:15	0.179	0.123	0.123
06/25/2023	06:50	1.68	21:50	2.88	2.30	06:40	1.02	12:05	2.19	1.80	06:40	0.044	21:55	0.194	0.127	0.127
06/26/2023	03:40	1.93	10:35	2.66	2.36	03:40	1.37	15:50	2.10	1.89	03:40	0.072	10:50	0.168	0.134	0.122
06/27/2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

06/11/2023 00:00 - 06/27/2023 23:59

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)
Total			1.925
Average	2.27	1.77	0.121

FM_03

Site Commentary

SITE INFORMATION

Pipe	Elliptical (14 in H x 14 in W)
Silt	0.00 (in)

OBSERVATIONS

Surcharge conditions were not experienced. Review of the scattergraph shows that free-flow conditions were maintained throughout the study.

This site was positioned upstream of site FM_16. A review of flow balancing indicated no problems.

Average flow depth, velocity, and quantity data observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	2.46	1.19	0.108
Minimum	1.24	0.59	0.019
Maximum	4.73	2.22	0.452
Min Time	06/25/2023 5:15:00 AM	06/22/2023 3:45:00 AM	06/16/2023 4:15:00 AM
Max Time	06/11/2023 4:15:00 AM	06/11/2023 4:00:00 AM	06/11/2023 4:00:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the fifteen minutes average.

DATA UPTIME

Data uptime observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

GoodYear.Carollo.TFM.AZ23

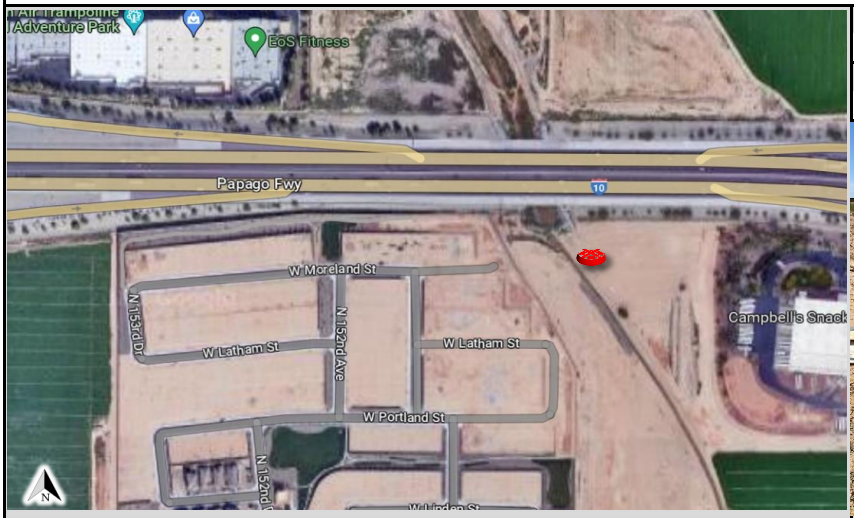
Flow Monitoring Site Report

ADS ENVIRONMENTAL SERVICES®

Site Name

FM_03

Site Address /Location:	1200 N Bullard Ave, Goodyear, AZ 85338			Monitor Series	Location Type
				TRITON+	Temporary
Site Access Details:	External Traffic Control Required	Latitude:	33.4603441	Pipe Size (H x W)	Pipe Shape
		Longitude:	-112.3834607°	14.00"x 14.00"	Circular



Manhole #	System Characteristics
MH57B-304	Residential/Commercial
Access	Traffic
Drive	Medium







ADS Project Name:	GoodYear.Carollo.TFM.AZ23
ADS Project Number:	22930.11.325

Installation Information

Installation Date:	Installation Type:
Wednesday, June 7, 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4)	0 - 5 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW)
8:57:00 AM	14.00"x 14.00"
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
2.25"	-
Downlooker Physical Offset (in)	Measurement Confidence (in)
NA	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
1.25	0''
Silt (in)	Silt Type
0''	

Hydraulic Comments:

Smooth flow with low depth and low velocity

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
10.79	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
26"	54''
Manhole Cover	Manhole Frame
Unbolted	Normal
Active Drop Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
PVC	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

External Traffic Control Required

Hydrograph Report

FM_03

Flow Monitor

FM_03

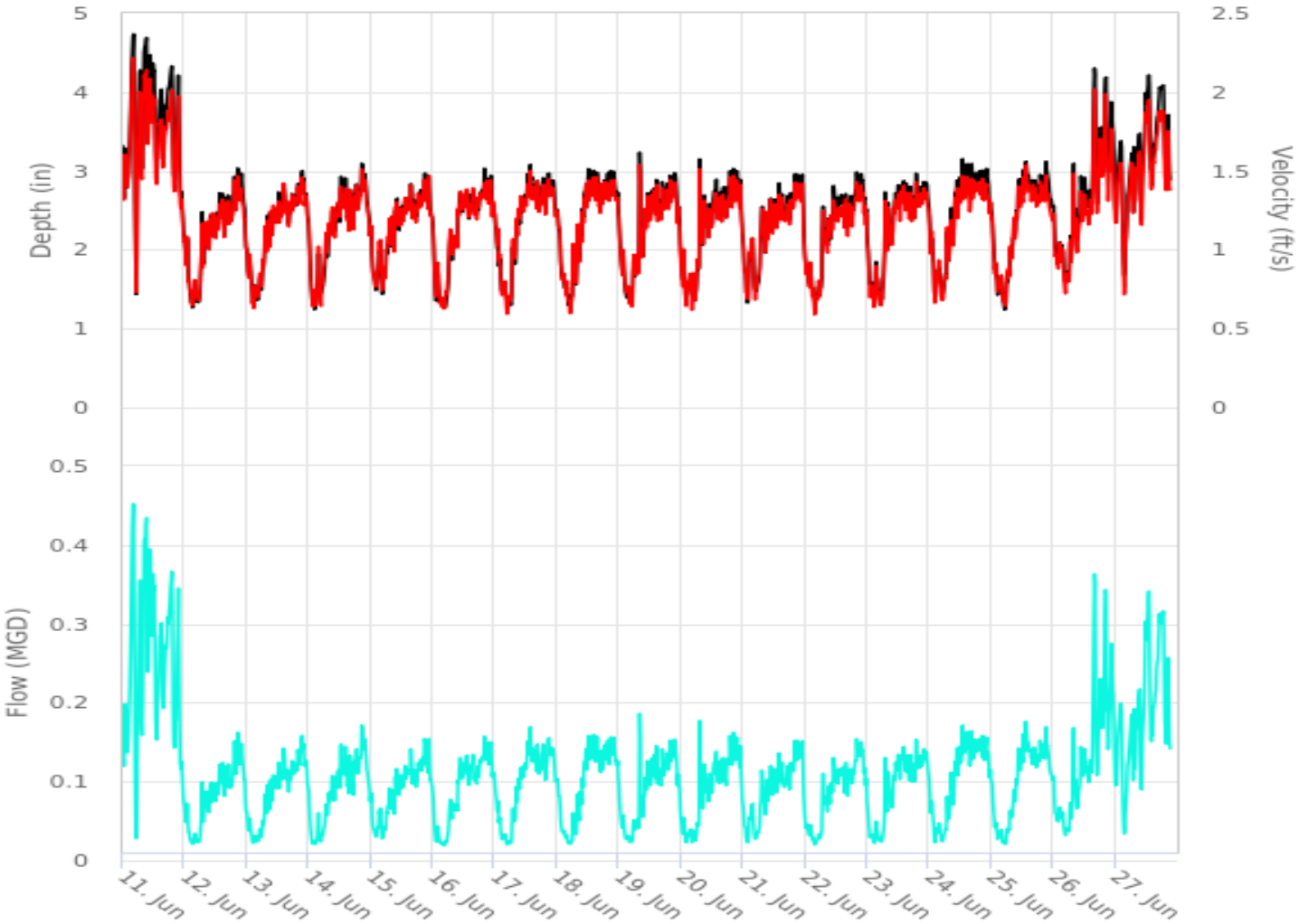
Pipe Height
14.00
in

Report Period

06/11/2023
To
06/27/2023

Legend

DFINAL
QFINAL
VFINAL



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Scattergraph Report

FM_03

Flow Monitor

FM_03

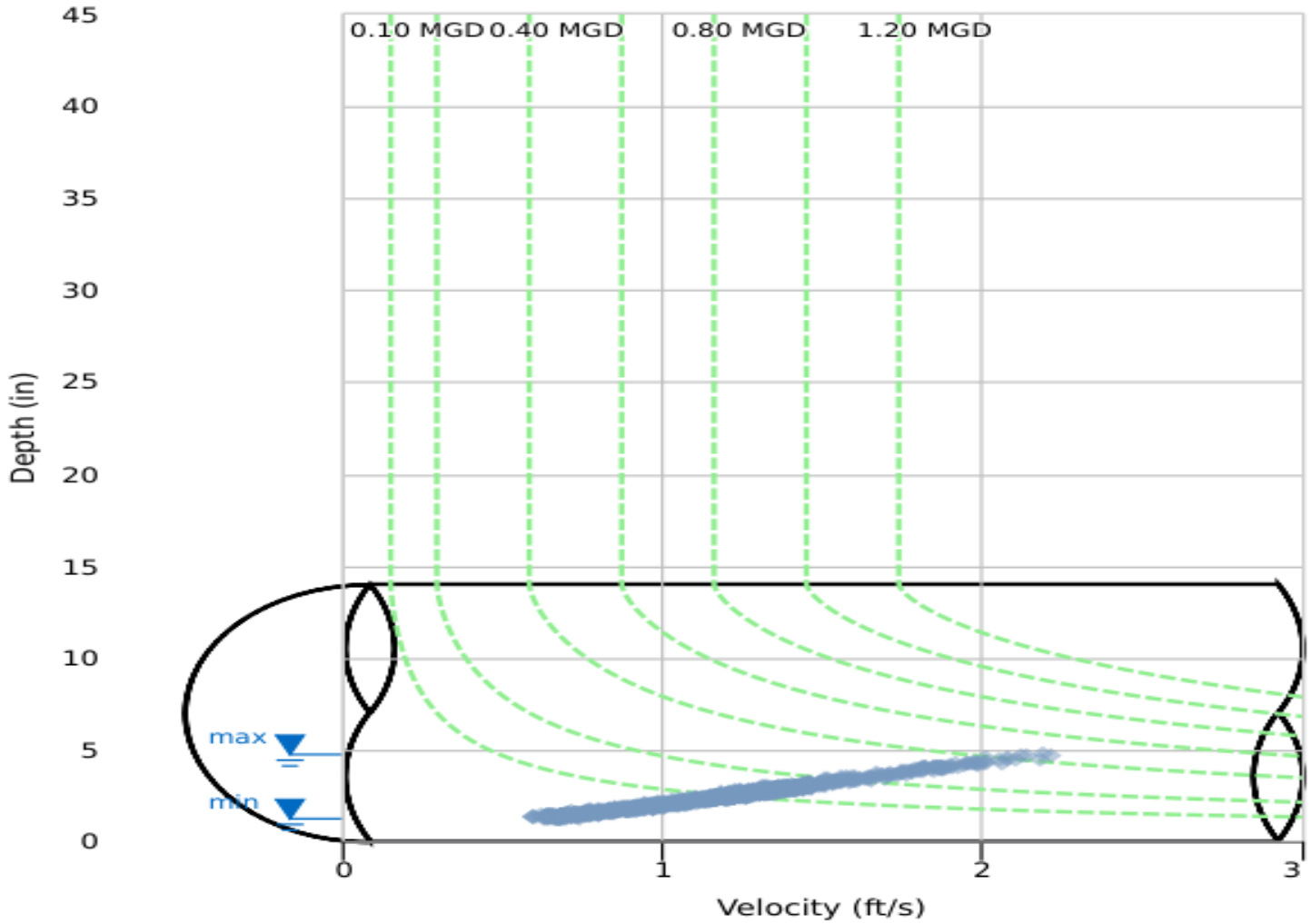
Pipe Height
14.00
in

Report Period

06/11/2023
To
06/27/2023

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Daily Tabular Report

06/11/2023 00:00 - 06/27/2023 23:59
FM_03Pipe: Elliptical (14 in H x 14 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)					
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total
06/11/2023	05:25	1.27	04:15	4.76	3.57	05:25	0.66	04:10	2.25	1.68	05:25	0.021	04:10	0.461	0.247	0.247
06/12/2023	03:10	1.24	20:35	3.05	2.22	03:15	0.61	20:40	1.49	1.09	03:15	0.018	20:35	0.164	0.082	0.082
06/13/2023	02:30	1.27	21:40	3.03	2.27	02:50	0.62	14:25	1.49	1.12	02:30	0.020	21:40	0.160	0.087	0.087
06/14/2023	02:25	1.23	20:40	3.15	2.27	02:45	0.61	20:40	1.56	1.13	02:45	0.020	20:40	0.182	0.089	0.089
06/15/2023	04:35	1.40	20:55	3.11	2.31	01:55	0.71	20:55	1.54	1.15	04:35	0.027	20:55	0.176	0.090	0.090
06/16/2023	04:25	1.26	20:00	3.06	2.26	04:20	0.61	22:25	1.50	1.13	04:20	0.019	20:00	0.166	0.089	0.089
06/17/2023	06:20	1.29	13:40	3.16	2.35	04:50	0.58	13:45	1.54	1.16	04:50	0.019	13:45	0.180	0.096	0.096
06/18/2023	04:30	1.28	12:15	3.10	2.38	05:10	0.59	12:15	1.50	1.16	05:15	0.020	12:15	0.171	0.098	0.098
06/19/2023	04:30	1.34	08:15	3.46	2.30	05:15	0.60	08:15	1.65	1.12	04:25	0.021	08:15	0.219	0.090	0.090
06/20/2023	04:30	1.37	07:20	3.33	2.31	04:20	0.61	07:20	1.59	1.12	04:25	0.022	07:20	0.200	0.090	0.090
06/21/2023	02:05	1.28	07:25	3.47	2.30	02:10	0.66	07:25	1.59	1.13	02:05	0.022	07:25	0.212	0.089	0.089
06/22/2023	04:10	1.29	21:45	3.00	2.28	03:45	0.57	20:05	1.46	1.10	03:45	0.019	20:05	0.158	0.087	0.087
06/23/2023	03:05	1.25	07:05	3.19	2.33	05:40	0.60	19:00	1.48	1.12	05:40	0.021	07:05	0.174	0.092	0.092
06/24/2023	02:15	1.32	08:40	3.43	2.46	02:20	0.65	08:40	1.58	1.17	02:15	0.022	08:40	0.207	0.104	0.104
06/25/2023	05:15	1.23	21:20	3.14	2.40	05:35	0.63	13:35	1.57	1.16	05:15	0.020	13:35	0.181	0.100	0.100
06/26/2023	04:50	1.57	16:10	4.37	2.69	04:45	0.70	16:15	2.07	1.26	04:50	0.030	16:15	0.381	0.130	0.130
06/27/2023	03:40	1.66	13:00	4.22	3.19	03:40	0.68	12:55	2.00	1.50	03:40	0.031	12:55	0.350	0.187	0.167

06/11/2023 00:00 - 06/27/2023 23:59

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)
Total			1.826
Average	2.46	1.19	0.108

FM_04

Site Commentary

SITE INFORMATION

Pipe	Elliptical (14.5 in H x 14.5 in W)
Silt	0.00 (in)

OBSERVATIONS

Surcharge conditions were not experienced. Review of the scattergraph shows that free-flow conditions were experienced during the study. Backwater conditions were observed on 11 June 2023, 12 June 2023, 17 June 2023, and 19 June 2023.

This site was positioned upstream of site FM_06. A review of flow balancing indicated no problems.

Average flow depth, velocity, and quantity data observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	0.69	3.40	0.048
Minimum	0.47	0.38	0.003
Maximum	1.03	6.06	0.101
Min Time	06/16/2023 5:00:00 AM	06/16/2023 3:00:00 AM	06/16/2023 3:00:00 AM
Max Time	06/17/2023 1:15:00 PM	06/15/2023 5:15:00 PM	06/17/2023 1:15:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the fifteen minutes average.

DATA UPTIME

Data uptime observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

GoodYear.Carollo.TFM.AZ23

Flow Monitoring Site Report

ADS ENVIRONMENTAL SERVICES®

Site Name

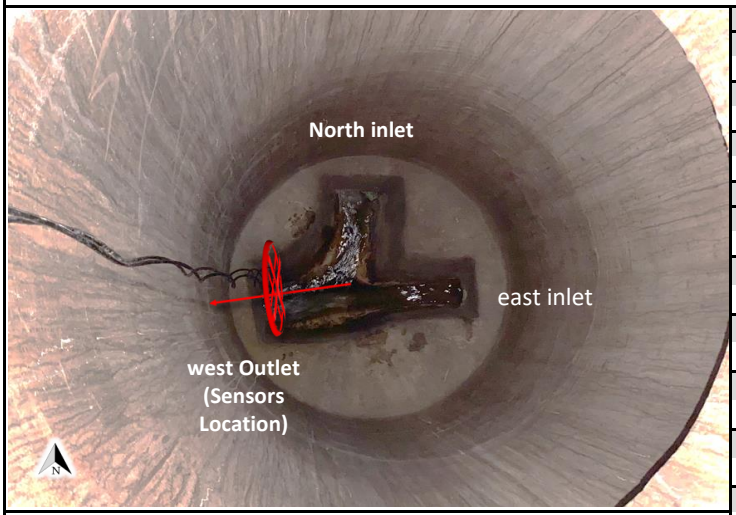
FM_04

Site Address /Location:	17037 W Yuma Rd, Goodyear, AZ 85338			Monitor Series	Location Type
				TRITON+	Temporary
Site Access Details:	External Traffic Control Required	Latitude:	33.4357617	Pipe Size (H x W)	Pipe Shape
		Longitude:	-112.425959°	14.50"x 14.50"	Circular



Manhole #	System Characteristics
MH65C-301	Residential/Commercial
Access	Traffic
Drive	Medium







ADS Project Name:	GoodYear.Carollo.TFM.AZ23
ADS Project Number:	22930.11.325

Installation Information

Installation Date:	Installation Type:
Thursday, June 8, 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4), Smart Depth (CS5)	0 - 5 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW)
8:57:00 AM	14.50"x 14.50"
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
1.13"	-
Downlooker Physical Offset (in)	Measurement Confidence (in)
NA	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
3.58	0''
Silt (in)	Silt Type
0''	

Hydraulic Comments:

Smooth flow with low depth and moderate velocity

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
17	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
26"	54''
Manhole Cover	Manhole Frame
Unbolted	Normal
Active Drop Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
PVC	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

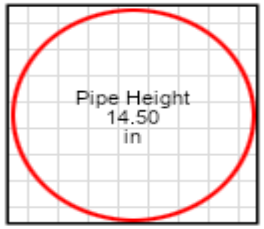
External Traffic Control Required/ reverse installation

Hydrograph Report

FM_04

Flow Monitor

FM_04

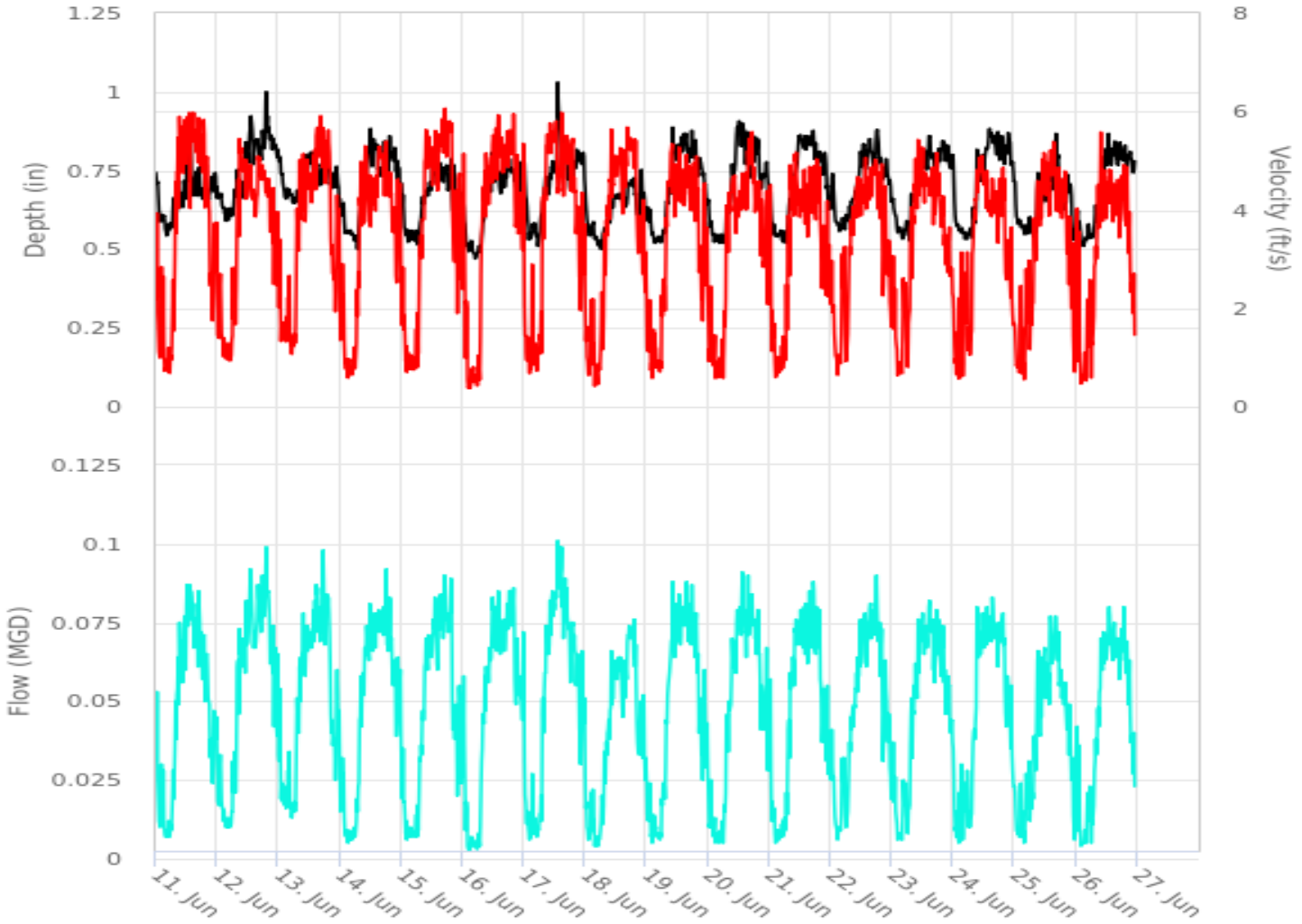


Report Period

06/11/2023
To
06/27/2023

Legend

DFINAL
QFINAL
VFINAL



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Scattergraph Report

FM_04

Flow Monitor

FM_04

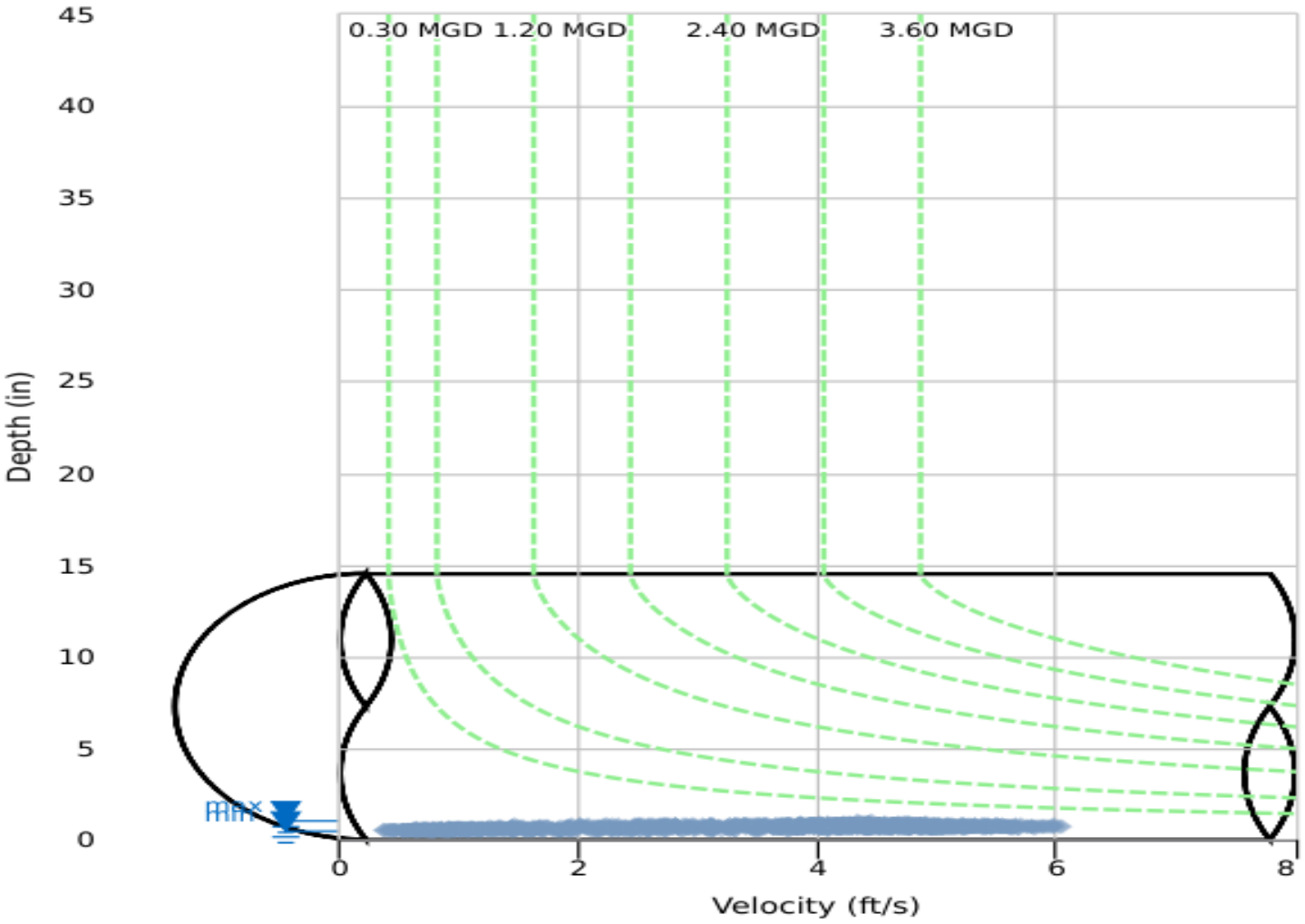
Pipe Height
14.50
in

Report Period

06/11/2023
To
06/27/2023

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Daily Tabular Report

06/11/2023 00:00 - 06/27/2023 23:59
FM_04Pipe: Elliptical (14.5 in H x 14.5 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)					
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total
06/11/2023	04:20	0.54	13:30	0.93	0.67	04:50	0.49	16:55	6.27	3.69	04:50	0.004	16:55	0.091	0.047	0.047
06/12/2023	03:35	0.58	19:10	1.23	0.76	06:05	0.75	08:50	5.68	3.45	06:05	0.008	19:10	0.119	0.054	0.054
06/13/2023	05:40	0.64	17:30	0.85	0.73	05:20	0.99	16:30	6.14	3.61	05:45	0.012	17:40	0.101	0.052	0.052
06/14/2023	07:10	0.49	12:00	0.90	0.70	04:15	0.47	18:15	5.95	3.41	04:15	0.004	18:15	0.101	0.049	0.049
06/15/2023	06:40	0.48	13:20	0.81	0.65	02:20	0.47	17:15	6.29	3.64	02:20	0.004	13:20	0.094	0.047	0.047
06/16/2023	04:55	0.46	11:35	0.82	0.65	03:50	0.31	20:10	6.12	3.70	07:00	0.002	18:20	0.090	0.049	0.049
06/17/2023	05:35	0.50	13:10	1.04	0.72	05:50	0.52	12:45	6.15	3.62	05:50	0.004	13:25	0.106	0.053	0.053
06/18/2023	06:20	0.48	22:00	0.81	0.62	03:55	0.33	10:15	5.84	3.39	03:55	0.003	19:25	0.081	0.040	0.040
06/19/2023	03:25	0.51	10:20	1.07	0.71	02:20	0.38	11:35	5.98	3.30	02:20	0.003	10:20	0.101	0.048	0.048
06/20/2023	02:30	0.52	12:20	0.94	0.71	04:00	0.29	17:20	5.98	3.26	04:00	0.003	13:30	0.098	0.048	0.048
06/21/2023	05:25	0.52	17:20	0.90	0.71	03:45	0.37	10:35	5.63	3.22	03:45	0.003	17:20	0.101	0.048	0.048
06/22/2023	03:35	0.55	18:10	0.89	0.71	03:15	0.45	14:20	5.49	3.30	03:15	0.004	18:10	0.091	0.047	0.047
06/23/2023	04:15	0.52	14:25	0.87	0.71	04:00	0.45	12:15	5.77	3.33	04:00	0.004	20:25	0.089	0.048	0.048
06/24/2023	04:35	0.52	09:20	0.93	0.72	01:30	0.48	13:20	5.67	3.19	01:30	0.005	09:25	0.095	0.047	0.047
06/25/2023	23:40	0.51	16:15	0.88	0.65	23:40	0.49	09:05	5.56	3.19	23:40	0.004	14:00	0.079	0.040	0.040
06/26/2023	02:35	0.51	12:50	0.89	0.70	06:10	0.32	09:45	5.69	3.13	06:10	0.003	13:10	0.086	0.045	0.043
06/27/2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

06/11/2023 00:00 - 06/27/2023 23:59

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)
Total			0.761
Average	0.69	3.40	0.048

FM_05

Site Commentary

SITE INFORMATION

Pipe	Elliptical (30.5 in H x 30 in W)
Silt	0.00 (in)

OBSERVATIONS

Surcharge conditions were not experienced. Review of the scattergraph shows that free-flow conditions were maintained throughout the study.

This site was positioned downstream of site FM_13 and upstream of site FM_15. A review of flow balancing indicated no problems.

Average flow depth, velocity, and quantity data observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	7.62	2.83	1.832
Minimum	4.70	1.84	0.584
Maximum	11.08	3.71	3.911
Min Time	06/11/2023 6:00:00 AM	06/11/2023 6:45:00 AM	06/11/2023 6:45:00 AM
Max Time	06/23/2023 12:30:00 PM	06/23/2023 1:30:00 PM	06/23/2023 1:30:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the fifteen minutes average.

DATA UPTIME

Data uptime observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

GoodYear.Carollo.TFM.AZ23

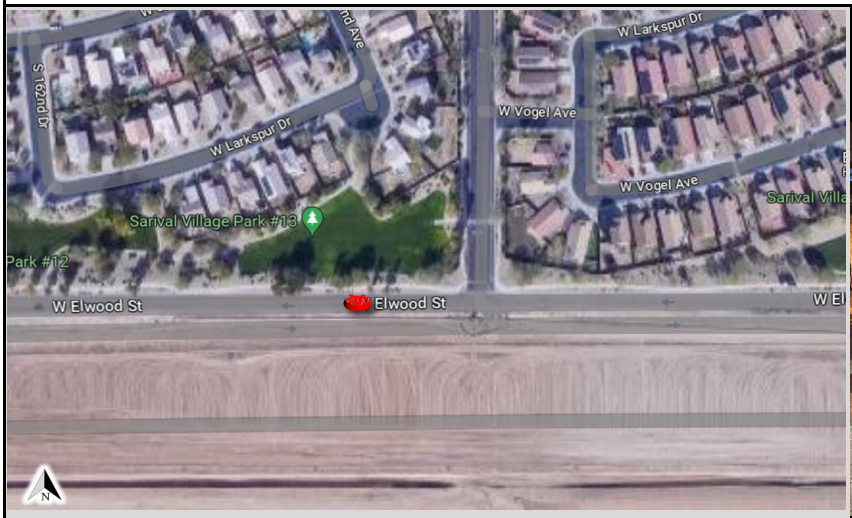
Flow Monitoring Site Report

ADS ENVIRONMENTAL SERVICES®

Site Name

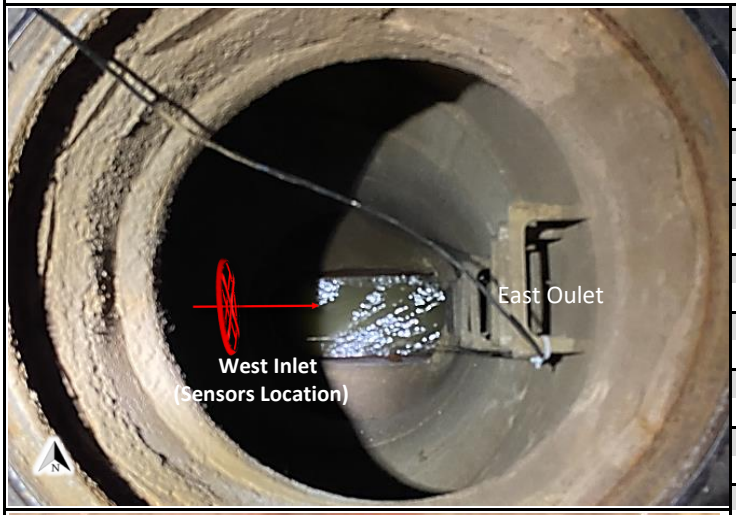
FM_05

Site Address /Location:	16099 W Vogel Ave, Goodyear, AZ 85338			Monitor Series	Location Type
				TRITON+	Temporary
Site Access Details:	External Traffic Control Required	Latitude:	33.4136493	Pipe Size (H x W)	Pipe Shape
		Longitude:	-112.4056134°	30.50"x 30.00"	Elliptical



Manhole #	System Characteristics
MH86A-301	Residential/Commercial
Access	**Traffic**
Drive	Medium







ADS Project Name:	GoodYear.Carollo.TFM.AZ23
ADS Project Number:	22930.11.325

Installation Information

Installation Date:	Installation Type:
Thursday, June 8, 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4)	0 - 5 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW)
7:58:00 PM	30.50"x 30.00"
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
7.88"	-
Downlooker Physical Offset (in)	Measurement Confidence (in)
NA	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
2.86	0''
Silt (in)	Silt Type
0''	

Hydraulic Comments:

Smooth flow with medium depth and low velocity

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
18.07	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
26"	54''
Manhole Cover	Manhole Frame
Unbolted	Normal
Active Drop Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Vitrified Clay Pipe	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

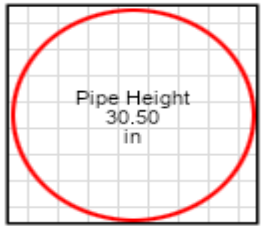
External Traffic Control Required

Hydrograph Report

FM_05

Flow Monitor

FM_05

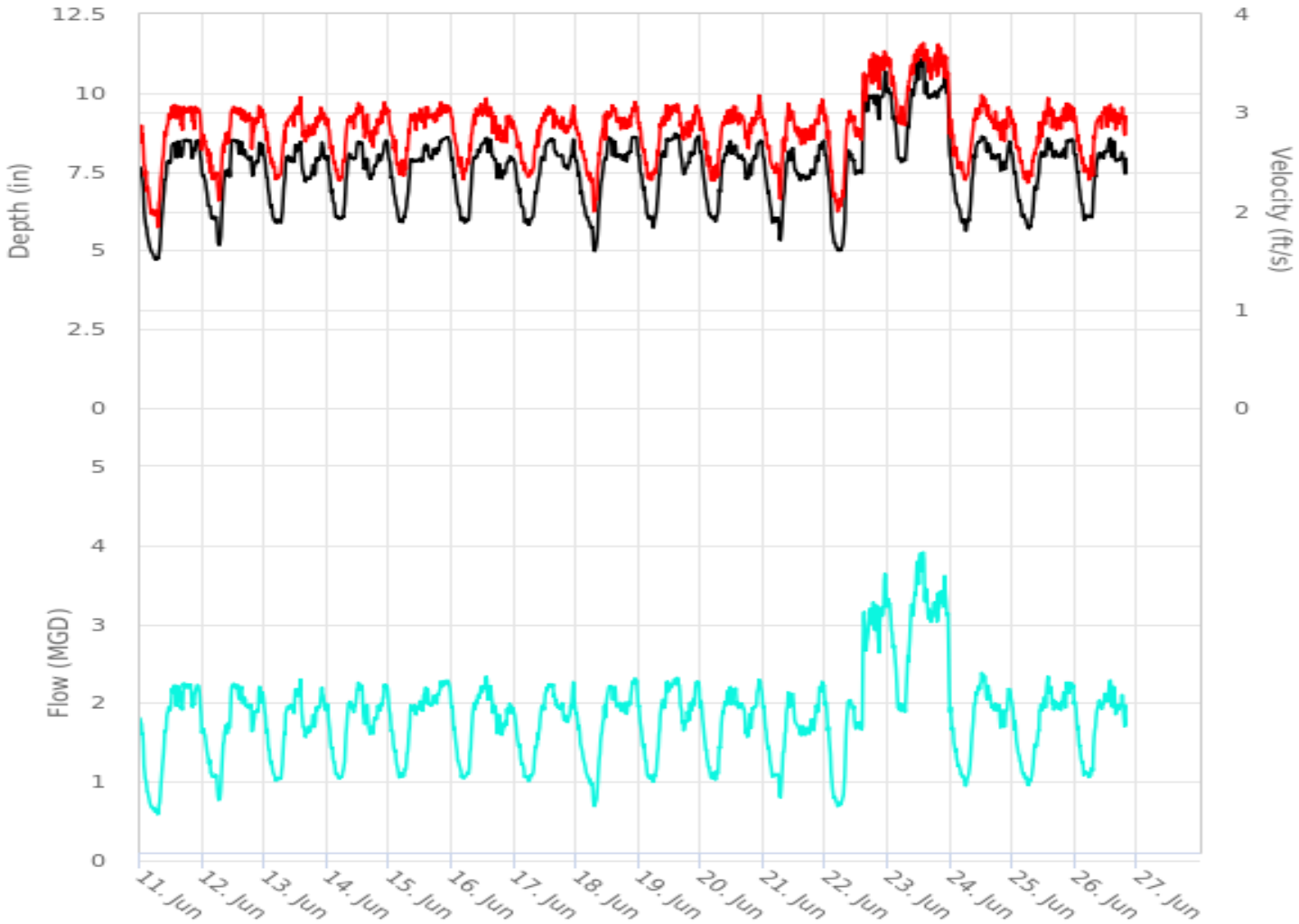


Report Period

06/11/2023
To
06/27/2023

Legend

DFINAL
QFINAL
VFINAL



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Scattergraph Report

FM_05

Flow Monitor

FM_05

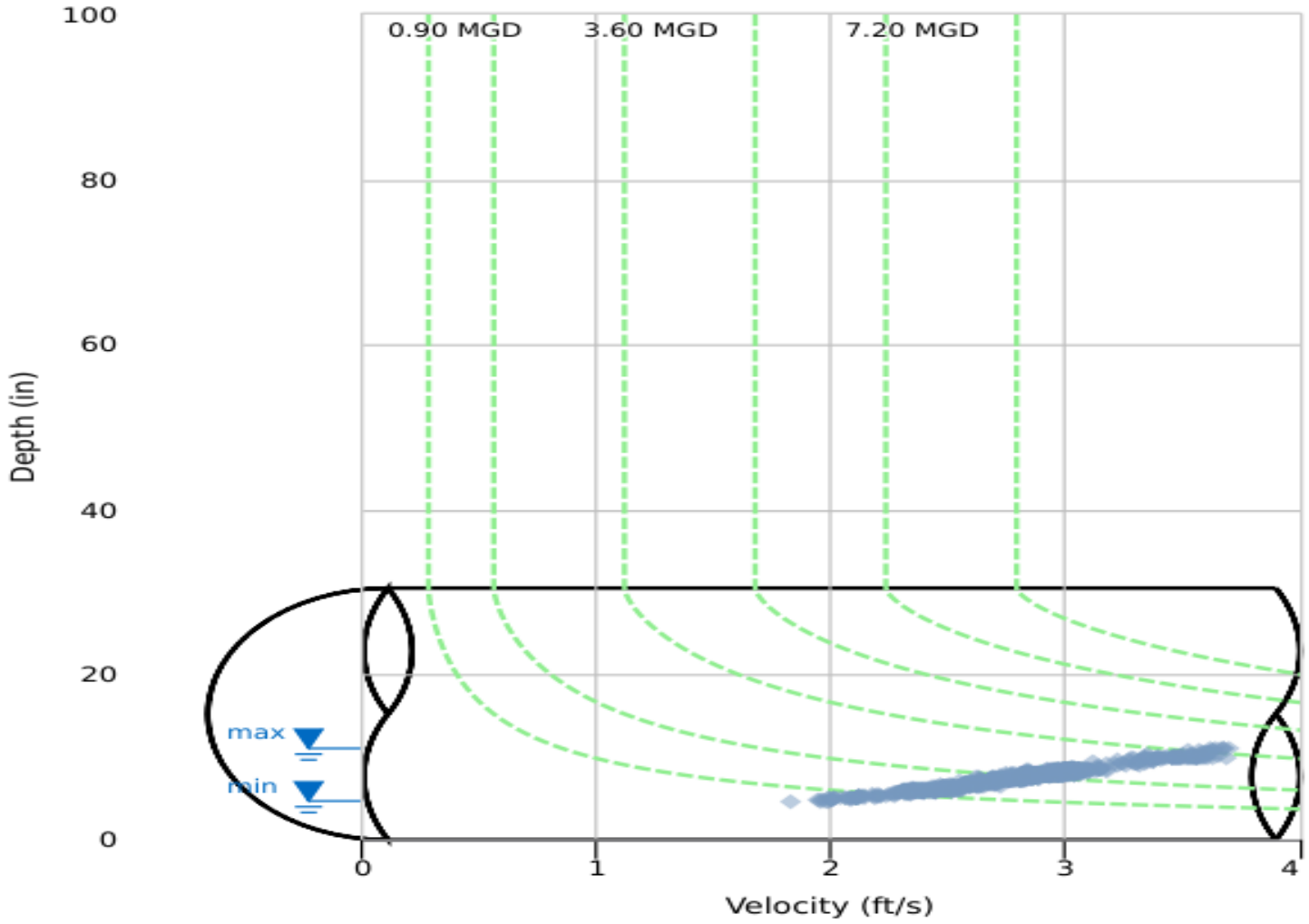
Pipe Height
30.50
in

Report Period

06/11/2023
To
06/27/2023

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Daily Tabular Report

06/11/2023 00:00 - 06/27/2023 23:59
FM_05Pipe: Elliptical (30.5 in H x 30 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)					
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total
06/11/2023	06:15	4.69	16:50	8.55	7.18	06:50	1.74	14:15	3.15	2.69	06:50	0.555	17:35	2.270	1.634	1.634
06/12/2023	06:40	5.15	11:55	8.55	7.40	06:25	2.06	12:20	3.15	2.76	06:25	0.745	12:20	2.319	1.705	1.705
06/13/2023	04:35	5.86	13:45	8.45	7.37	05:25	2.25	13:55	3.19	2.79	05:25	0.987	13:55	2.321	1.699	1.699
06/14/2023	04:55	5.97	13:25	8.50	7.51	05:05	2.28	22:00	3.13	2.80	04:55	1.018	12:05	2.276	1.751	1.751
06/15/2023	05:05	5.88	22:25	8.61	7.62	04:15	2.32	19:45	3.15	2.85	04:55	1.033	19:45	2.323	1.823	1.823
06/16/2023	05:00	5.86	13:25	8.58	7.48	04:35	2.24	13:20	3.20	2.81	04:35	1.008	13:20	2.371	1.745	1.745
06/17/2023	05:35	5.80	14:05	8.57	7.44	06:55	2.22	22:55	3.16	2.78	05:40	0.991	22:55	2.335	1.717	1.717
06/18/2023	07:05	4.96	21:50	8.63	7.39	06:45	1.98	13:50	3.17	2.75	07:00	0.684	22:35	2.329	1.700	1.700
06/19/2023	05:40	5.68	14:05	8.73	7.65	05:05	2.26	10:40	3.16	2.80	05:35	0.983	15:00	2.339	1.800	1.800
06/20/2023	05:25	5.86	11:25	8.52	7.53	06:30	2.25	22:20	3.20	2.80	05:30	1.008	22:20	2.317	1.760	1.760
06/21/2023	06:25	5.29	23:20	8.49	7.26	06:40	2.08	09:35	3.16	2.76	06:35	0.787	22:30	2.285	1.648	1.648
06/22/2023	04:40	4.97	22:55	10.72	7.98	04:30	1.98	18:20	3.66	2.92	04:35	0.682	22:50	3.681	2.088	2.088
06/23/2023	05:00	7.78	12:30	11.15	9.65	23:50	2.72	13:40	3.79	3.38	23:50	1.832	13:40	3.986	2.989	2.989
06/24/2023	06:00	5.57	12:00	8.64	7.52	05:30	2.29	12:10	3.22	2.80	06:00	0.926	12:10	2.403	1.763	1.763
06/25/2023	06:00	5.64	13:35	8.59	7.49	05:35	2.25	13:40	3.22	2.78	06:05	0.948	13:40	2.372	1.742	1.742
06/26/2023	03:40	5.94	13:35	8.57	7.46	05:25	2.24	18:10	3.11	2.79	03:20	1.015	13:40	2.293	1.733	1.426
06/27/2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

06/11/2023 00:00 - 06/27/2023 23:59

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)
Total			28.989
Average	7.62	2.83	1.832

FM_06

Site Commentary

SITE INFORMATION

Pipe	Elliptical (54 in H x 53.5 in W)
Silt	0.00 (in)

OBSERVATIONS

Surcharge conditions were not experienced. Review of the scattergraph shows that free-flow conditions were maintained throughout the study.

This site was positioned downstream of sites FM_04 and FM_14 and upstream of site FM_16. A review of flow balancing indicated no problems.

Average flow depth, velocity, and quantity data observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	6.41	2.76	1.920
Minimum	3.66	1.91	0.586
Maximum	10.91	3.27	4.568
Min Time	06/13/2023 5:15:00 AM	06/13/2023 5:00:00 AM	06/13/2023 5:00:00 AM
Max Time	06/13/2023 10:45:00 AM	06/13/2023 11:15:00 AM	06/13/2023 11:30:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the fifteen minutes average.

DATA UPTIME

Data uptime observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

GoodYear.Carollo.TFM.AZ23

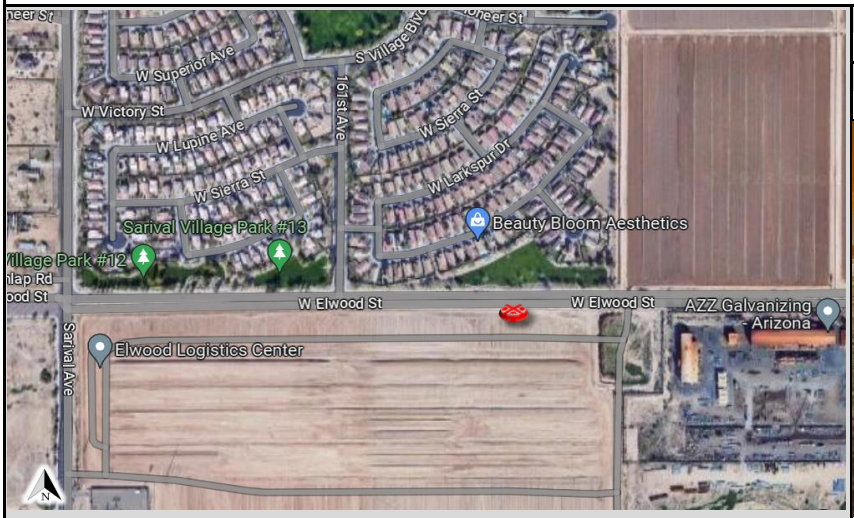
Flow Monitoring Site Report

ADS ENVIRONMENTAL SERVICES®

Site Name

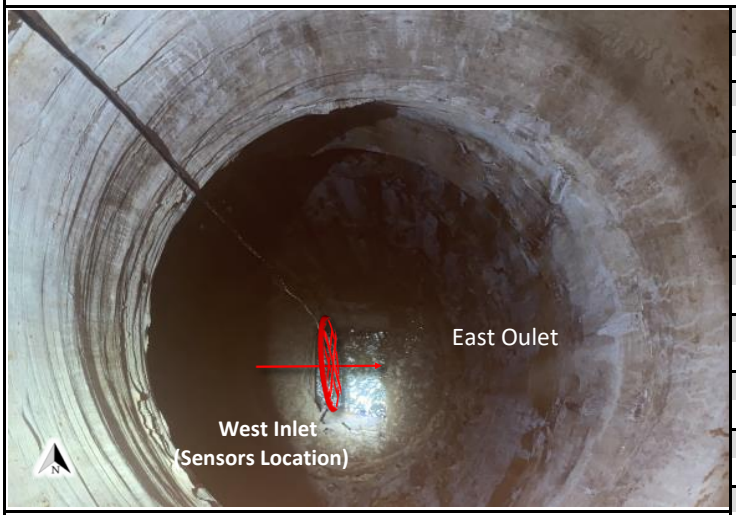
FM_06

Site Address /Location:	15775 W Elwood St, Goodyear, AZ 85338			Monitor Series	Location Type
				TRITON+	Temporary
Site Access Details:	External Traffic Control Required	Latitude:	33.4134711	Pipe Size (H x W)	Pipe Shape
		Longitude:	-112.4023421°	54.00"x 53.50"	Elliptical



Manhole #	System Characteristics
MH86C-203	Residential/Commercial
Access	Traffic
Drive	Light







ADS Project Name:	GoodYear.Carollo.TFM.AZ23
ADS Project Number:	22930.11.325

Installation Information

Installation Date:	Installation Type:
Monday, June 5, 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4)	0 - 5 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW)
9:23:00 PM	54.00"x 53.50"
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
6.75"	-
Downlooker Physical Offset (in)	Measurement Confidence (in)
NA	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
3.58	0''
Silt (in)	Silt Type
0''	

Hydraulic Comments:
Smooth flow with medium depth and low velocity

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
30.45	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
26"	54''
Manhole Cover	Manhole Frame
Unbolted	Normal
Active Drop Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Concrete	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

External Traffic Control Required

Hydrograph Report

FM_06

Flow Monitor

FM_06

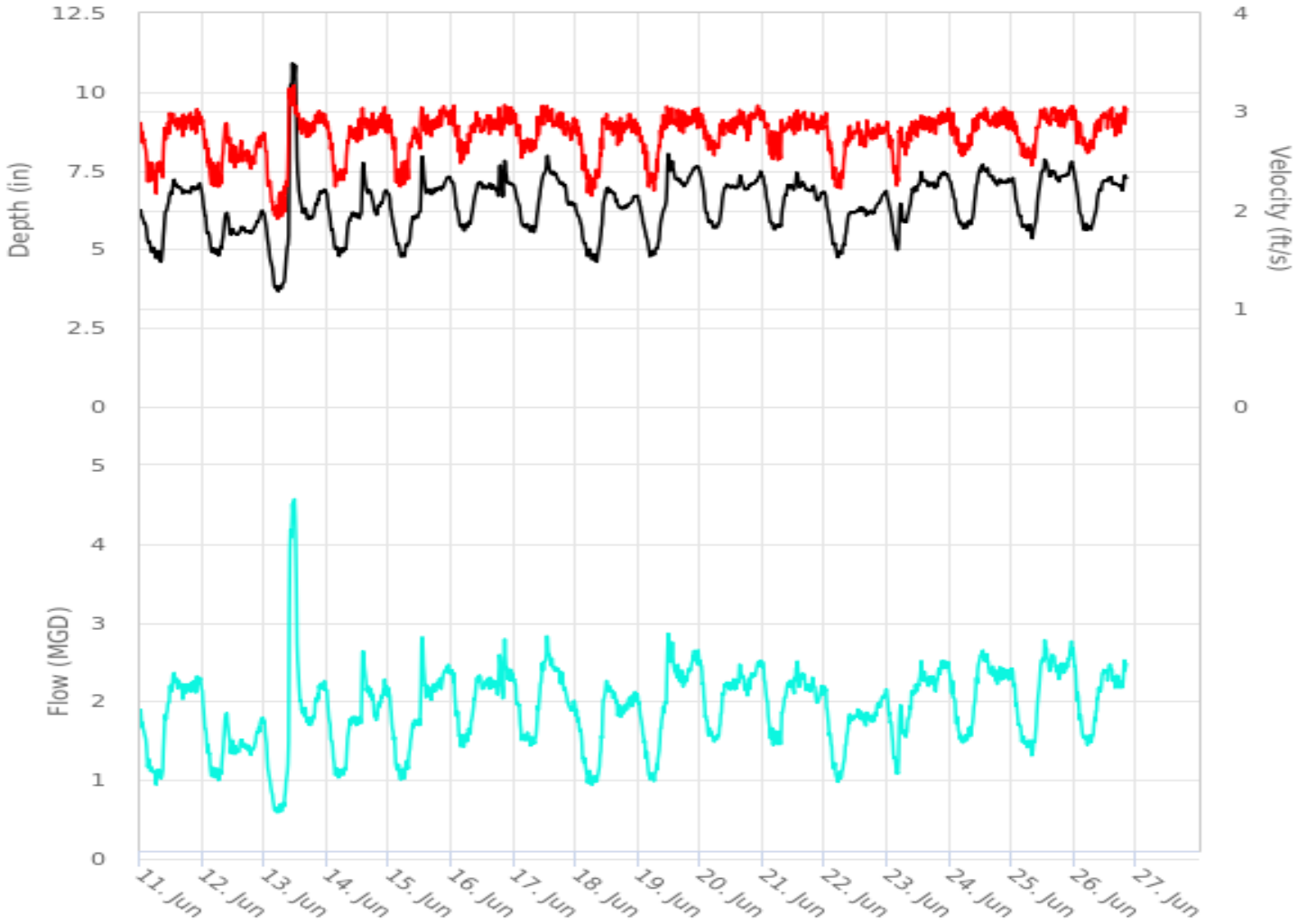
Pipe Height
54.00
in

Report Period

06/11/2023
To
06/27/2023

Legend

DFINAL
QFINAL
VFINAL



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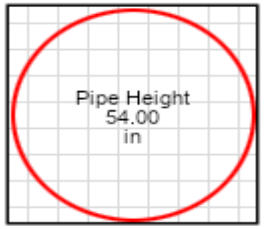
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Scattergraph Report

FM_06

Flow Monitor

FM_06



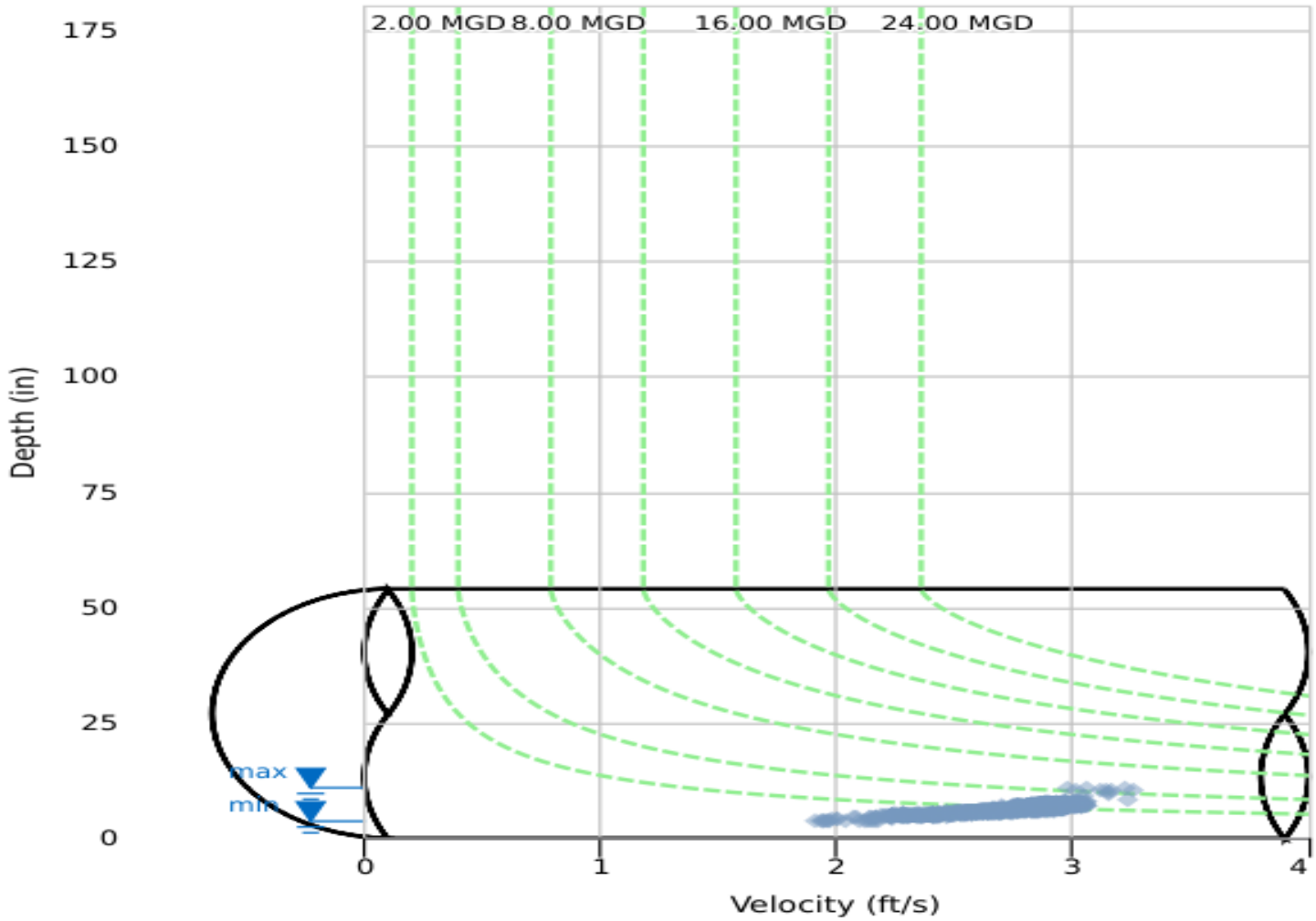
Report Period

06/11/2023
To
06/27/2023

Legend

DFINAL - VFINAL
Iso-Q™
Min-Max Depth

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Daily Tabular Report

06/11/2023 00:00 - 06/27/2023 23:59
FM_06Pipe: Elliptical (54 in H x 53.5 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)					
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total
06/11/2023	08:05	4.57	13:15	7.26	6.22	06:20	2.13	11:40	3.10	2.73	06:20	0.922	13:15	2.417	1.818	1.818
06/12/2023	06:20	4.78	00:00	6.78	5.60	03:40	2.15	00:05	2.96	2.57	06:20	0.967	00:05	2.174	1.445	1.445
06/13/2023	05:20	3.65	11:40	11.14	6.14	05:10	1.82	11:25	3.36	2.65	05:10	0.554	11:40	4.749	1.836	1.836
06/14/2023	04:50	4.77	14:00	7.76	6.10	03:25	2.18	13:40	3.13	2.73	04:40	0.996	13:55	2.707	1.760	1.760
06/15/2023	04:35	4.75	12:55	7.97	6.29	04:25	2.17	21:10	3.09	2.74	04:45	0.967	12:40	2.844	1.856	1.856
06/16/2023	05:00	5.55	20:35	7.87	6.71	04:20	2.40	01:05	3.11	2.84	04:20	1.375	20:35	2.825	2.084	2.084
06/17/2023	07:50	5.52	12:55	7.98	6.64	03:05	2.46	12:45	3.12	2.82	06:30	1.403	13:05	2.859	2.044	2.044
06/18/2023	08:00	4.59	12:20	6.98	6.00	06:05	2.13	11:50	3.05	2.69	06:05	0.929	11:50	2.316	1.695	1.695
06/19/2023	04:35	4.75	11:35	8.07	6.56	04:10	2.12	11:05	3.08	2.77	04:45	0.941	11:35	2.930	1.998	1.998
06/20/2023	05:05	5.65	23:10	7.50	6.74	05:25	2.47	22:10	3.13	2.85	05:25	1.441	22:10	2.575	2.098	2.098
06/21/2023	04:30	5.58	13:00	7.44	6.65	03:55	2.42	19:10	3.08	2.83	03:55	1.406	13:15	2.572	2.046	2.046
06/22/2023	05:00	4.71	23:30	6.90	5.99	04:45	2.16	20:40	3.07	2.68	05:00	0.942	00:20	2.197	1.676	1.676
06/23/2023	03:50	4.96	13:15	7.49	6.68	03:35	2.22	23:40	3.08	2.79	03:35	1.064	20:45	2.562	2.038	2.038
06/24/2023	06:35	5.55	12:45	7.71	6.81	04:40	2.47	13:55	3.14	2.84	06:35	1.429	12:50	2.690	2.131	2.131
06/25/2023	07:50	5.33	12:40	7.88	6.83	07:35	2.36	11:10	3.12	2.84	07:35	1.253	12:40	2.839	2.150	2.150
06/26/2023	03:50	5.59	00:00	7.43	6.65	04:45	2.45	20:00	3.13	2.84	04:45	1.401	20:00	2.555	2.058	1.729
06/27/2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

06/11/2023 00:00 - 06/27/2023 23:59

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)
Total			30.405
Average	6.41	2.76	1.919

FM_07

Site Commentary

SITE INFORMATION

Pipe	Elliptical (12 in H x 12 in W)
Silt	0.00 (in)

OBSERVATIONS

Surcharge conditions were not experienced. Review of the scattergraph shows that free-flow conditions were maintained throughout the study.

This site was positioned upstream of site FM_01. A review of flow balancing indicated no problems.

Average flow depth, velocity, and quantity data observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	2.95	1.24	0.127
Minimum	1.87	0.68	0.035
Maximum	5.32	1.77	0.388
Min Time	06/23/2023 3:45:00 AM	06/22/2023 3:30:00 AM	06/22/2023 3:30:00 AM
Max Time	06/26/2023 10:45:00 AM	06/26/2023 10:30:00 AM	06/26/2023 10:30:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the fifteen minutes average.

DATA UPTIME

Data uptime observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

GoodYear.Carollo.TFM.AZ23

Flow Monitoring Site Report

ADS ENVIRONMENTAL SERVICES®

Site Name

FM_07

Site Address /Location:	1300 S Litchfield Rd, Goodyear, AZ 85338			Monitor Series	Location Type
				TRITON+	Temporary
Site Access Details:	External Traffic Control Required	Latitude:	33.4329212	Pipe Size (H x W)	Pipe Shape
		Longitude:	-112.358208°	12.00"x 12.00"	Circular



Manhole #	System Characteristics
MH79A-101	Residential/Commercial
Access	Traffic
Drive	Light







ADS Project Name:	GoodYear.Carollo.TFM.AZ23
ADS Project Number:	22930.11.325

Installation Information

Installation Date:	Installation Type:
Wednesday, June 7, 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4)	0 - 5 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW)
7:41:00 PM	12.00"x 12.00"
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
4.00 "	-
Downlooker Physical Offset (in)	Measurement Confidence (in)
NA	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
1.56	0''
Silt (in)	Silt Type
0''	

Hydraulic Comments:
Smooth flow with medium depth and low velocity

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
8.71	Single
Manhole Material:	Manhole Condition:
Brick	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
26"	54''
Manhole Cover	Manhole Frame
Unbolted	Normal
Active Drop Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Vitrified Clay Pipe	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

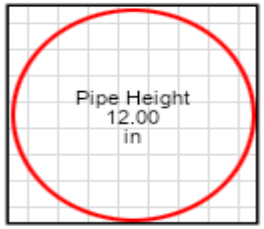
External Traffic Control Required

Hydrograph Report

FM_07

Flow Monitor

FM_07

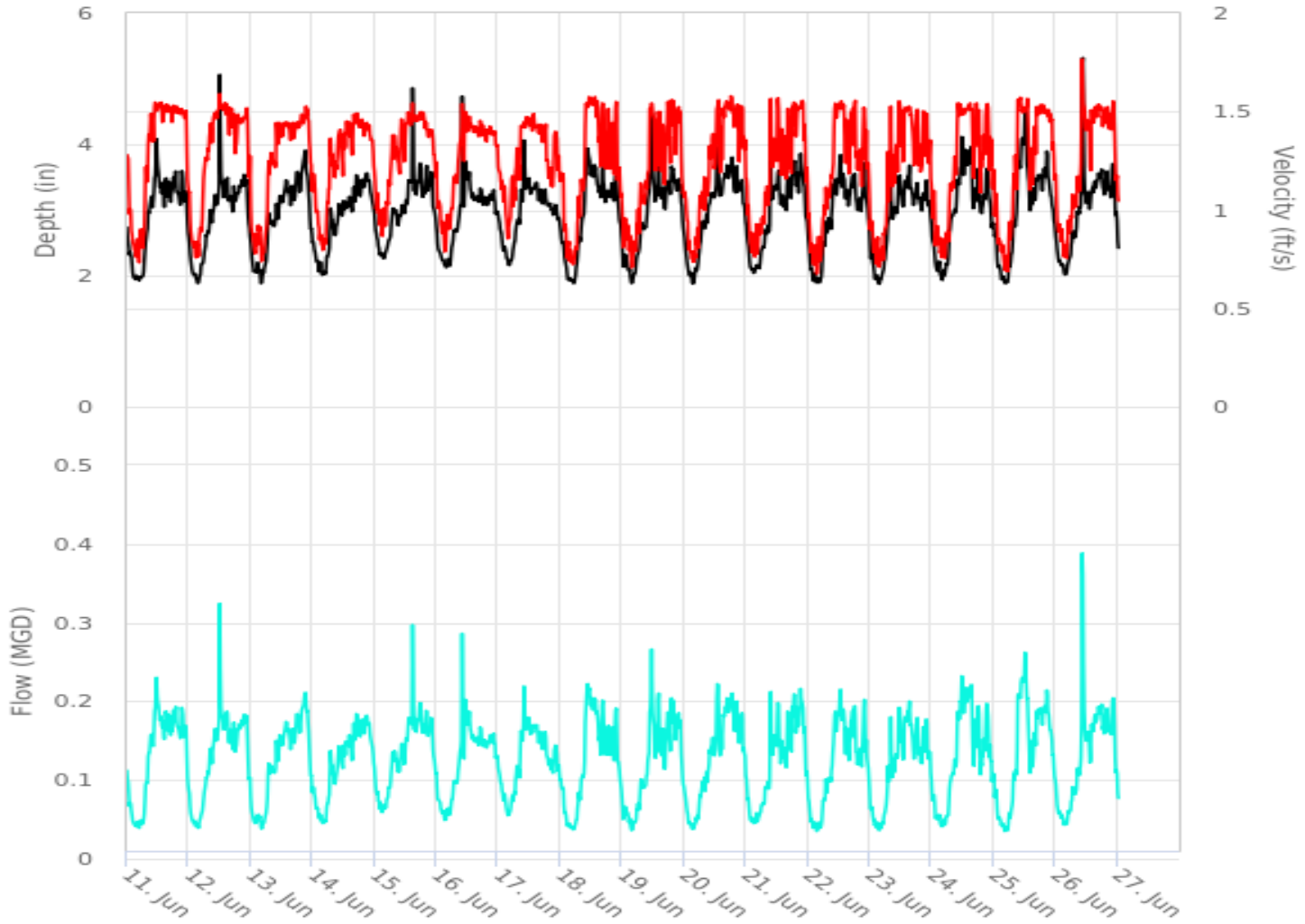


Report Period

06/11/2023
To
06/27/2023

Legend

DFINAL
QFINAL
VFINAL



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Scattergraph Report

FM_07

Flow Monitor

FM_07

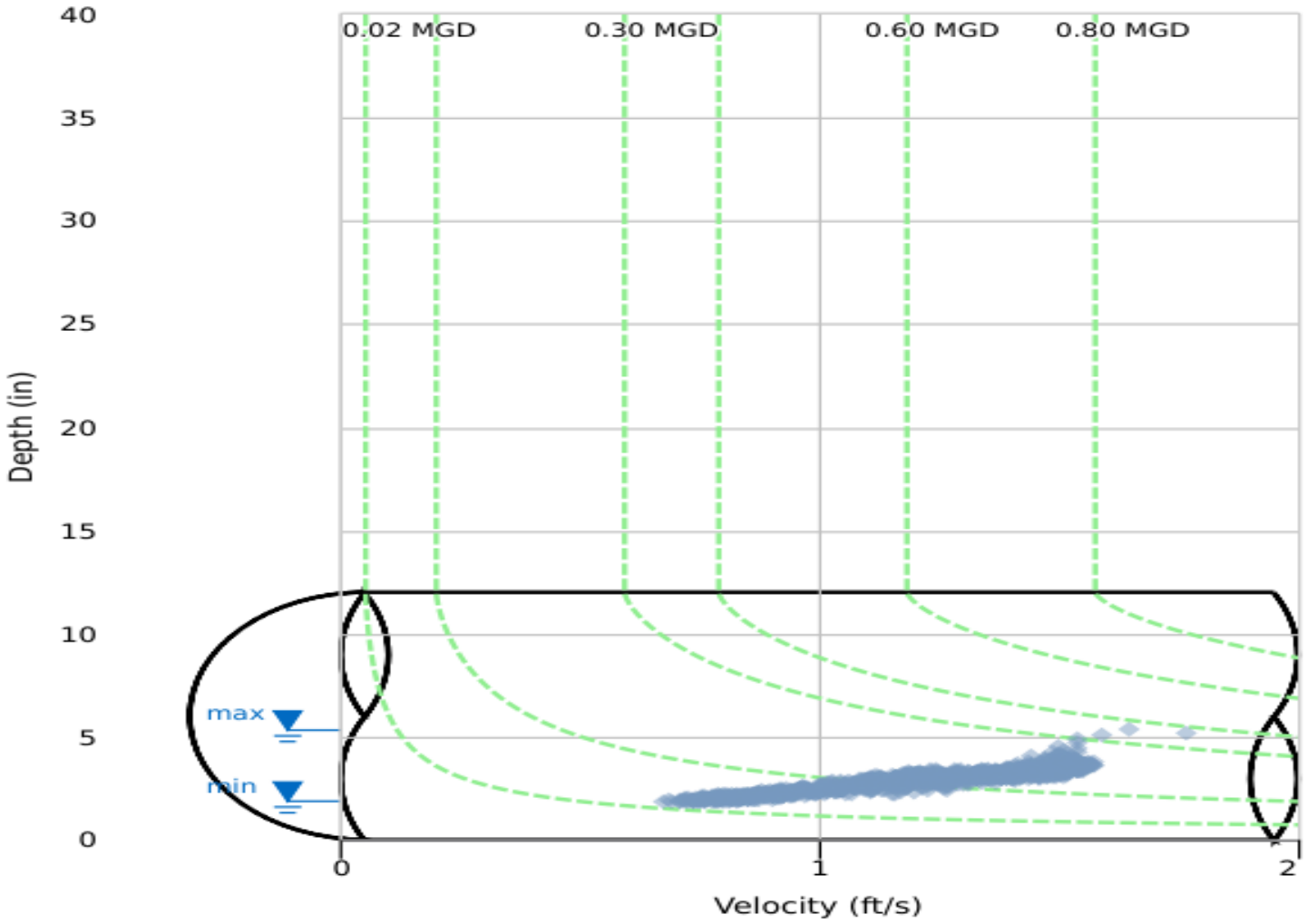
Pipe Height
12.00
in

Report Period

06/11/2023
To
06/27/2023

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Daily Tabular Report

06/11/2023 00:00 - 06/27/2023 23:59
FM_07Pipe: Elliptical (12 in H x 12 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)					
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total
06/11/2023	04:50	1.92	11:35	4.09	2.92	04:45	0.69	15:35	1.56	1.29	04:45	0.037	11:35	0.232	0.132	0.132
06/12/2023	03:30	1.88	12:05	5.20	2.90	02:40	0.74	12:05	1.60	1.30	03:50	0.039	12:05	0.338	0.130	0.130
06/13/2023	04:05	1.87	21:15	3.94	2.91	04:20	0.72	21:30	1.55	1.23	04:20	0.037	21:15	0.213	0.124	0.124
06/14/2023	03:50	2.00	21:00	3.56	2.87	03:35	0.76	17:15	1.50	1.25	03:35	0.043	17:10	0.186	0.122	0.122
06/15/2023	03:50	2.25	14:45	5.07	3.03	03:00	0.86	14:40	1.56	1.29	03:30	0.059	14:45	0.317	0.135	0.135
06/16/2023	03:50	2.12	10:05	4.90	2.93	03:20	0.75	10:00	1.55	1.26	03:20	0.047	10:05	0.301	0.126	0.126
06/17/2023	04:20	2.15	10:05	4.09	2.96	03:40	0.79	13:45	1.50	1.26	03:40	0.052	10:05	0.221	0.127	0.127
06/18/2023	05:15	1.88	10:40	3.95	2.95	04:45	0.68	11:15	1.58	1.21	04:45	0.036	10:40	0.224	0.126	0.126
06/19/2023	03:55	1.87	11:30	4.62	2.93	03:45	0.65	11:25	1.58	1.19	03:45	0.033	11:30	0.280	0.123	0.123
06/20/2023	03:45	1.87	13:05	3.96	2.98	03:45	0.70	18:40	1.60	1.23	03:45	0.035	13:10	0.224	0.129	0.129
06/21/2023	03:05	2.03	09:40	4.02	2.96	02:20	0.71	09:35	1.61	1.21	02:20	0.042	09:45	0.232	0.125	0.125
06/22/2023	03:25	1.87	12:45	3.90	2.91	03:35	0.64	18:25	1.56	1.20	03:35	0.033	12:45	0.220	0.121	0.121
06/23/2023	03:55	1.86	15:30	3.70	2.88	05:15	0.68	11:15	1.56	1.21	03:45	0.035	15:30	0.202	0.120	0.120
06/24/2023	04:25	1.92	11:55	4.25	2.99	03:25	0.73	21:55	1.56	1.22	04:10	0.040	11:50	0.242	0.129	0.129
06/25/2023	04:55	1.87	12:20	4.55	3.04	05:30	0.64	13:30	1.59	1.24	05:30	0.033	12:20	0.266	0.135	0.135
06/26/2023	03:50	2.01	10:40	6.15	3.01	04:30	0.70	10:40	1.90	1.25	04:25	0.040	10:40	0.498	0.133	0.133
06/27/2023	00:30	2.42	00:00	2.94	2.64	00:25	0.93	00:00	1.31	1.11	00:25	0.069	00:00	0.126	0.093	0.002

06/11/2023 00:00 - 06/27/2023 23:59

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)
Total			2.038
Average	2.95	1.24	0.127

FM_08

Site Commentary

SITE INFORMATION

Pipe	Elliptical (22.5 in H x 22.5 in W)
Silt	0.00 (in)

OBSERVATIONS

Surcharge conditions were not experienced. Review of the scattergraph shows that free-flow conditions were maintained throughout the study.

This site was positioned upstream of site FM_16. A review of flow balancing indicated no problems.

Average flow depth, velocity, and quantity data observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	6.24	1.26	0.514
Minimum	5.54	1.07	0.371
Maximum	8.30	1.61	0.945
Min Time	06/19/2023 7:30:00 AM	06/16/2023 7:45:00 AM	06/15/2023 11:00:00 PM
Max Time	06/12/2023 3:15:00 PM	06/13/2023 11:45:00 AM	06/12/2023 2:15:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the fifteen minutes average.

DATA UPTIME

Data uptime observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

GoodYear.Carollo.TFM.AZ23

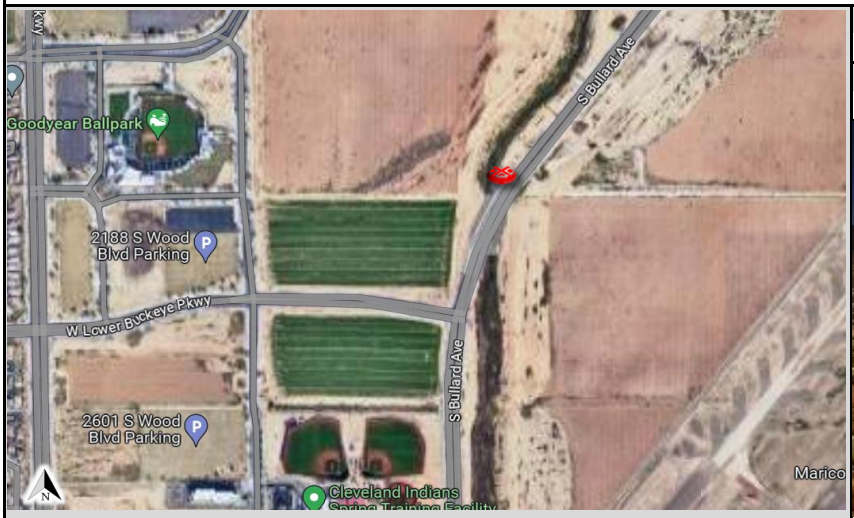
Flow Monitoring Site Report

ADS ENVIRONMENTAL SERVICES®

Site Name

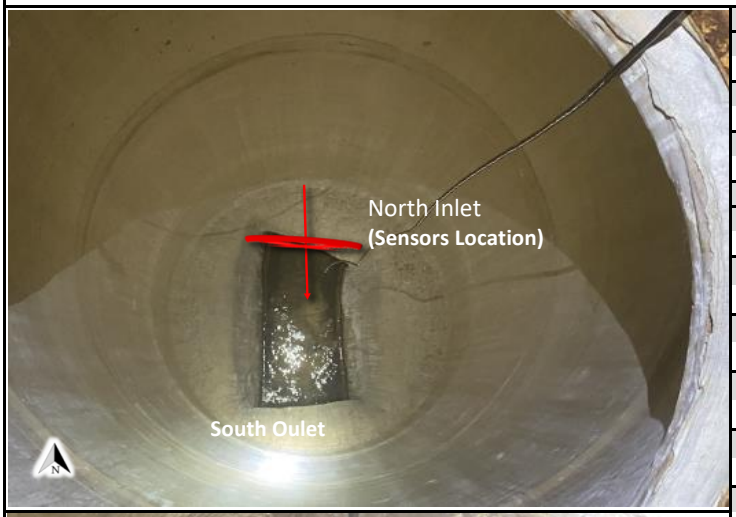
FM_08

Site Address /Location:	Between W Lower Buckeye Pkwy and S Bullard Ave			Monitor Series	Location Type
				TRITON+	Temporary
Site Access Details:	External Traffic Control Required	Latitude:	33.4283388	Pipe Size (H x W)	Pipe Shape
		Longitude:	-112.3832062°	22.50"x 22.50"	Circular



Manhole #	System Characteristics
MH77B-308	Residential/Commercial
Access	Traffic
Drive	Light







ADS Project Name:	GoodYear.Carollo.TFM.AZ23
ADS Project Number:	22930.11.325

Installation Information

Installation Date:	Installation Type:
Monday, June 5, 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4)	0 - 5 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW)
11:37:00 PM	22.50"x 22.50"
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
6.75 "	-
Downlooker Physical Offset (in)	Measurement Confidence (in)
NA	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
1.51	0''
Silt (in)	Silt Type
0''	

Hydraulic Comments:
Smooth flow with medium depth and low velocity

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
17.77	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
26"	54''
Manhole Cover	Manhole Frame
Unbolted	Normal
Active Drop Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Concrete	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

External Traffic Control Required

Hydrograph Report

FM_08

Flow Monitor

FM_08

Pipe Height
22.50
in

Report Period

06/11/2023
To
06/27/2023

Legend

DFINAL
QFINAL
VFINAL



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Scattergraph Report

FM_08

Flow Monitor

FM_08

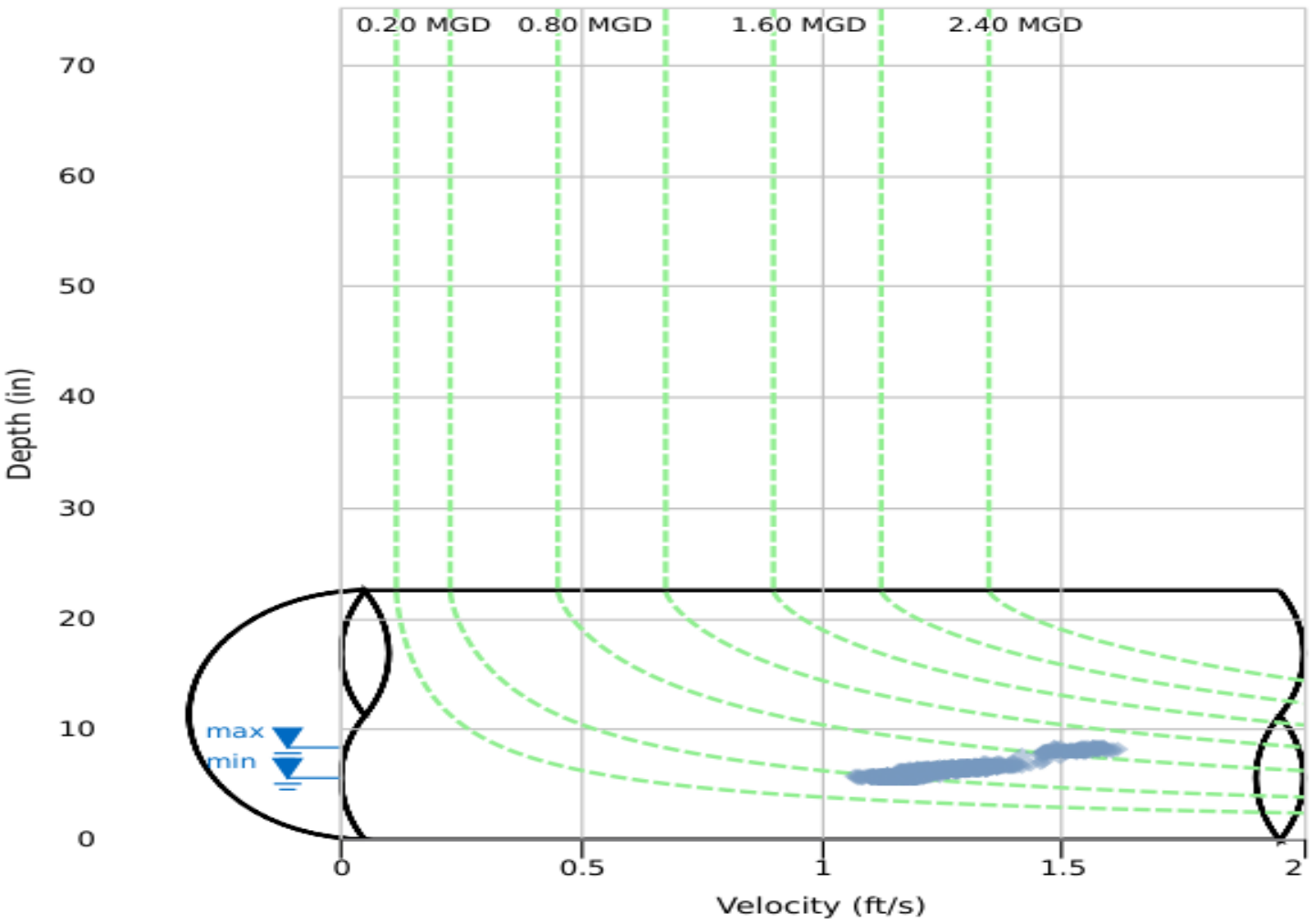
Pipe Height
22.50
in

Report Period

06/11/2023
To
06/27/2023

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Daily Tabular Report

06/11/2023 00:00 - 06/27/2023 23:59
FM_08Pipe: Elliptical (22.5 in H x 22.5 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)					
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total
06/11/2023	08:45	6.48	04:50	6.75	6.54	12:00	1.23	04:35	1.43	1.34	14:25	0.531	04:35	0.631	0.578	0.578
06/12/2023	04:15	6.53	14:25	8.30	7.44	05:25	1.25	15:30	1.62	1.45	05:25	0.539	15:30	0.965	0.755	0.755
06/13/2023	21:10	5.60	12:25	8.24	7.09	18:50	1.11	09:50	1.63	1.39	21:05	0.386	13:55	0.951	0.689	0.689
06/14/2023	04:45	5.56	14:45	6.49	5.88	20:45	1.07	15:55	1.37	1.19	06:45	0.370	14:40	0.580	0.445	0.445
06/15/2023	07:10	5.58	10:50	6.57	5.90	23:10	1.04	10:35	1.38	1.19	23:10	0.359	10:40	0.593	0.447	0.447
06/16/2023	05:00	5.55	14:35	6.45	5.85	02:00	1.03	14:30	1.36	1.18	02:00	0.361	14:35	0.576	0.437	0.437
06/17/2023	21:35	5.56	02:20	5.84	5.63	07:25	1.06	02:20	1.24	1.16	07:25	0.373	02:20	0.458	0.407	0.407
06/18/2023	08:45	5.53	00:00	5.73	5.63	05:05	1.08	11:00	1.25	1.17	08:15	0.374	11:00	0.440	0.409	0.409
06/19/2023	07:30	5.54	14:55	6.95	6.04	02:00	1.06	14:50	1.43	1.23	02:00	0.368	14:50	0.664	0.476	0.476
06/20/2023	07:15	5.87	15:20	6.53	6.26	07:00	1.14	18:00	1.34	1.24	07:10	0.422	18:00	0.570	0.505	0.505
06/21/2023	08:15	5.92	11:50	6.74	6.32	08:05	1.13	11:40	1.38	1.27	08:05	0.428	11:40	0.618	0.521	0.521
06/22/2023	07:30	5.92	14:40	7.62	6.33	05:40	1.15	14:40	1.55	1.27	07:40	0.436	14:40	0.824	0.524	0.524
06/23/2023	00:15	5.98	11:20	6.70	6.28	08:30	1.16	11:10	1.40	1.25	00:10	0.446	11:10	0.614	0.511	0.511
06/24/2023	07:30	5.93	18:10	6.47	6.26	03:40	1.15	17:55	1.35	1.24	03:40	0.446	17:55	0.572	0.504	0.504
06/25/2023	05:35	5.95	22:25	6.39	6.19	06:35	1.13	17:35	1.37	1.24	06:35	0.432	18:40	0.563	0.496	0.496
06/26/2023	00:00	6.15	00:00	6.15	6.15	00:05	1.16	00:00	1.23	1.20	00:05	0.457	00:00	0.488	0.475	0.005
06/27/2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

06/11/2023 00:00 - 06/27/2023 23:59

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)
Total			7.710
Average	6.24	1.26	0.514

FM_09

Site Commentary

SITE INFORMATION

Pipe	Elliptical (24 in H x 24 in W)
Silt	0.00 (in)

OBSERVATIONS

Surcharge conditions were not experienced. Review of the scattergraph shows that free-flow conditions were maintained throughout the study.

This site was positioned downstream of site FM_10 and upstream of site FM_13. A review of flow balancing indicated no problems.

Average flow depth, velocity, and quantity data observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	4.63	1.60	0.455
Minimum	2.71	1.04	0.135
Maximum	5.79	1.88	0.702
Min Time	06/13/2023 4:45:00 AM	06/16/2023 4:45:00 AM	06/20/2023 4:30:00 AM
Max Time	06/18/2023 11:45:00 AM	06/11/2023 1:15:00 PM	06/18/2023 11:45:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the fifteen minutes average.

DATA UPTIME

Data uptime observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

GoodYear.Carollo.TFM.AZ23

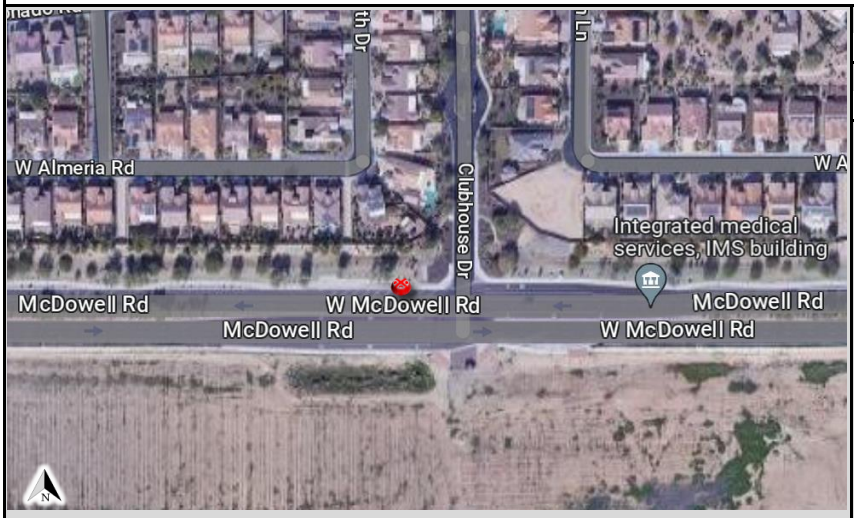
Flow Monitoring Site Report

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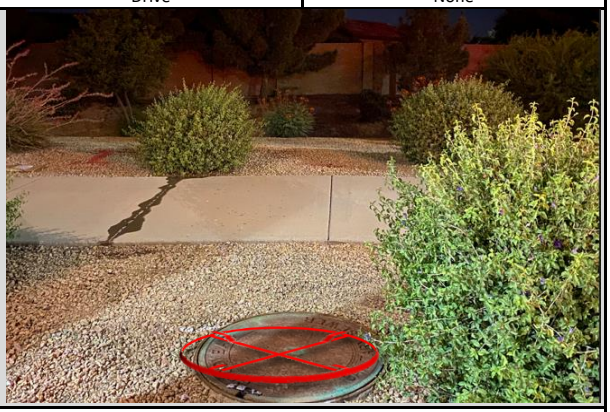
Site Name

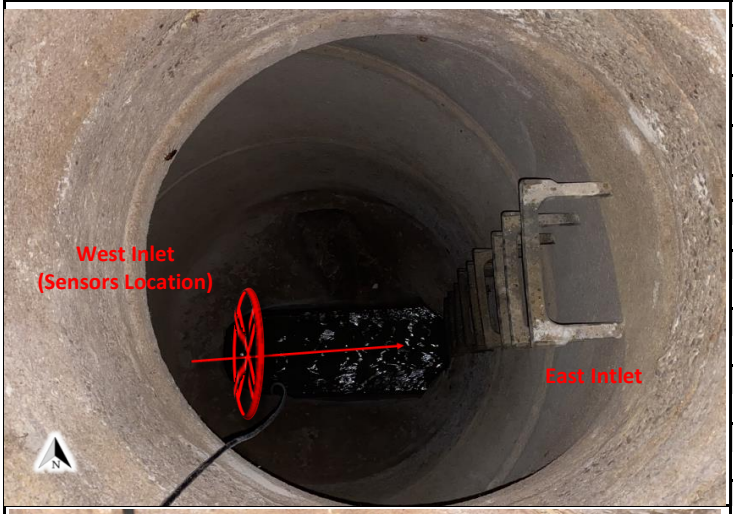
FM_09

Site Address /Location:	W Mc Dowell Rd and Clubhouse Dr			Monitor Series	Location Type
				TRITON+	Temporary
Site Access Details:	External Traffic Control Required	Latitude:	33.4647726	Pipe Size (H x W)	Pipe Shape
		Longitude:	-112.4182181	24.00"x 24.00"	Circular



Manhole #	System Characteristics
MH45C-401	Residential
Access	Traffic
Drive	None







ADS Project Name:	GoodYear.Carollo.TFM.AZ23
ADS Project Number:	22930.11.325

Installation Information

Installation Date:	Installation Type:
Wednesday, June 7, 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4)	0 - 5 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW)
10:00:00 PM	24.00"x 24.00"
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
5.25"	-
Downlooker Physical Offset (in)	Measurement Confidence (in)
NA	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
1.96	0''
Silt (in)	Silt Type
0''	

Hydraulic Comments:
Smooth flow with medium depth and slow velocity

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
12.64	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
26"	54''
Manhole Cover	Manhole Frame
Unbolted	Normal
Active Drop Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Vitrified Clay Pipe	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

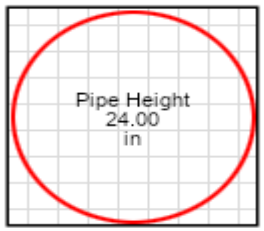
No TC required

Hydrograph Report

FM_09

Flow Monitor

FM_09

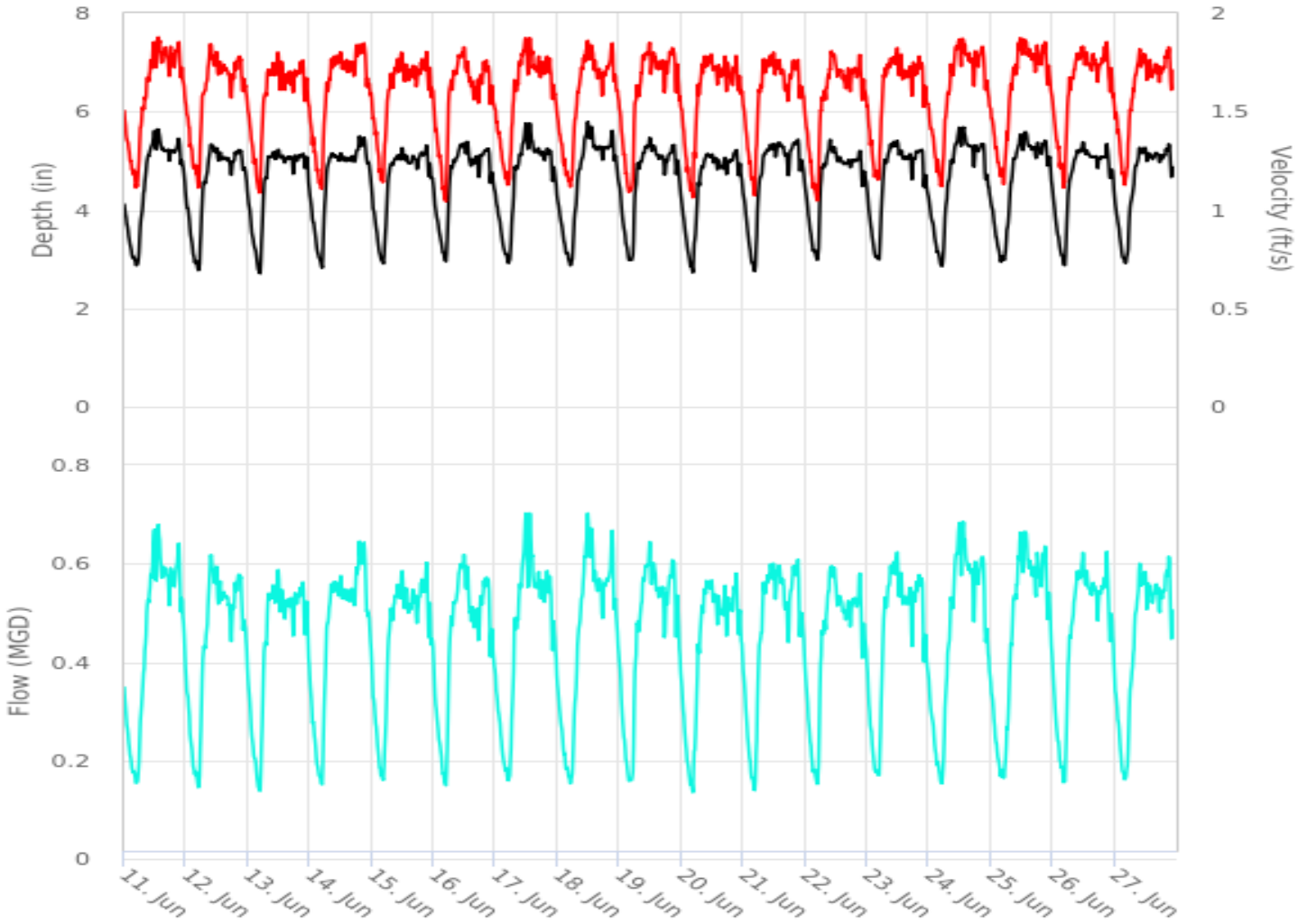


Report Period

06/11/2023
To
06/27/2023

Legend

DFINAL
QFINAL
VFINAL



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Scattergraph Report

FM_09

Flow Monitor

FM_09

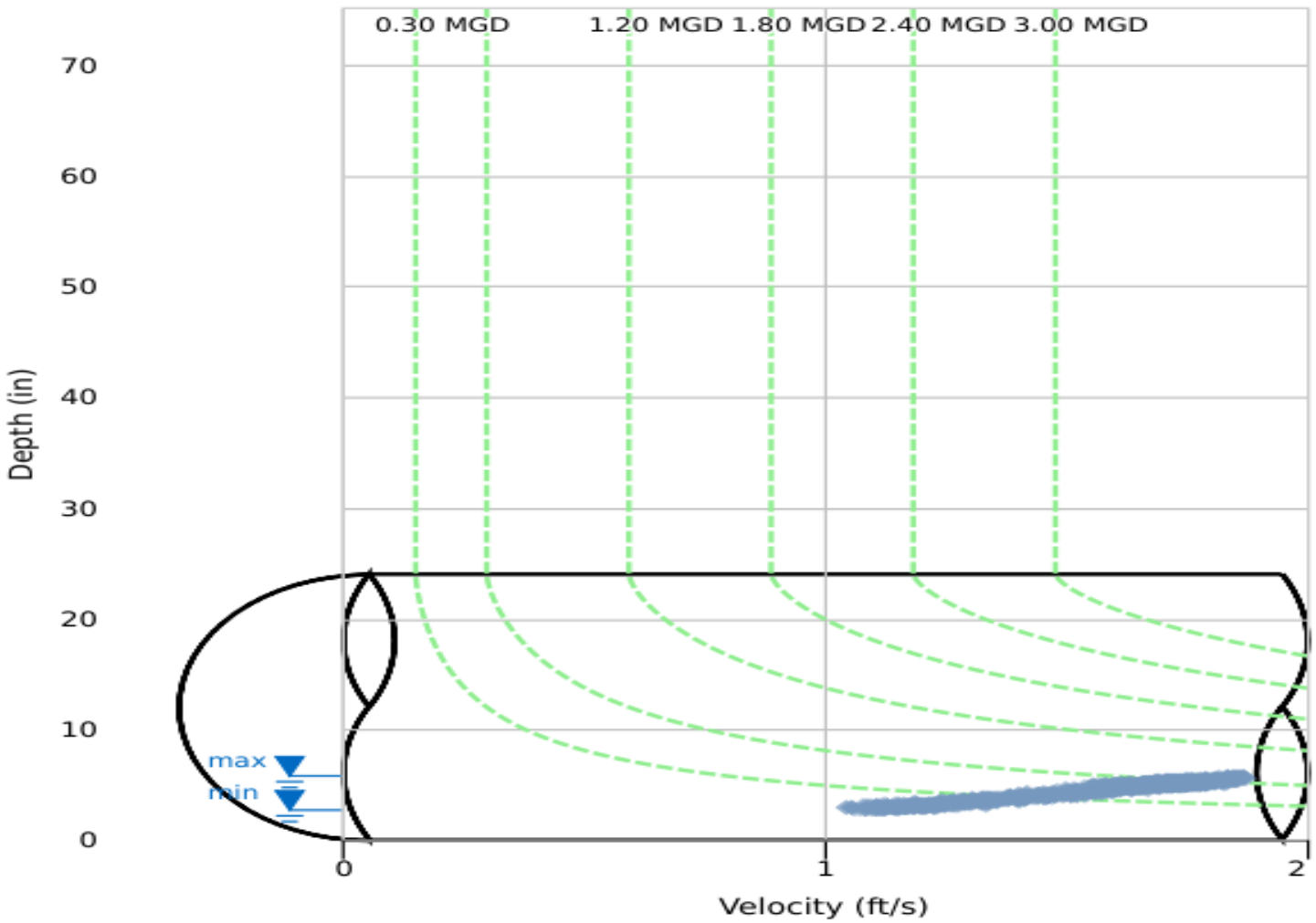
Pipe Height
24.00
in

Report Period

06/11/2023
To
06/27/2023

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Daily Tabular Report

06/11/2023 00:00 - 06/27/2023 23:59
FM_09Pipe: Elliptical (24 in H x 24 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)					
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total
06/11/2023	04:40	2.86	13:10	5.67	4.61	05:15	1.09	13:25	1.89	1.60	05:15	0.151	13:05	0.686	0.458	0.458
06/12/2023	04:45	2.77	09:50	5.34	4.56	04:45	1.09	09:35	1.85	1.60	04:45	0.142	09:50	0.623	0.445	0.445
06/13/2023	04:40	2.70	11:55	5.24	4.59	04:40	1.08	11:45	1.82	1.58	04:40	0.136	11:45	0.591	0.442	0.442
06/14/2023	04:50	2.81	19:20	5.51	4.67	04:30	1.08	18:00	1.87	1.62	04:50	0.148	21:00	0.651	0.465	0.465
06/15/2023	04:35	2.90	21:20	5.32	4.61	04:15	1.10	11:30	1.82	1.60	04:15	0.156	21:20	0.606	0.450	0.450
06/16/2023	04:45	2.95	13:05	5.41	4.65	04:40	1.04	11:55	1.84	1.58	04:45	0.149	11:55	0.624	0.450	0.450
06/17/2023	04:55	2.91	11:55	5.78	4.65	04:40	1.12	13:15	1.92	1.59	04:55	0.157	13:15	0.719	0.459	0.459
06/18/2023	05:05	2.86	11:50	5.80	4.67	05:00	1.08	11:55	1.89	1.58	05:00	0.149	11:55	0.715	0.460	0.460
06/19/2023	03:50	2.97	11:50	5.47	4.66	04:30	1.08	11:40	1.86	1.60	04:30	0.157	11:50	0.648	0.461	0.461
06/20/2023	04:35	2.72	21:30	5.24	4.53	04:35	1.05	16:55	1.83	1.59	04:35	0.133	21:20	0.587	0.438	0.438
06/21/2023	04:35	2.75	21:25	5.44	4.71	04:25	1.06	11:50	1.83	1.59	04:25	0.137	11:50	0.611	0.463	0.463
06/22/2023	04:45	2.98	09:50	5.43	4.63	04:40	1.04	10:15	1.85	1.56	04:45	0.151	10:15	0.609	0.444	0.444
06/23/2023	04:50	2.97	10:25	5.41	4.66	04:15	1.15	11:50	1.85	1.60	04:50	0.167	11:50	0.633	0.459	0.459
06/24/2023	05:05	2.85	12:00	5.72	4.65	04:35	1.11	12:00	1.92	1.61	05:05	0.152	12:00	0.712	0.465	0.465
06/25/2023	04:00	2.94	13:40	5.59	4.64	05:05	1.10	11:25	1.89	1.62	05:05	0.160	13:35	0.670	0.467	0.467
06/26/2023	04:45	2.86	11:50	5.38	4.63	04:15	1.09	21:10	1.86	1.63	04:50	0.152	21:10	0.626	0.462	0.462
06/27/2023	04:20	2.91	21:10	5.35	4.59	04:10	1.11	20:15	1.84	1.60	04:10	0.157	21:05	0.619	0.450	0.421

06/11/2023 00:00 - 06/27/2023 23:59

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)
Total			7.708
Average	4.63	1.60	0.455

FM_10

Site Commentary

SITE INFORMATION

Pipe	Round (17.13 in H)
Silt	0.00 (in)

OBSERVATIONS

Surcharge conditions were not experienced. Review of the scattergraph shows that free-flow conditions were maintained throughout the study.

This site was positioned upstream of site FM_09. A review of flow balancing indicated no problems.

A meter issue at this site caused its start to be delayed until 14 June 2023.

Average flow depth, velocity, and quantity data observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	3.22	1.35	0.188
Minimum	2.13	0.86	0.065
Maximum	4.15	1.69	0.335
Min Time	06/14/2023 2:30:00 AM	06/24/2023 5:45:00 AM	06/25/2023 5:45:00 AM
Max Time	06/27/2023 10:00:00 PM	06/20/2023 3:00:00 PM	06/20/2023 3:00:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the fifteen minutes average.

DATA UPTIME

Data uptime observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

GoodYear.Carollo.TFM.AZ23

Flow Monitoring Site Report

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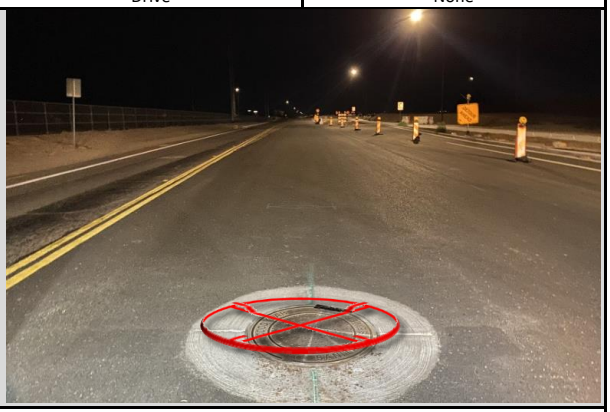
Site Name

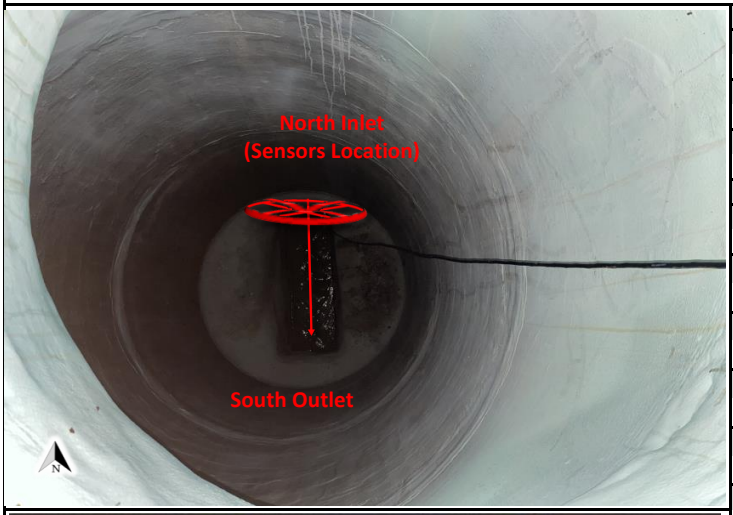
FM_10

Site Address /Location:	N Citrus Rd, about 575 ft south of Indian School Rd			Monitor Series	Location Type
				TRITON+	Temporary
Site Access Details:	No Traffic Control required	Latitude:	33.4499679	Pipe Size (H x W)	Pipe Shape
		Longitude:	-112.372242	17.13"x 17.13"	Circular



Manhole #	System Characteristics
MH34A-102	Residential
Access	Traffic
Drive	None







ADS Project Name:	GoodYear.Carollo.TFM.AZ23
ADS Project Number:	22930.11.325

Installation Information

Installation Date:	Installation Type:
Thursday, June 8, 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4)	0 - 5 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW)
10:00:00 AM	17.13"x 17.13"
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
3.48"	-
Downlooker Physical Offset (in)	Measurement Confidence (in)
NA	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
1.53	0''
Silt (in)	Silt Type
0''	

Hydraulic Comments:

Smooth flow with medium depth and moderate velocity

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
16.3	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
26"	54''
Manhole Cover	Manhole Frame
Unbolted	Normal
Active Drop Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
PVC	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

No TC required

Hydrograph Report

FM_10

Flow Monitor

FM_10

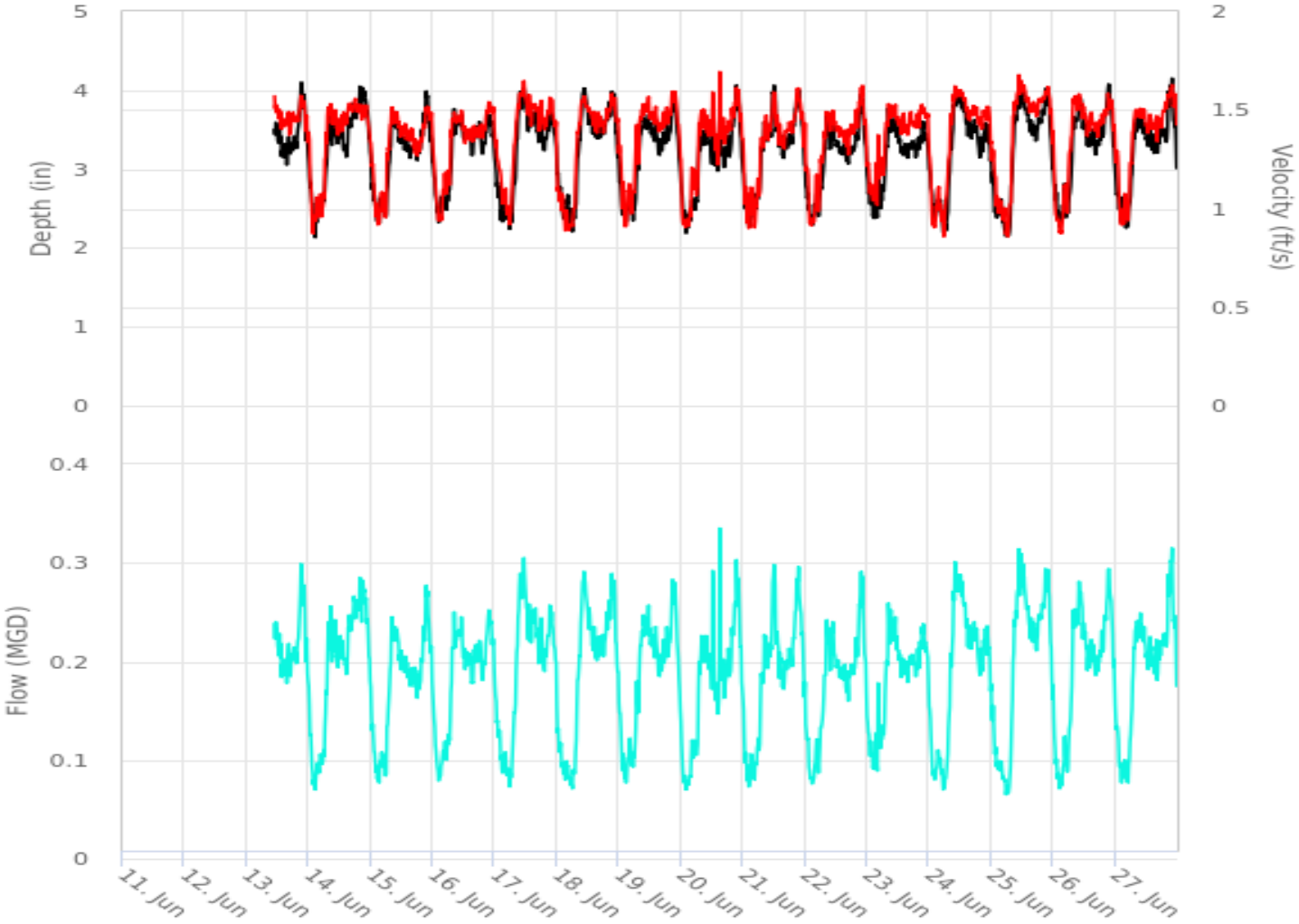
Pipe Height
17.13
in

Report Period

06/11/2023
To
06/27/2023

Legend

DFINAL
QFINAL
VFINAL



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Scattergraph Report

FM_10

Flow Monitor

FM_10

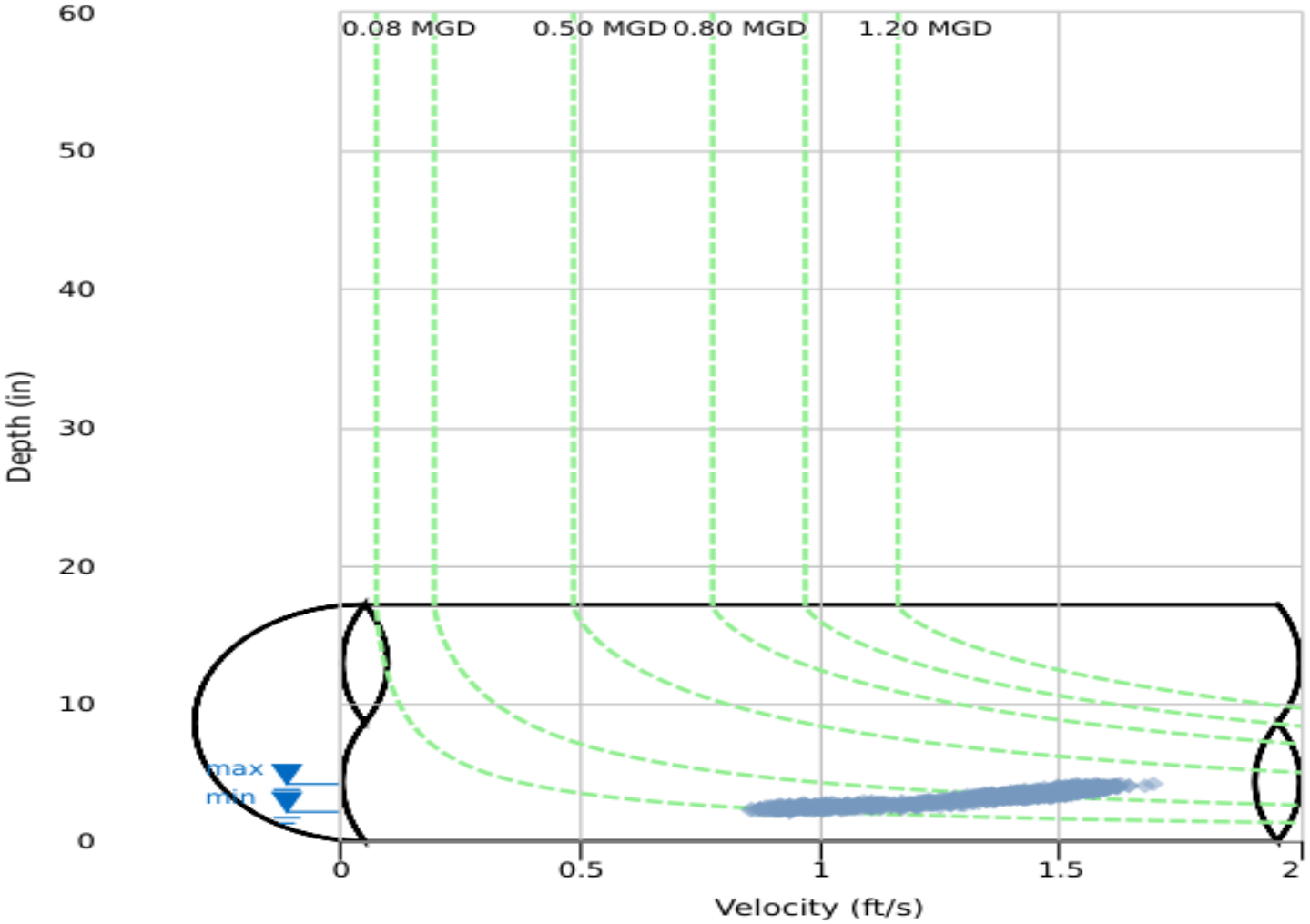
Pipe Height
17.13
in

Report Period

06/11/2023
To
06/27/2023

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Daily Tabular Report

06/11/2023 00:00 - 06/27/2023 23:59
FM_10Pipe: Round (17.13 in H), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)					
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total
06/11/2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06/12/2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06/13/2023	15:40	3.01	21:05	4.17	3.43	14:10	1.31	21:05	1.59	1.47	14:10	0.169	21:05	0.310	0.217	0.118
06/14/2023	02:40	2.10	19:50	4.06	3.29	01:45	0.86	18:00	1.57	1.35	02:40	0.065	19:50	0.287	0.194	0.194
06/15/2023	03:25	2.29	21:30	4.01	3.18	02:45	0.91	22:10	1.54	1.31	03:25	0.076	21:35	0.280	0.178	0.178
06/16/2023	02:20	2.30	08:15	3.81	3.21	02:10	0.93	21:55	1.55	1.33	02:20	0.078	21:55	0.257	0.183	0.183
06/17/2023	05:55	2.21	11:25	4.06	3.24	05:05	0.91	09:40	1.67	1.38	05:55	0.072	11:20	0.312	0.194	0.194
06/18/2023	06:00	2.20	10:30	4.04	3.25	05:55	0.86	21:15	1.63	1.32	06:10	0.068	21:15	0.298	0.189	0.189
06/19/2023	02:55	2.30	21:40	3.99	3.20	02:50	0.90	20:40	1.62	1.36	02:55	0.075	21:40	0.296	0.187	0.187
06/20/2023	02:10	2.15	12:25	5.10	3.12	01:55	0.89	12:25	2.06	1.32	02:10	0.070	12:25	0.532	0.177	0.177
06/21/2023	02:35	2.18	11:25	4.14	3.23	02:25	0.87	21:30	1.63	1.33	02:25	0.069	11:55	0.306	0.186	0.186
06/22/2023	02:55	2.25	21:45	3.98	3.14	02:50	0.88	21:40	1.65	1.33	02:50	0.072	21:45	0.299	0.177	0.177
06/23/2023	03:00	2.29	08:20	3.78	3.15	03:55	0.92	08:25	1.56	1.37	04:05	0.079	08:25	0.264	0.182	0.182
06/24/2023	05:35	2.10	10:05	4.06	3.20	05:50	0.85	10:05	1.64	1.35	05:35	0.066	10:05	0.308	0.189	0.189
06/25/2023	06:00	2.09	10:50	4.10	3.25	05:45	0.84	10:45	1.68	1.37	06:00	0.064	10:50	0.319	0.198	0.198
06/26/2023	02:45	2.23	21:25	4.18	3.25	03:20	0.86	21:20	1.64	1.35	02:45	0.069	21:25	0.319	0.192	0.192
06/27/2023	04:20	2.23	22:05	4.17	3.24	03:30	0.88	22:00	1.64	1.37	05:05	0.074	22:05	0.319	0.192	0.191

06/11/2023 00:00 - 06/27/2023 23:59

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)
Total			2.737
Average	3.22	1.35	0.188

FM_11

Site Commentary

SITE INFORMATION

Pipe	Elliptical (18 in H x 18 in W)
Silt	0.00 (in)

OBSERVATIONS

Surcharge conditions were not experienced. Review of the scattergraph shows that free-flow conditions were maintained throughout the study.

This site was positioned upstream of site FM_16. A review of flow balancing indicated no problems.

Average flow depth, velocity, and quantity data observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	4.17	1.41	0.292
Minimum	3.12	0.89	0.119
Maximum	5.27	1.87	0.517
Min Time	06/20/2023 4:00:00 AM	06/20/2023 3:45:00 AM	06/20/2023 4:00:00 AM
Max Time	06/21/2023 2:30:00 PM	06/21/2023 2:15:00 PM	06/21/2023 2:15:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the fifteen minutes average.

DATA UPTIME

Data uptime observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

GoodYear.Carollo.TFM.AZ23

Flow Monitoring Site Report

ADS ENVIRONMENTAL SERVICES®

Site Name

FM_11

Site Address /Location:	14480-14624 W Van Buren St, Goodyear, AZ 85338			Monitor Series	Location Type
				TRITON+	Temporary
Site Access Details:	Traffic Control required	Latitude:	33.4499679	Pipe Size (H x W)	Pipe Shape
		Longitude:	-112.372242	18.00"x 18.00"	Circular



Manhole #	System Characteristics
MH58C-302	Industrial
Access	Traffic
Drive	Medium







ADS Project Name:	GoodYear.Carollo.TFM.AZ23
ADS Project Number:	22930.11.325

Installation Information

Installation Date:	Installation Type:
Wednesday, June 7, 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4)	0 - 5 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW)
8:00:00 AM	18.00"x 18.00"
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
4.50"	-
Downlooker Physical Offset (in)	Measurement Confidence (in)
NA	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
1.73	0''
Silt (in)	Silt Type
0''	

Hydraulic Comments:
Smooth flow with medium depth and moderate velocity

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
15.06	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
26"	54''
Manhole Cover	Manhole Frame
Unbolted	Normal
Active Drop Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Vitrified Clay Pipe	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

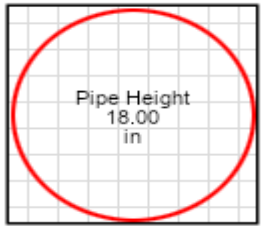
TC required

Hydrograph Report

FM_11

Flow Monitor

FM_11

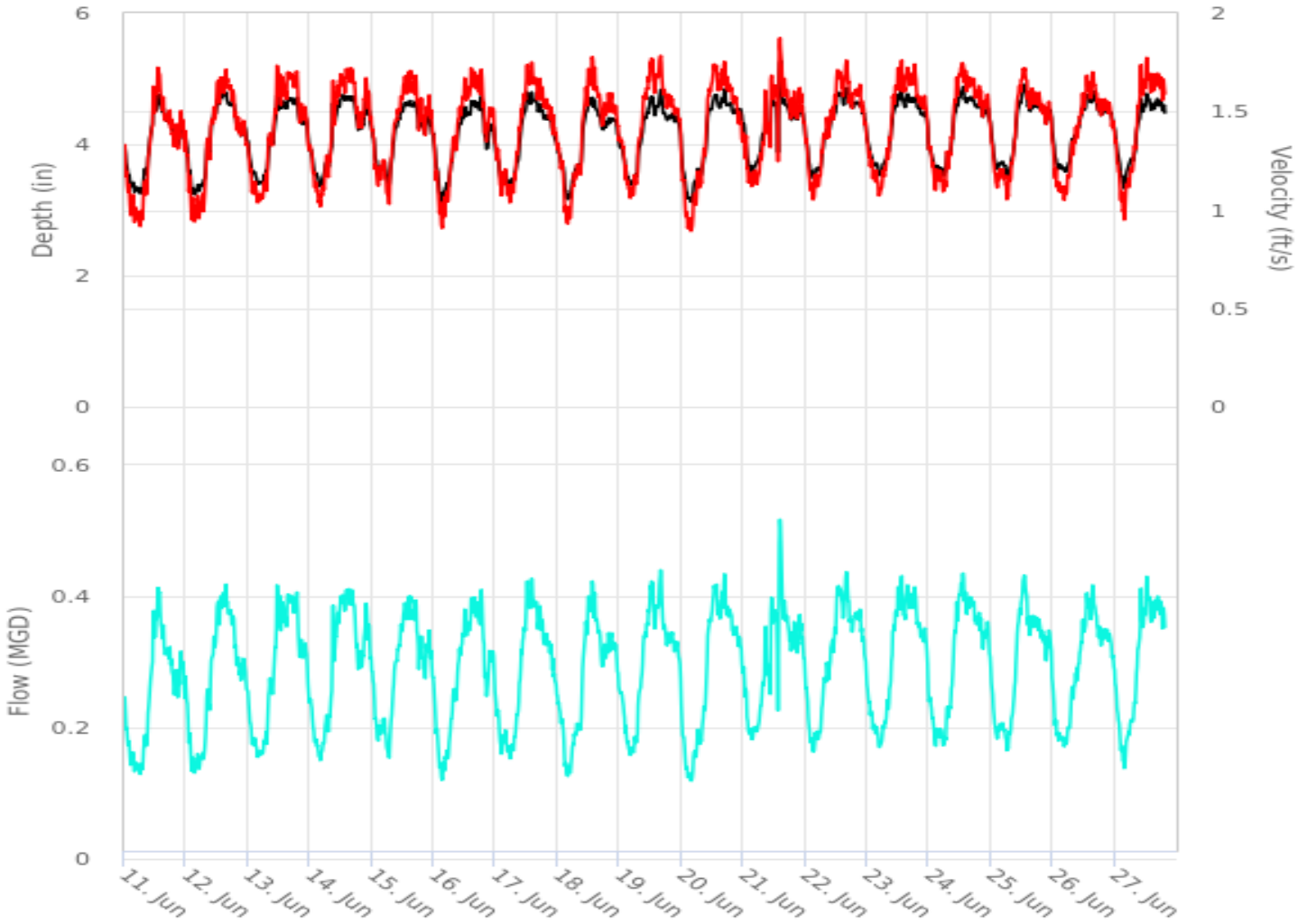


Report Period

06/11/2023
To
06/27/2023

Legend

DFINAL
QFINAL
VFINAL



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Scattergraph Report

FM_11

Flow Monitor

FM_11

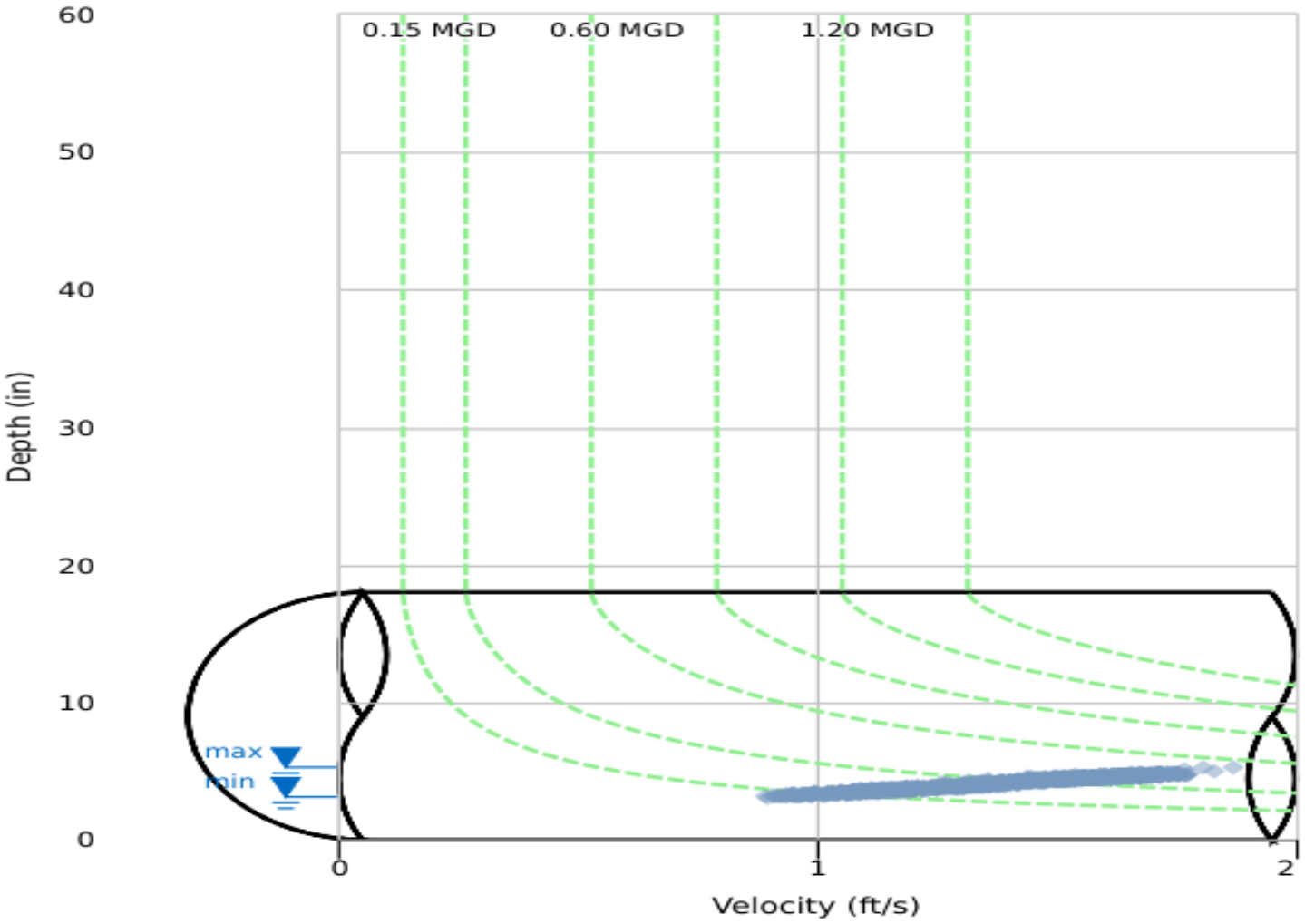
Pipe Height
18.00
in

Report Period

06/11/2023
To
06/27/2023

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Daily Tabular Report

06/11/2023 00:00 - 06/27/2023 23:59
FM_11Pipe: Elliptical (18 in H x 18 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)					
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total
06/11/2023	06:20	3.24	13:10	4.77	3.98	06:15	0.90	13:10	1.75	1.31	06:15	0.126	13:10	0.424	0.253	0.253
06/12/2023	03:25	3.22	15:25	4.80	4.10	03:30	0.91	15:30	1.72	1.36	03:30	0.126	15:30	0.421	0.276	0.276
06/13/2023	03:45	3.40	11:25	4.82	4.16	03:50	1.01	11:30	1.76	1.41	03:50	0.151	11:25	0.430	0.289	0.289
06/14/2023	04:05	3.35	09:00	4.76	4.20	04:05	1.00	09:00	1.76	1.44	04:05	0.147	09:00	0.425	0.299	0.299
06/15/2023	06:45	3.39	15:00	4.69	4.17	06:45	1.02	15:05	1.74	1.43	06:45	0.152	15:05	0.408	0.292	0.292
06/16/2023	03:15	3.12	18:30	4.74	4.08	03:20	0.90	14:40	1.75	1.40	03:20	0.119	18:25	0.414	0.280	0.280
06/17/2023	05:45	3.32	14:10	4.81	4.11	05:40	0.99	14:10	1.76	1.41	05:40	0.144	14:10	0.432	0.285	0.285
06/18/2023	04:05	3.15	13:45	4.75	4.06	03:55	0.91	13:45	1.80	1.39	03:55	0.123	13:45	0.434	0.277	0.277
06/19/2023	04:20	3.38	16:05	4.84	4.19	04:20	1.05	16:05	1.80	1.46	04:20	0.156	16:05	0.445	0.301	0.301
06/20/2023	03:55	3.10	16:55	4.86	4.13	02:40	0.87	13:45	1.78	1.40	03:55	0.114	16:55	0.438	0.287	0.287
06/21/2023	03:40	3.57	14:30	5.28	4.29	02:30	1.07	14:15	1.89	1.44	03:45	0.173	14:20	0.521	0.306	0.306
06/22/2023	03:25	3.47	16:15	4.87	4.28	03:05	1.04	16:05	1.78	1.45	03:30	0.160	16:05	0.443	0.308	0.308
06/23/2023	04:50	3.52	13:10	4.83	4.27	04:40	1.05	13:30	1.79	1.45	04:45	0.167	13:30	0.442	0.308	0.308
06/24/2023	02:50	3.49	13:25	4.89	4.26	05:30	1.07	13:10	1.77	1.45	05:30	0.169	13:10	0.440	0.307	0.307
06/25/2023	06:25	3.50	13:05	4.93	4.24	06:20	1.03	12:40	1.74	1.42	06:20	0.162	13:00	0.439	0.297	0.297
06/26/2023	05:05	3.58	15:30	4.82	4.25	04:35	1.04	15:40	1.71	1.41	04:40	0.168	15:40	0.419	0.295	0.295
06/27/2023	04:00	3.31	12:40	4.78	4.20	03:55	0.94	10:15	1.79	1.43	03:55	0.136	12:35	0.431	0.299	0.245

06/11/2023 00:00 - 06/27/2023 23:59

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)
Total			4.905
Average	4.17	1.41	0.292

FM_12

Site Commentary

SITE INFORMATION

Pipe	Elliptical (12 in H x 11.5 in W)
Silt	0.00 (in)

OBSERVATIONS

Surcharge conditions were not experienced. Review of the scattergraph shows that free-flow conditions were maintained throughout the study.

This site was positioned upstream of site FM_16. A review of flow balancing indicated no problems.

Average flow depth, velocity, and quantity data observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	3.49	1.04	0.131
Minimum	2.43	0.56	0.041
Maximum	4.60	1.55	0.258
Min Time	06/12/2023 4:45:00 AM	06/12/2023 4:30:00 AM	06/12/2023 4:30:00 AM
Max Time	06/21/2023 11:45:00 AM	06/21/2023 1:30:00 PM	06/21/2023 1:30:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the fifteen minutes average.

DATA UPTIME

Data uptime observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

GoodYear.Carollo.TFM.AZ23

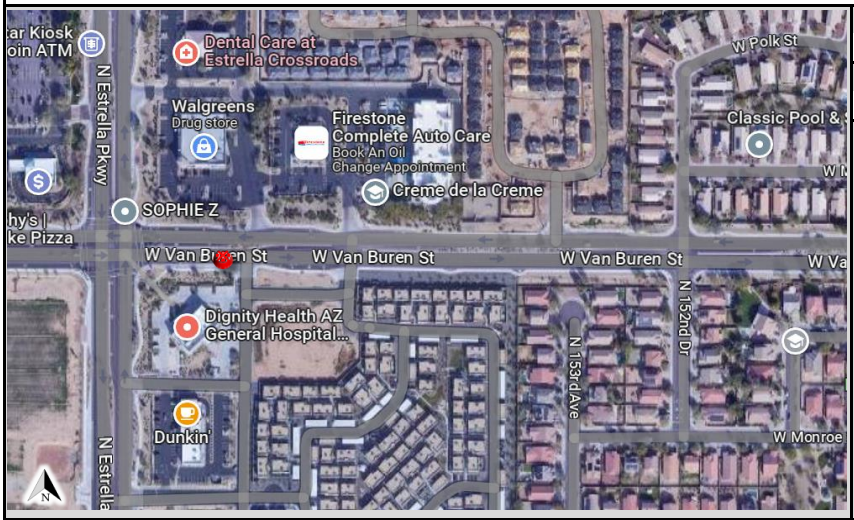
Flow Monitoring Site Report

ADS ENVIRONMENTAL SERVICES®

Site Name

FM_12

Site Address /Location:	251 N Estrella Pkwy, Goodyear, AZ 85338			Monitor Series	Location Type
				TRITON+	Temporary
Site Access Details:	Traffic Control required	Latitude:	33.4499772	Pipe Size (H x W)	Pipe Shape
		Longitude:	-112.3916582	12.00"x 11.50"	Elliptical



Manhole #	System Characteristics
MH67A-104	Commercial
Access	Traffic
Drive	Heavy







ADS Project Name:	GoodYear.Carollo.TFM.AZ23
ADS Project Number:	22930.11.325

Installation Information

Installation Date:	Installation Type:
Tuesday, June 6, 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4)	0 - 5 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW)
1:00:00 AM	12.00"x 11.50"
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
2.88"	-
Downlooker Physical Offset (in)	Measurement Confidence (in)
NA	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
0.91	0''
Silt (in)	Silt Type
0''	

Hydraulic Comments:
Smooth flow with low depth and low velocity

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
10.12	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
26"	54''
Manhole Cover	Manhole Frame
Unbolted	Normal
Active Drop Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Vitrified Clay Pipe	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

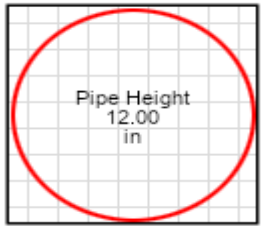
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Hydrograph Report

FM_12

Flow Monitor

FM_12

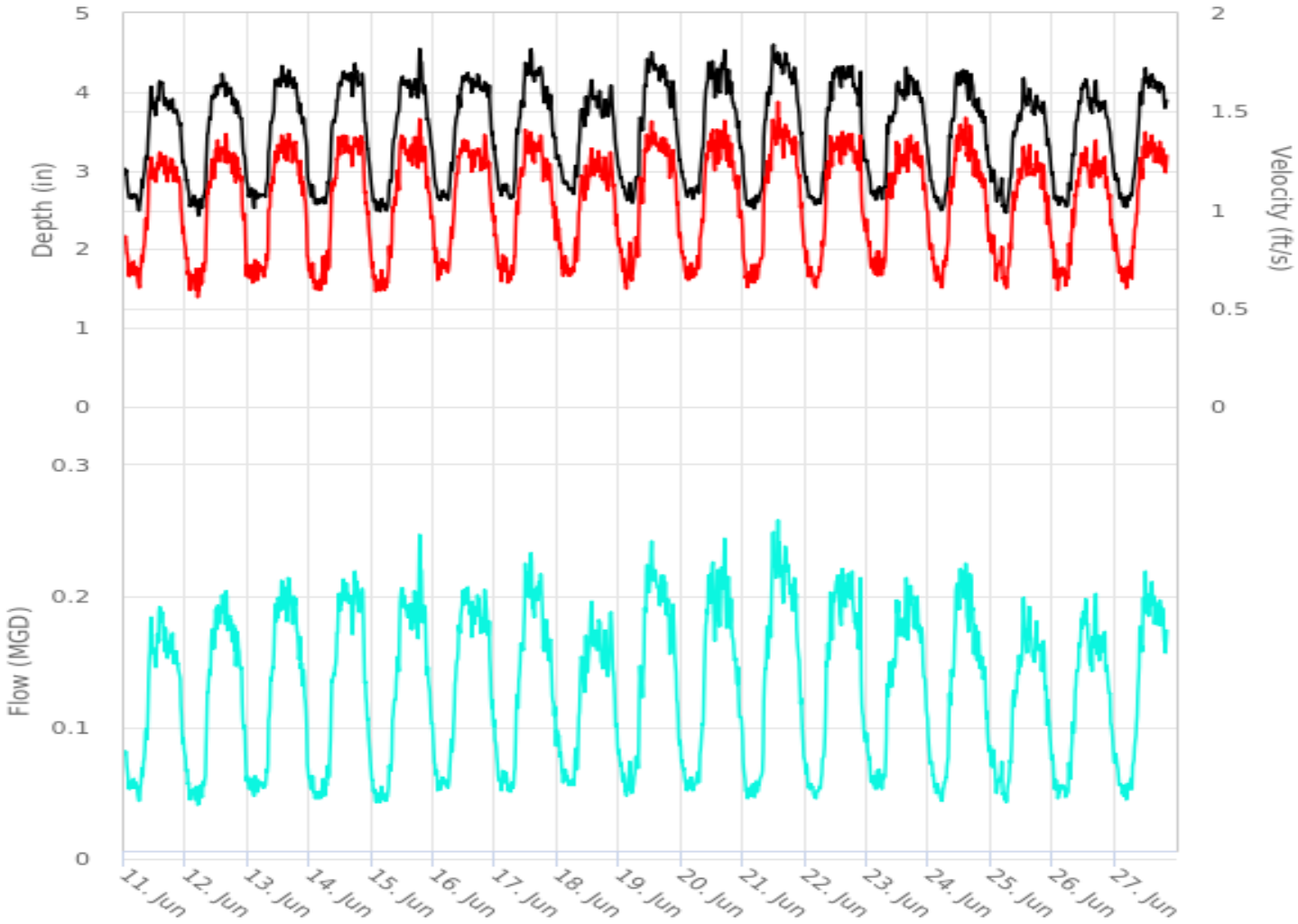


Report Period

06/11/2023
To
06/27/2023

Legend

DFINAL
QFINAL
VFINAL



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Scattergraph Report

FM_12

Flow Monitor

FM_12

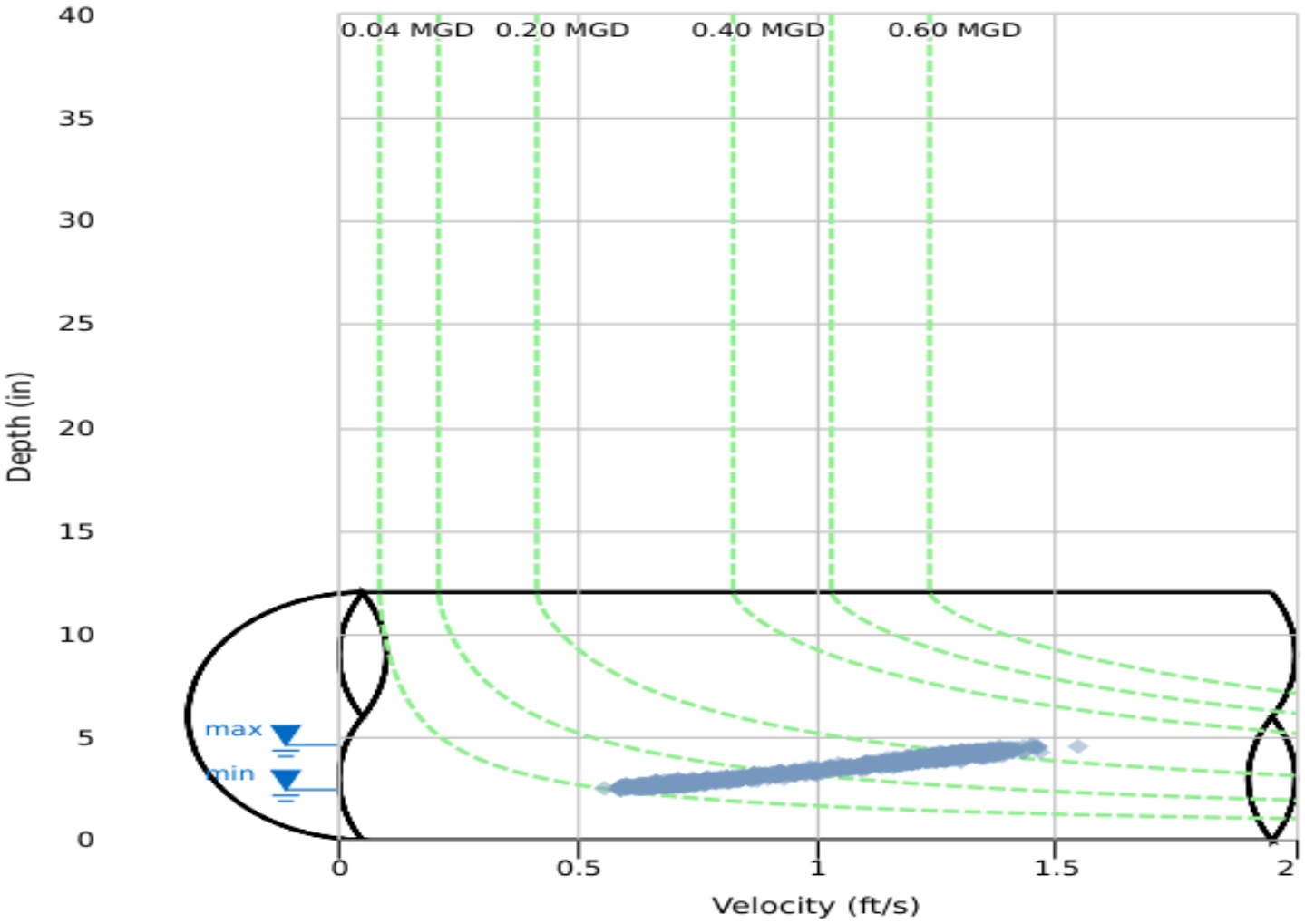
Pipe Height
12.00
in

Report Period

06/11/2023
To
06/27/2023

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Daily Tabular Report

06/11/2023 00:00 - 06/27/2023 23:59
FM_12Pipe: Elliptical (12 in H x 11.5 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)					
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total
06/11/2023	05:40	2.48	13:40	4.18	3.38	05:50	0.60	13:50	1.33	1.00	05:50	0.043	13:50	0.198	0.119	0.119
06/12/2023	04:45	2.42	14:05	4.27	3.41	04:35	0.55	15:30	1.41	1.01	04:35	0.039	15:50	0.211	0.124	0.124
06/13/2023	02:20	2.51	13:15	4.34	3.47	01:45	0.60	16:00	1.40	1.03	02:35	0.045	13:10	0.219	0.129	0.129
06/14/2023	02:10	2.57	17:25	4.37	3.49	04:10	0.57	13:00	1.44	1.04	04:10	0.044	13:00	0.225	0.132	0.132
06/15/2023	03:30	2.47	18:30	4.66	3.47	01:55	0.57	18:30	1.53	1.04	03:30	0.041	18:30	0.267	0.131	0.131
06/16/2023	05:35	2.61	13:15	4.27	3.57	01:35	0.61	11:45	1.39	1.07	01:35	0.050	11:45	0.213	0.138	0.138
06/17/2023	06:05	2.63	13:55	4.63	3.57	04:50	0.60	11:35	1.45	1.05	05:55	0.049	14:00	0.244	0.135	0.135
06/18/2023	06:10	2.69	13:25	4.16	3.46	03:40	0.64	13:25	1.35	1.01	04:30	0.054	13:25	0.203	0.122	0.122
06/19/2023	05:05	2.58	12:25	4.58	3.61	02:45	0.59	12:25	1.53	1.08	02:45	0.047	12:25	0.260	0.142	0.142
06/20/2023	04:30	2.63	16:50	4.56	3.57	02:15	0.61	16:50	1.47	1.06	02:15	0.050	16:50	0.249	0.137	0.137
06/21/2023	04:20	2.50	11:40	4.69	3.60	01:50	0.60	13:35	1.59	1.08	01:50	0.046	13:35	0.268	0.144	0.144
06/22/2023	03:40	2.56	21:30	4.46	3.56	04:25	0.57	21:30	1.46	1.07	04:25	0.043	21:30	0.240	0.139	0.139
06/23/2023	03:40	2.62	15:15	4.32	3.52	03:15	0.65	17:05	1.40	1.06	06:00	0.051	15:20	0.215	0.134	0.134
06/24/2023	04:55	2.48	13:15	4.31	3.46	05:20	0.60	14:15	1.48	1.06	05:20	0.044	12:20	0.227	0.131	0.131
06/25/2023	06:10	2.42	12:40	4.22	3.36	06:00	0.57	15:00	1.38	1.00	06:00	0.041	12:45	0.208	0.117	0.117
06/26/2023	05:25	2.53	12:40	4.18	3.41	02:00	0.58	16:50	1.37	1.01	02:00	0.045	16:50	0.206	0.121	0.121
06/27/2023	04:40	2.52	12:05	4.32	3.48	04:35	0.60	12:45	1.44	1.04	04:35	0.045	12:05	0.224	0.131	0.111

06/11/2023 00:00 - 06/27/2023 23:59

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)
Total			2.205
Average	3.49	1.04	0.131

FM_13

Site Commentary

SITE INFORMATION

Pipe	Elliptical (23.75 in H x 24 in W)
Silt	0.00 (in)

OBSERVATIONS

Surcharge conditions were not experienced. Review of the scattergraph shows that free-flow conditions were experienced during the study. Backwater conditions were observed on 22 June 2023.

This site was positioned downstream of site FM_09 and upstream of site FM_05. A review of flow balancing indicated no problems.

Average flow depth, velocity, and quantity data observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	9.89	2.22	1.792
Minimum	6.32	1.42	0.614
Maximum	14.82	3.10	3.929
Min Time	06/11/2023 6:00:00 AM	06/11/2023 5:30:00 AM	06/11/2023 6:00:00 AM
Max Time	06/23/2023 1:00:00 PM	06/22/2023 11:45:00 PM	06/23/2023 11:45:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the fifteen minutes average.

DATA UPTIME

Data uptime observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

GoodYear.Carollo.TFM.AZ23		Site Name
Flow Monitoring Site Report	ADS ENVIRONMENTAL SERVICES®	FM_13

Site Address /Location:	W Yuma and Sariva ave			Monitor Series	Location Type
				TRITON+	Temporary
Site Access Details:	Traffic Control required	Latitude:	33.4343999	Pipe Size (H x W)	Pipe Shape
		Longitude:	-112.4095445	23.75"x 24.00"	Elliptical



Manhole #	System Characteristics
MH75B-203	Commercial
Access	Traffic
Drive	Heavy







ADS Project Name:	GoodYear.Carollo.TFM.AZ23
ADS Project Number:	22930.11.325

Installation Information

Installation Date:	Installation Type:
Wednesday, June 7, 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4)	0 - 5 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW)
9:00:00 PM	23.75"x 24.00"
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
10.38"	-
Downlooker Physical Offset (in)	Measurement Confidence (in)
NA	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
2.51	0''
Silt (in)	Silt Type
0''	

Hydraulic Comments:
Smooth flow with low depth and low velocity

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
17.628	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
26"	54''
Manhole Cover	Manhole Frame
Unbolted	Normal
Active Drop Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Vitrified Clay Pipe	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

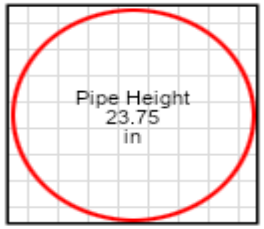
No TC required

Hydrograph Report

FM_13

Flow Monitor

FM_13



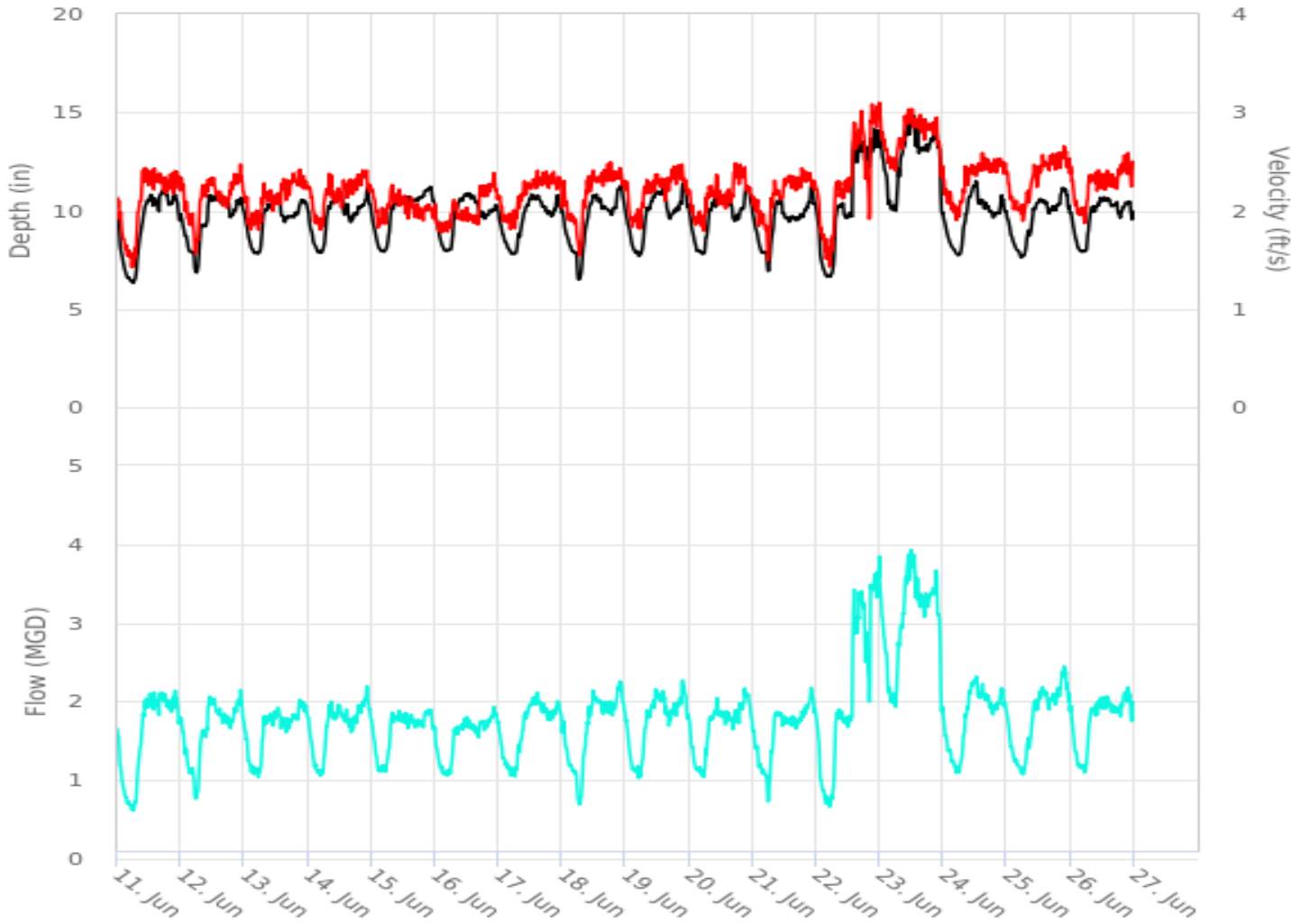
Report Period

06/11/2023
To
06/27/2023

Legend

DFINAL
QFINAL
VFINAL





Scattergraph Report

FM_13

Flow Monitor

FM_13

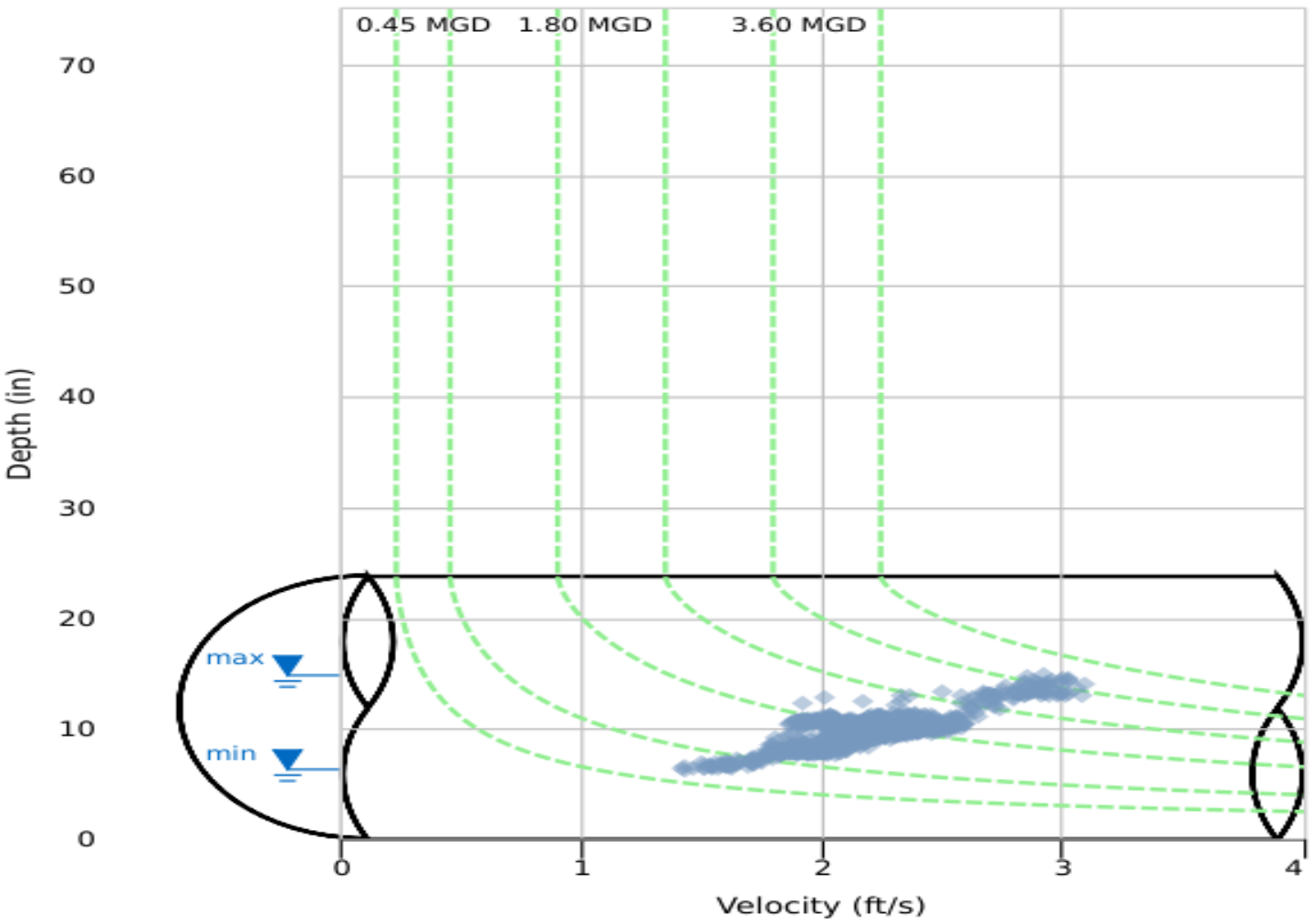
Pipe Height
23.75
in

Report Period

06/11/2023
To
06/27/2023

Legend

DFINAL - VFINAL
Iso-Q™
Min-Max Depth



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Daily Tabular Report

06/11/2023 00:00 - 06/27/2023 23:59
FM_13Pipe: Elliptical (23.75 in H x 24 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)					
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total
06/11/2023	06:10	6.30	17:40	11.05	9.28	06:10	1.36	11:05	2.53	2.10	06:10	0.582	22:00	2.196	1.586	1.586
06/12/2023	05:50	6.83	11:05	10.86	9.56	06:15	1.53	22:40	2.56	2.14	06:15	0.741	22:40	2.255	1.638	1.638
06/13/2023	05:05	7.79	13:05	10.87	9.60	02:30	1.75	20:40	2.46	2.14	05:15	1.011	20:55	2.056	1.640	1.640
06/14/2023	05:05	7.84	22:30	11.16	9.71	04:55	1.72	08:10	2.53	2.17	04:55	0.998	22:15	2.246	1.691	1.691
06/15/2023	04:45	7.90	22:10	11.25	9.96	02:30	1.78	07:45	2.30	2.04	03:35	1.078	22:10	1.930	1.632	1.632
06/16/2023	04:00	7.94	12:45	10.94	9.73	04:55	1.71	22:20	2.40	2.01	04:55	1.008	22:45	1.987	1.563	1.563
06/17/2023	05:55	7.79	12:35	10.88	9.59	06:15	1.75	18:10	2.51	2.17	06:15	1.008	14:45	2.144	1.666	1.666
06/18/2023	06:30	6.47	22:20	11.34	9.51	06:40	1.50	17:20	2.55	2.18	06:40	0.675	22:00	2.324	1.669	1.669
06/19/2023	05:05	7.67	21:40	11.39	9.81	02:40	1.77	18:10	2.53	2.20	05:05	0.993	21:25	2.348	1.745	1.745
06/20/2023	05:05	7.77	21:50	11.27	9.74	05:35	1.75	17:35	2.51	2.15	05:35	1.015	21:05	2.259	1.683	1.683
06/21/2023	06:00	6.89	22:10	11.33	9.45	05:55	1.45	13:45	2.53	2.16	05:55	0.704	22:00	2.217	1.629	1.629
06/22/2023	04:10	6.62	23:50	14.47	10.58	05:10	1.38	21:10	3.18	2.31	05:10	0.635	23:50	4.039	2.123	2.123
06/23/2023	23:30	9.83	12:55	14.90	12.70	23:55	2.30	11:50	3.09	2.76	23:25	1.816	11:50	3.999	3.037	3.037
06/24/2023	05:40	7.71	12:20	11.65	9.68	05:00	1.78	14:45	2.67	2.32	05:00	1.025	12:35	2.347	1.806	1.806
06/25/2023	05:30	7.60	21:00	11.21	9.59	06:10	1.83	21:35	2.69	2.32	06:10	1.033	21:30	2.487	1.790	1.790
06/26/2023	04:15	7.89	11:25	10.77	9.71	05:25	1.81	20:25	2.62	2.27	05:25	1.063	21:55	2.219	1.772	1.754
06/27/2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

06/11/2023 00:00 - 06/27/2023 23:59

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)
Total			28.652
Average	9.89	2.22	1.792

FM_14

Site Commentary

SITE INFORMATION

Pipe	Elliptical (11.88 in H x 11.88 in W)
Silt	0.00 (in)

OBSERVATIONS

Surcharge conditions were not experienced. Review of the scattergraph shows that free-flow conditions were maintained throughout the study.

This site was positioned upstream of site FM_06. A review of flow balancing indicated no problems.

Average flow depth, velocity, and quantity data observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	2.74	1.91	0.179
Minimum	1.32	0.82	0.025
Maximum	4.07	2.45	0.369
Min Time	06/18/2023 5:45:00 AM	06/11/2023 4:45:00 AM	06/11/2023 5:45:00 AM
Max Time	06/11/2023 9:00:00 PM	06/11/2023 9:00:00 PM	06/11/2023 9:00:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the fifteen minutes average.

DATA UPTIME

Data uptime observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

GoodYear.Carollo.TFM.AZ23

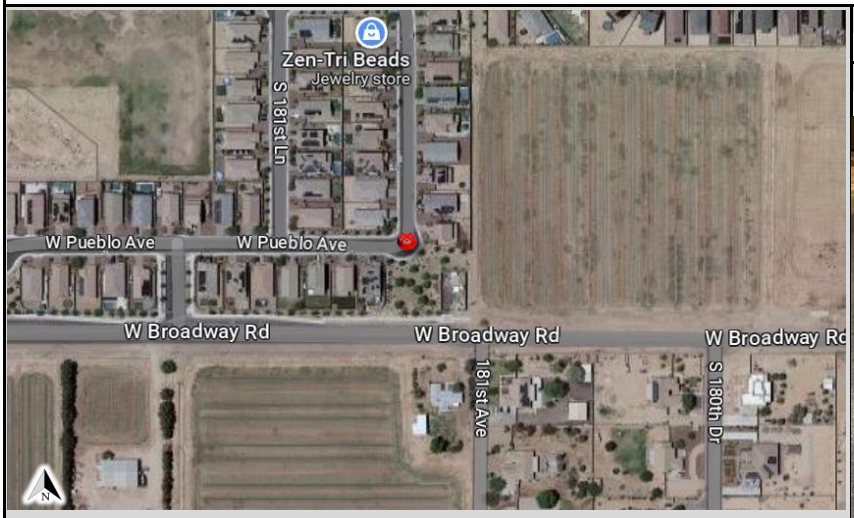
Flow Monitoring Site Report

ADS ENVIRONMENTAL SERVICES®

Site Name

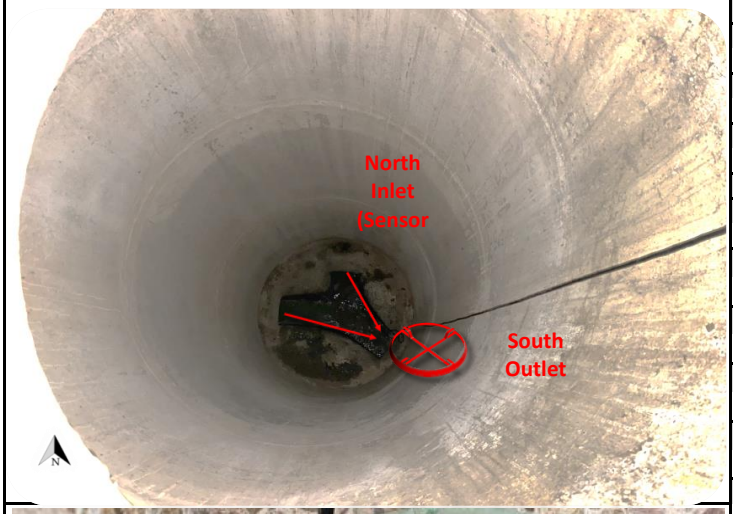
FM_14

Site Address /Location:	4219 S 181st Dr, Goodyear, AZ 85338			Monitor Series	Location Type
				TRITON+	Temporary
Site Access Details:	Traffic Control required	Latitude:	33.4071617	Pipe Size (H x W)	Pipe Shape
		Longitude:	-112.4489827	11.88"x 11.88"	Circular



Manhole #	System Characteristics
MH83D-302	Residential
Access	Traffic
Drive	Light







ADS Project Name:	GoodYear.Carollo.TFM.AZ23
ADS Project Number:	22930.11.325

Installation Information

Installation Date:	Installation Type:
Thursday, June 8, 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4)	0 - 5 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW)
9:30:00 PM	11.88"x11.88"
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
3.38"	-
Downlooker Physical Offset (in)	Measurement Confidence (in)
NA	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
2.55	0''
Silt (in)	Silt Type
0''	

Hydraulic Comments:
Smooth flow with low depth and low velocity

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
21	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
26"	54''
Manhole Cover	Manhole Frame
Unbolted	Normal
Active Drop Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Vitrified Clay Pipe	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

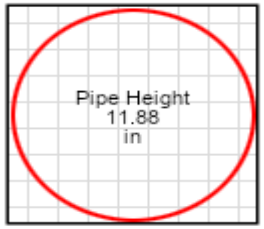
TC required site located in a cul-va-sac

Hydrograph Report

FM_14

Flow Monitor

FM_14

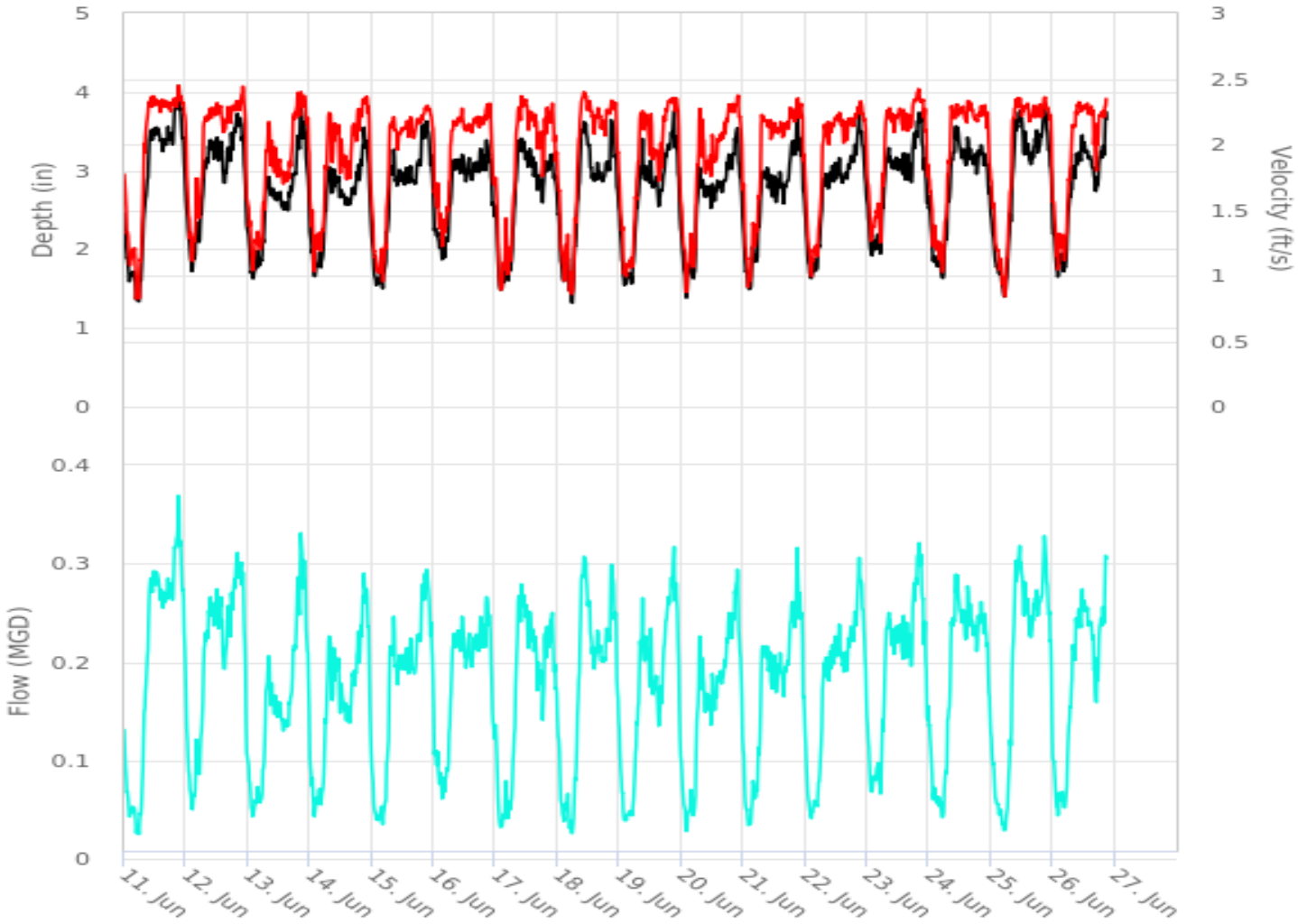


Report Period

06/11/2023
To
06/27/2023

Legend

DFINAL
QFINAL
VFINAL



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Scattergraph Report

FM_14

Flow Monitor

FM_14

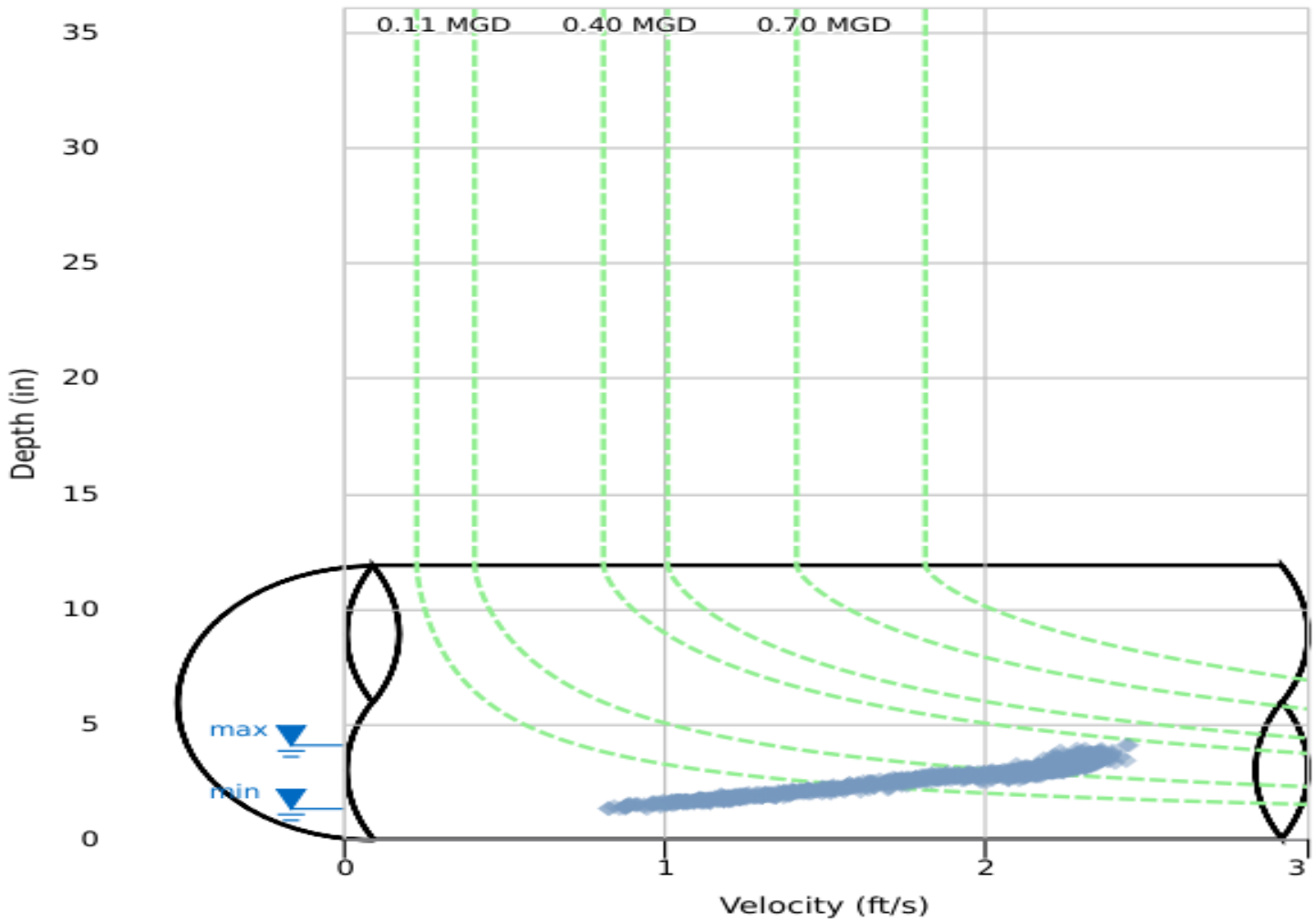
Pipe Height
11.88
in

Report Period

06/11/2023
To
06/27/2023

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Daily Tabular Report

06/11/2023 00:00 - 06/27/2023 23:59
FM_14Pipe: Elliptical (11.88 in H x 11.88 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)					
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total
06/11/2023	05:45	1.31	21:10	4.14	2.86	04:45	0.79	21:10	2.45	1.95	04:50	0.025	21:10	0.379	0.202	0.202
06/12/2023	02:25	1.69	20:55	3.77	2.93	02:25	1.11	21:40	2.46	2.01	02:25	0.048	20:10	0.317	0.203	0.203
06/13/2023	02:00	1.61	20:25	3.96	2.62	01:50	1.00	21:55	2.45	1.81	01:50	0.041	20:30	0.346	0.158	0.158
06/14/2023	02:00	1.62	21:10	3.62	2.62	01:50	0.99	22:00	2.38	1.87	01:50	0.041	21:10	0.299	0.161	0.161
06/15/2023	04:20	1.49	21:30	3.70	2.71	04:25	0.94	21:30	2.33	1.89	04:25	0.034	21:30	0.308	0.175	0.175
06/16/2023	03:20	1.86	20:25	3.45	2.78	03:35	1.20	20:50	2.32	1.96	03:20	0.061	20:25	0.276	0.181	0.181
06/17/2023	02:00	1.46	11:00	3.48	2.67	02:00	0.85	10:10	2.41	1.86	02:00	0.030	10:10	0.285	0.170	0.170
06/18/2023	05:35	1.28	20:55	3.70	2.70	04:45	0.81	10:15	2.42	1.89	05:35	0.025	10:15	0.312	0.177	0.177
06/19/2023	02:05	1.54	21:20	3.78	2.67	02:50	0.96	21:20	2.44	1.85	02:50	0.037	21:20	0.333	0.168	0.168
06/20/2023	02:00	1.36	21:55	3.60	2.62	01:50	0.82	22:10	2.40	1.84	01:55	0.027	21:55	0.299	0.161	0.161
06/21/2023	02:25	1.48	21:05	3.80	2.66	02:00	0.89	21:00	2.37	1.91	02:00	0.032	21:05	0.323	0.171	0.171
06/22/2023	02:20	1.62	21:05	3.88	2.74	02:30	0.94	21:45	2.36	1.92	02:30	0.039	21:05	0.315	0.178	0.178
06/23/2023	02:15	1.90	20:25	3.80	2.87	05:15	1.23	19:55	2.43	2.01	05:15	0.066	20:25	0.326	0.195	0.195
06/24/2023	05:10	1.62	11:15	3.60	2.78	05:25	0.98	15:10	2.39	1.93	05:25	0.041	15:15	0.299	0.184	0.184
06/25/2023	05:10	1.36	20:45	3.86	2.86	05:30	0.79	10:30	2.38	1.91	05:25	0.027	20:45	0.330	0.195	0.195
06/26/2023	02:10	1.64	20:45	3.80	2.75	02:10	1.03	20:50	2.42	1.91	02:10	0.043	20:50	0.321	0.180	0.158
06/27/2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

06/11/2023 00:00 - 06/27/2023 23:59

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)
Total			2.837
Average	2.74	1.91	0.179

FM_15

Site Commentary

SITE INFORMATION

Pipe	Elliptical (24 in H x 24 in W)
Silt	0.00 (in)

OBSERVATIONS

Surcharge conditions were not experienced. Review of the scattergraph shows that free-flow conditions were experienced during the study. Backwater conditions were observed on 12 June 2023 and 13 June 2023.

This site was positioned downstream of site FM_05. A review of flow balancing indicated no problems.

Average flow depth, velocity, and quantity data observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	9.45	2.86	2.133
Minimum	6.82	2.48	1.232
Maximum	12.34	3.10	3.198
Min Time	06/22/2023 4:45:00 AM	06/13/2023 3:30:00 AM	06/18/2023 7:00:00 AM
Max Time	06/23/2023 10:00:00 PM	06/23/2023 7:15:00 PM	06/23/2023 5:30:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the fifteen minutes average.

DATA UPTIME

Data uptime observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

GoodYear.Carollo.TFM.AZ23

Flow Monitoring Site Report

ADS ENVIRONMENTAL SERVICES®

Site Name

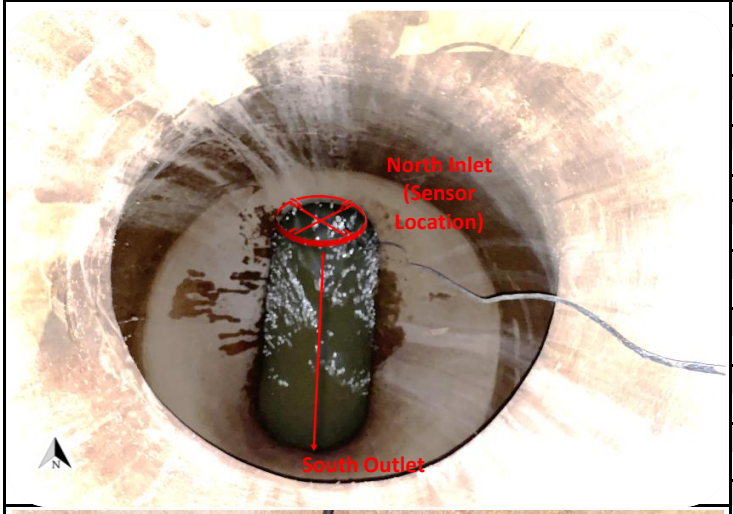
FM_15

Site Address /Location:	4980 S 157th Ave, Goodyear, AZ 85338			Monitor Series	Location Type
				TRITON+	Temporary
Site Access Details:	No Traffic Control required	Latitude:	33.4030411	Pipe Size (H x W)	Pipe Shape
		Longitude:	-112.4008065	24.00"x 24.00"	Circular



Manhole #	System Characteristics
MH96B-108	Residential
Access	Traffic
Drive	Light







ADS Project Name:	GoodYear.Carollo.TFM.AZ23
ADS Project Number:	22930.11.325

Installation Information

Installation Date:	Installation Type:
Tuesday, June 6, 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4)	0 - 5 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW)
8:00:00 PM	24.00"x24.00"
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
10.50"	-
Downlooker Physical Offset (in)	Measurement Confidence (in)
NA	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
3.25	0''
Silt (in)	Silt Type
0''	

Hydraulic Comments:

Smooth flow with low depth and low velocity

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
8.634	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
26"	54''
Manhole Cover	Manhole Frame
Unbolted	Normal
Active Drop Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Vitrified Clay Pipe	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

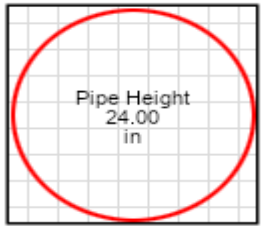
No TC required

Hydrograph Report

FM_15

Flow Monitor

FM_15

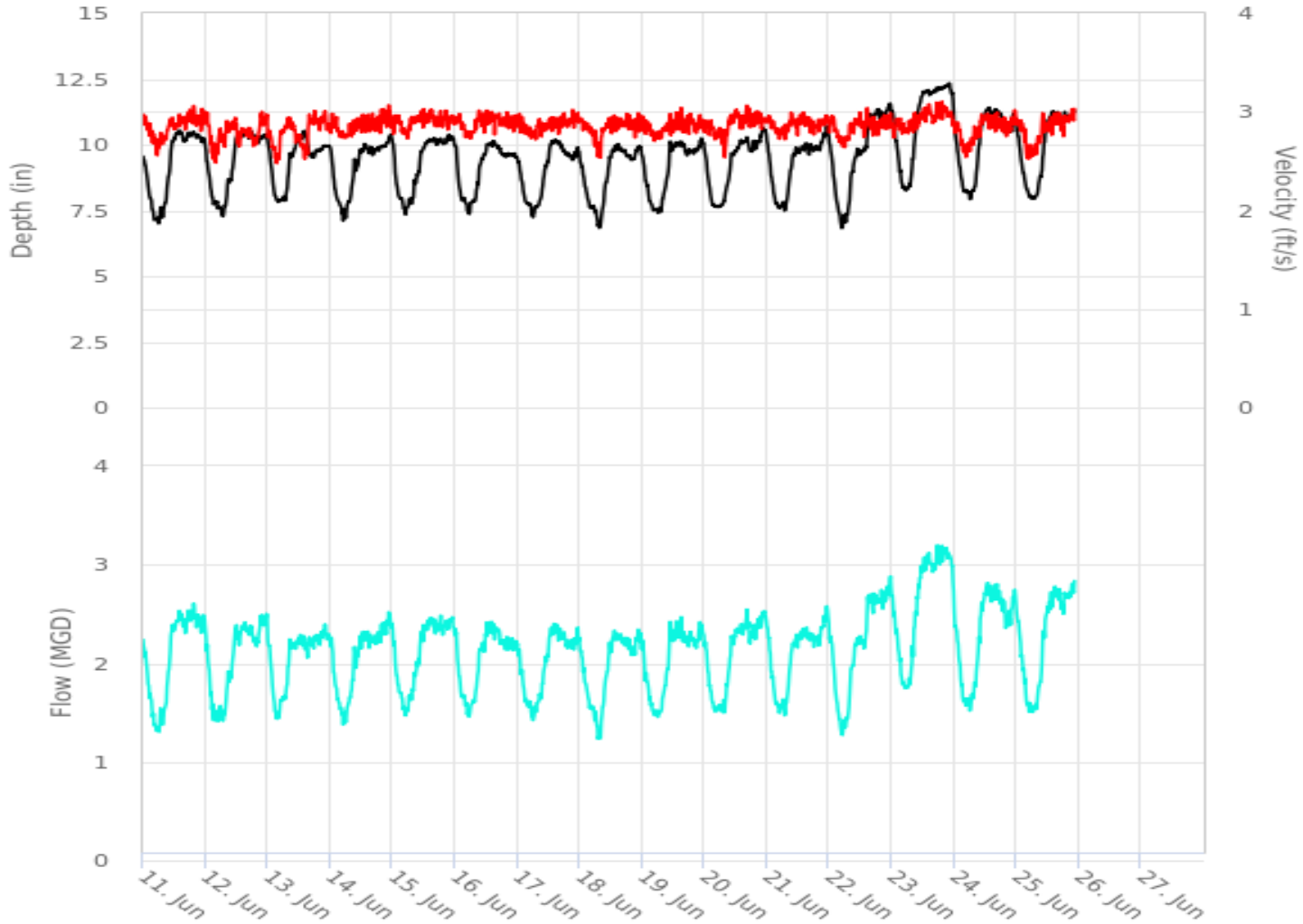


Report Period

06/11/2023
To
06/27/2023

Legend

DFINAL
QFINAL
VFINAL



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Scattergraph Report

FM_15

Flow Monitor

FM_15

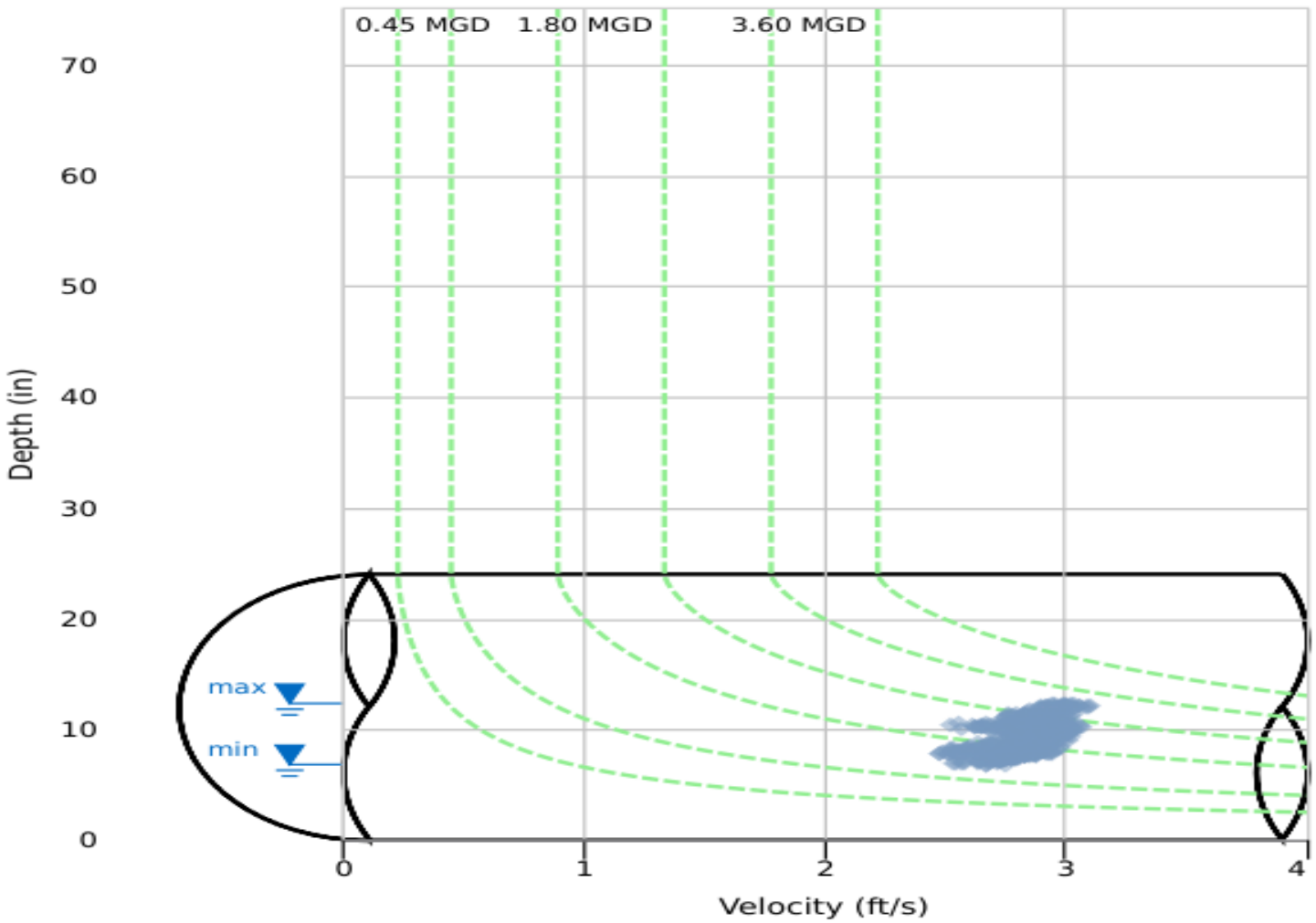
Pipe Height
24.00
in

Report Period

06/11/2023
To
06/27/2023

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



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Daily Tabular Report

06/11/2023 00:00 - 06/27/2023 23:59
FM_15Pipe: Elliptical (24 in H x 24 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)					
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total
06/11/2023	06:15	6.94	13:50	10.60	9.27	05:40	2.54	17:30	3.11	2.86	06:15	1.266	19:40	2.663	2.085	2.085
06/12/2023	06:50	7.26	15:20	10.55	9.34	04:00	2.45	00:50	3.04	2.79	04:50	1.350	23:50	2.546	2.047	2.047
06/13/2023	04:10	7.78	14:05	10.57	9.39	03:40	2.44	22:10	3.06	2.79	03:40	1.401	22:25	2.429	2.056	2.056
06/14/2023	05:05	7.08	23:20	10.43	9.16	06:05	2.70	22:35	3.11	2.87	05:05	1.361	23:05	2.555	2.054	2.054
06/15/2023	05:00	7.30	21:45	10.42	9.30	06:00	2.69	15:05	3.10	2.91	04:55	1.449	18:40	2.543	2.118	2.118
06/16/2023	05:40	7.31	14:50	10.21	9.12	06:05	2.68	14:00	3.08	2.89	05:15	1.436	14:00	2.480	2.053	2.053
06/17/2023	06:05	7.13	14:55	10.26	9.01	07:05	2.68	23:15	3.07	2.87	06:05	1.390	16:25	2.447	2.005	2.005
06/18/2023	07:40	6.79	14:45	10.03	8.90	08:05	2.46	19:10	3.05	2.84	08:05	1.195	14:45	2.404	1.957	1.957
06/19/2023	06:10	7.37	22:50	10.33	9.13	16:20	2.64	15:00	3.06	2.86	04:15	1.434	15:00	2.502	2.035	2.035
06/20/2023	04:45	7.56	22:35	10.68	9.26	07:40	2.47	16:20	3.12	2.87	07:40	1.416	16:20	2.605	2.089	2.089
06/21/2023	06:40	7.47	23:00	10.76	9.28	04:50	2.67	12:45	3.05	2.87	07:00	1.458	23:25	2.642	2.090	2.090
06/22/2023	04:55	6.78	23:10	11.59	9.64	06:00	2.56	14:40	3.06	2.85	05:00	1.252	23:35	2.897	2.185	2.185
06/23/2023	05:10	8.22	22:00	12.36	10.92	08:25	2.67	19:15	3.15	2.93	06:00	1.720	19:15	3.242	2.643	2.643
06/24/2023	06:10	7.90	13:25	11.43	10.11	04:30	2.50	13:10	3.07	2.83	06:00	1.498	13:10	2.915	2.314	2.314
06/25/2023	05:50	7.91	22:25	11.35	9.97	05:40	2.46	22:25	3.09	2.82	05:45	1.443	22:25	2.921	2.270	2.129
06/26/2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06/27/2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

06/11/2023 00:00 - 06/27/2023 23:59

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)
Total			31.859
Average	9.45	2.86	2.133

FM_16

Site Commentary

SITE INFORMATION

Pipe	Elliptical (36 in H x 36 in W)
Silt	0.00 (in)

OBSERVATIONS

Surcharge conditions were not experienced. Review of the scattergraph shows that free-flow conditions were maintained throughout the study.

This site was positioned downstream of sites FM_02, FM_08, FM_11, FM_12, FM_03, FM_01, and FM_06. A review of flow balancing indicated no problems.

Average flow depth, velocity, and quantity data observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023**, along with observed minimum and maximum data, are provided in the following table.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	11.45	2.67	3.420
Minimum	7.36	2.08	1.445
Maximum	16.24	3.11	6.098
Min Time	06/22/2023 5:45:00 AM	06/22/2023 5:00:00 AM	06/22/2023 5:45:00 AM
Max Time	06/13/2023 11:45:00 AM	06/13/2023 11:00:00 AM	06/13/2023 11:00:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the fifteen minutes average.

DATA UPTIME

Data uptime observed during **Sunday, 11 June 2023 to Tuesday, 27 June 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

GoodYear.Carollo.TFM.AZ23

Flow Monitoring Site Report

ADS ENVIRONMENTAL SERVICES®

Site Name

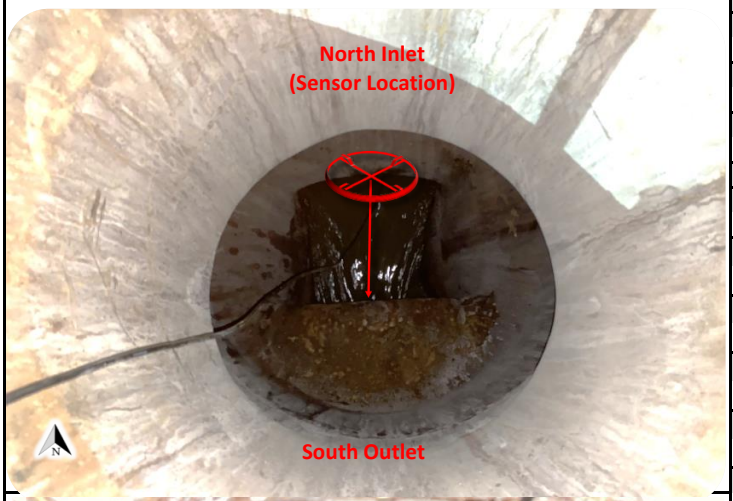
FM_16

Site Address /Location:	4980 S 157th Ave, Goodyear, AZ 85338			Monitor Series	Location Type
				TRITON+	Temporary
Site Access Details:	No Traffic Control required	Latitude:	33.4025189	Pipe Size (H x W)	Pipe Shape
		Longitude:	-112.4007244	36.00"x 36.00"	Circular

Manhole #	System Characteristics
MH96B-102	Residential
Access	Traffic
Drive	Light









ADS Project Name:	GoodYear.Carollo.TFM.AZ23
ADS Project Number:	22930.11.325

Installation Information

Installation Date:	Installation Type:
Tuesday, June 6, 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4)	0 - 5 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW)
9:35:00 PM	36.00"x36.00"
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
12.50"	-
Downlooker Physical Offset (in)	Measurement Confidence (in)
NA	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
3.2	0''
Silt (in)	Silt Type
0''	

Hydraulic Comments:
Smooth flow with medium depth and medium velocity

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
9.86	Single
Manhole Material:	Manhole Condition:
Concrete	Good
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
26"	54''
Manhole Cover	Manhole Frame
Unbolted	Normal
Active Drop Connections	Air Quality:
No	Normal
Pipe Material	Pipe Condition:
Vitrified Clay Pipe	Good

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

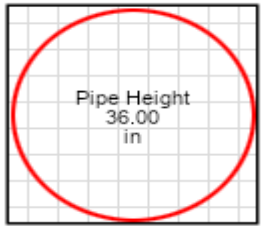
No TC required

Hydrograph Report

FM_16

Flow Monitor

FM_16

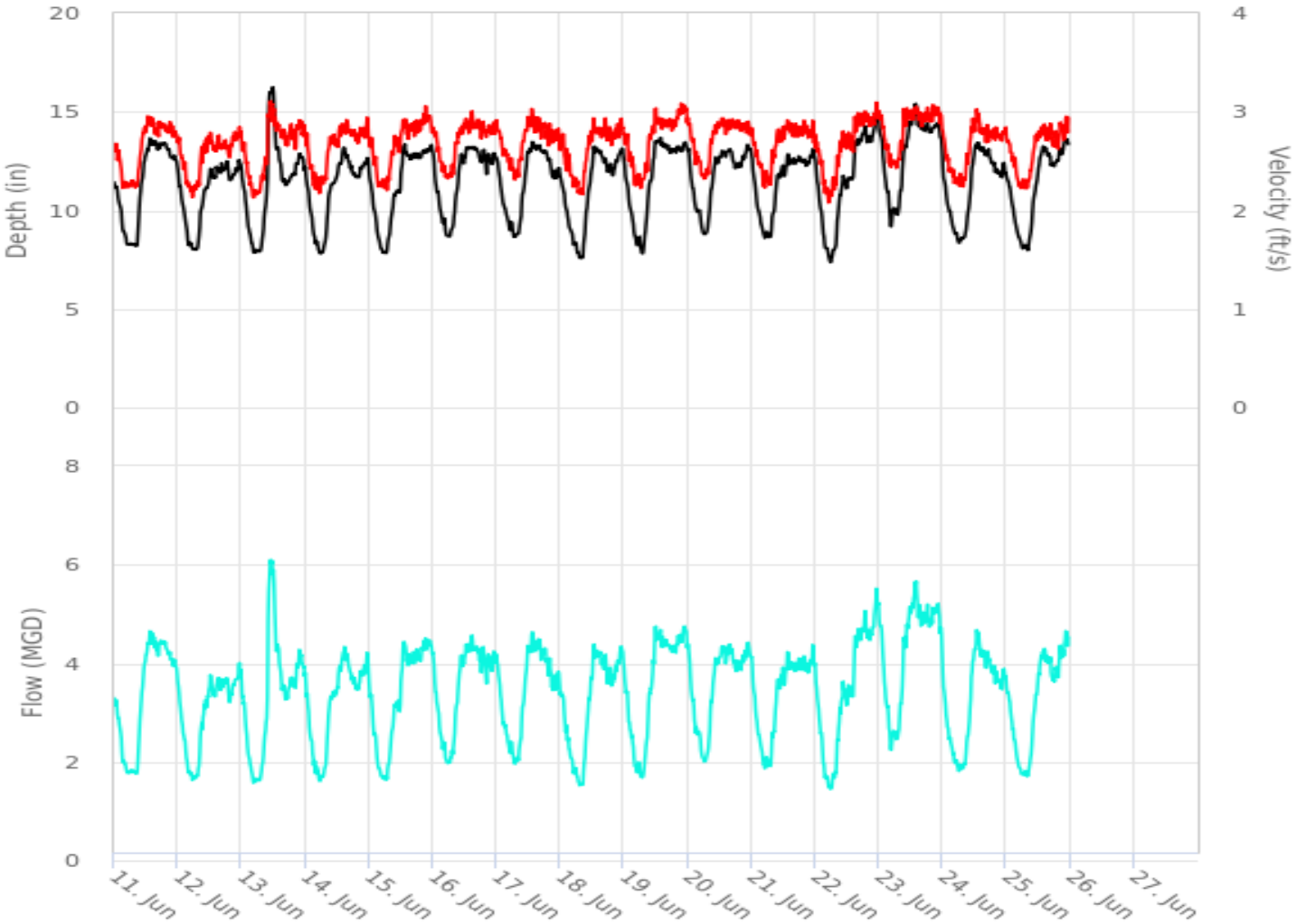


Report Period

06/11/2023
To
06/27/2023

Legend

DFINAL
QFINAL
VFINAL



4820 Mercury Street, Suite C
San Diego, CA 92111

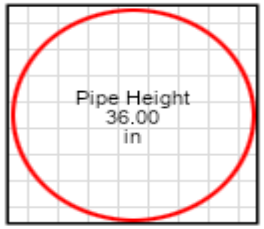
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Scattergraph Report

FM_16

Flow Monitor

FM_16



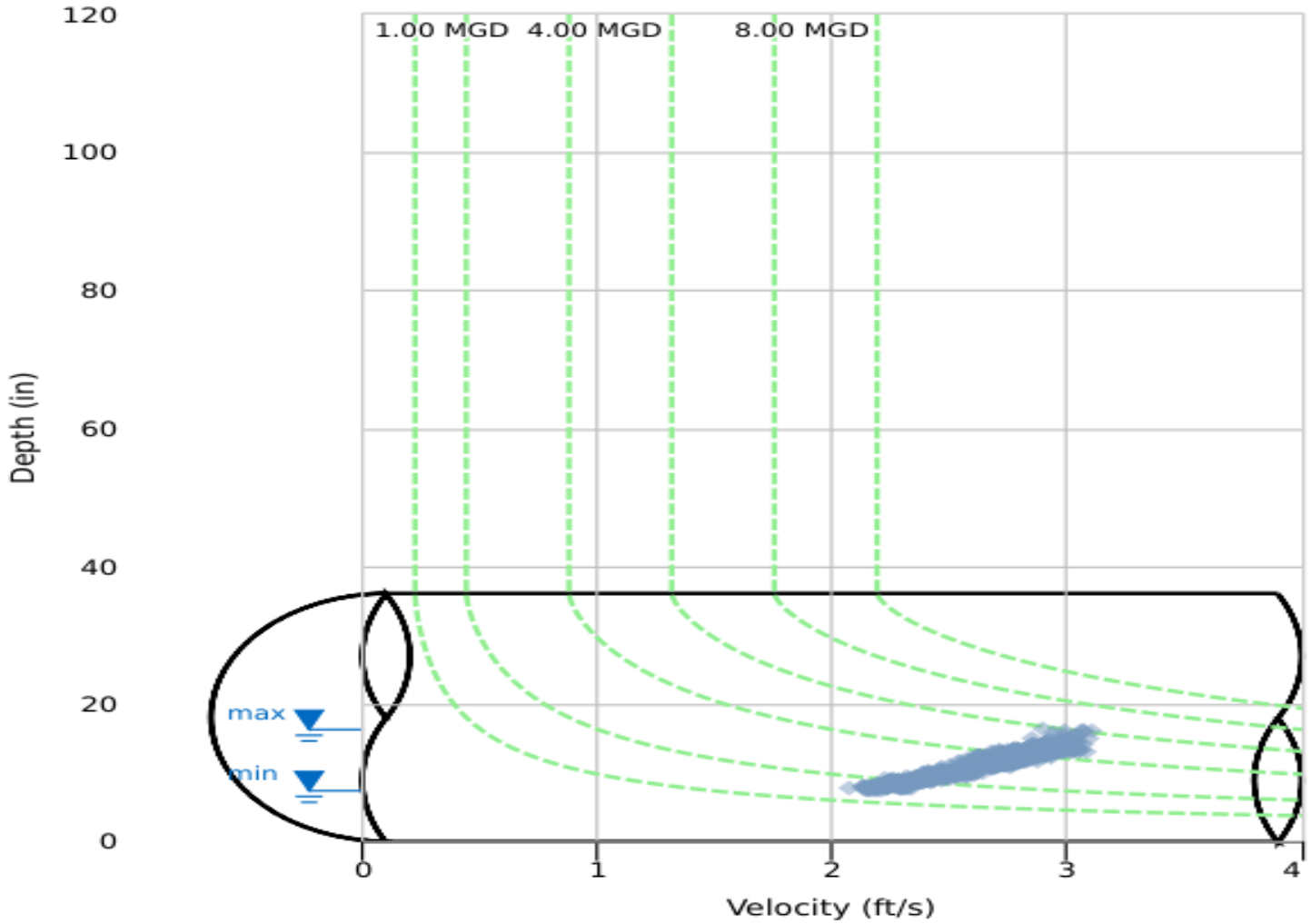
Report Period

06/11/2023
To
06/27/2023

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth





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Daily Tabular Report

06/11/2023 00:00 - 06/27/2023 23:59
FM_16Pipe: Elliptical (36 in H x 36 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)					
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total
06/11/2023	08:25	8.09	13:30	13.80	11.41	08:10	2.18	14:15	3.00	2.64	08:30	1.722	14:15	4.754	3.371	3.371
06/12/2023	06:15	7.97	18:40	12.69	10.83	05:30	2.09	23:20	2.89	2.56	05:35	1.607	23:20	4.065	3.015	3.015
06/13/2023	04:40	7.85	11:50	16.29	11.35	04:40	2.09	11:15	3.13	2.64	04:40	1.539	10:55	6.172	3.367	3.367
06/14/2023	05:45	7.75	14:30	13.29	11.01	05:25	2.15	23:25	2.95	2.64	05:35	1.590	14:50	4.361	3.189	3.189
06/15/2023	06:20	7.79	13:35	13.43	11.23	06:50	2.16	20:55	3.12	2.67	06:50	1.614	20:55	4.655	3.335	3.335
06/16/2023	05:50	8.64	13:55	13.43	11.67	07:00	2.25	12:25	3.02	2.72	05:45	1.928	14:55	4.604	3.542	3.542
06/17/2023	06:35	8.65	13:35	13.52	11.48	07:30	2.27	13:20	3.07	2.71	07:00	1.934	13:25	4.671	3.455	3.455
06/18/2023	08:05	7.55	12:45	13.27	11.03	08:40	2.10	17:05	2.98	2.63	07:30	1.494	12:55	4.408	3.194	3.194
06/19/2023	06:55	7.76	13:45	13.73	11.66	04:15	2.18	21:35	3.12	2.73	06:45	1.654	22:45	4.845	3.587	3.587
06/20/2023	06:25	8.77	22:40	13.38	11.75	05:45	2.30	13:15	3.04	2.74	06:35	1.988	22:45	4.503	3.593	3.593
06/21/2023	05:05	8.58	23:05	13.11	11.40	04:35	2.20	20:45	2.98	2.67	05:10	1.851	23:05	4.449	3.372	3.372
06/22/2023	05:50	7.34	23:15	14.96	11.47	05:10	2.06	23:05	3.12	2.66	05:50	1.439	23:15	5.604	3.451	3.451
06/23/2023	04:30	9.13	13:40	15.54	13.01	04:30	2.26	14:00	3.12	2.84	04:30	2.064	14:00	5.783	4.294	4.294
06/24/2023	06:05	8.34	12:55	13.57	11.23	06:15	2.21	13:00	3.10	2.64	06:15	1.784	13:00	4.842	3.284	3.284
06/25/2023	08:00	7.94	22:25	13.67	11.18	05:00	2.19	23:20	2.99	2.62	06:00	1.683	22:25	4.703	3.241	3.162
06/26/2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06/27/2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

06/11/2023 00:00 - 06/27/2023 23:59

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)
Total			51.211
Average	11.45	2.67	3.420

APPENDIX 5B

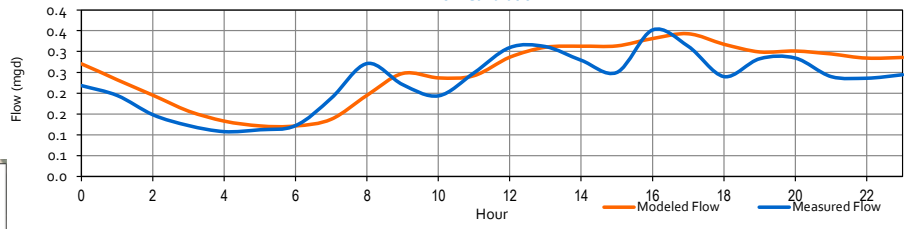
MODEL CALIBRATION RESULTS

Flow Monitoring Site FM1, Dry Weather Flow Calibration

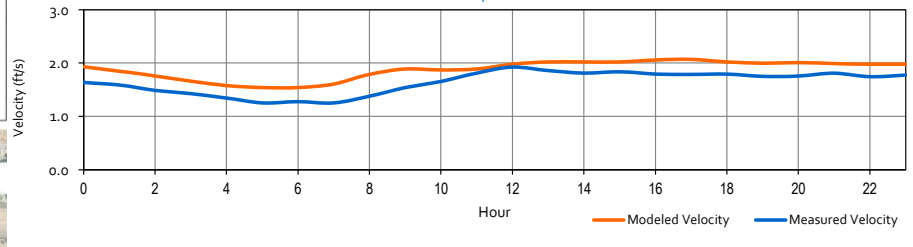
Pipeline Diameter: 12"
Manhole ID: MH88C-301
Model Pipe ID: 211 (gpm)



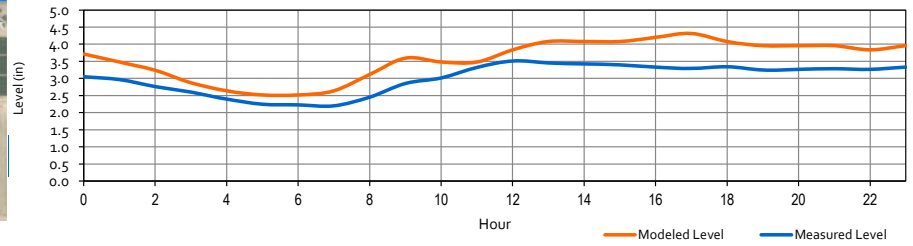
Flow Calibration



Velocity Calibration



Level Calibration

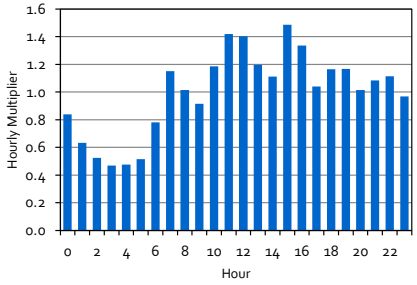


Model Calibration Summary

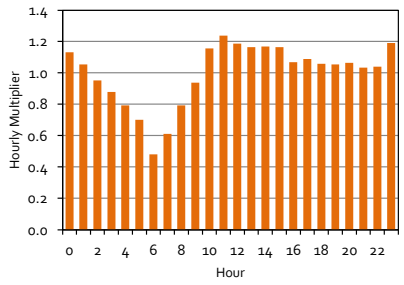
Day	Measured Data				Modeled Data				Percent Error[1]			
	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (%)	Peak Flow (%)	Avg. Level (%)	Avg. Vel. (%)
Thurs	0.23	0.35	3.5	1.8	0.25	0.34	3.61	1.89	9%	-3%	5%	2%

Notes:
(1) Percent Error = (Modeled - Measured) / Measured x 100

Weekday Diurnal Pattern



Weekend Diurnal Pattern

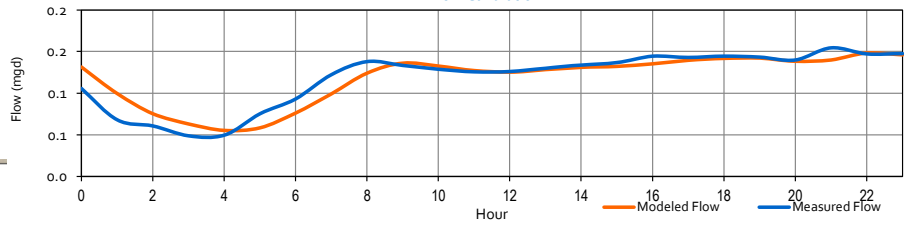


Flow Monitoring Site FM2, Dry Weather Flow Calibration

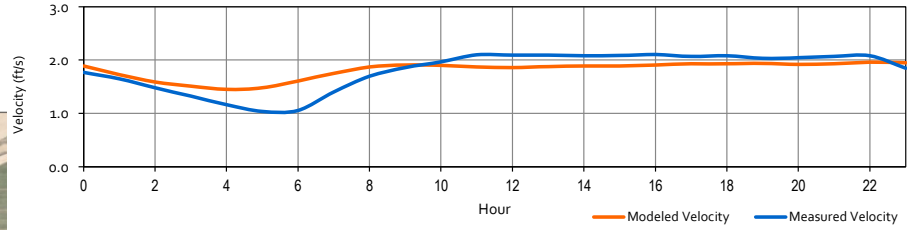
Pipeline Diameter: 12"
Manhole ID: MH86D-405
Model Pipe ID: 1758 (gpm)



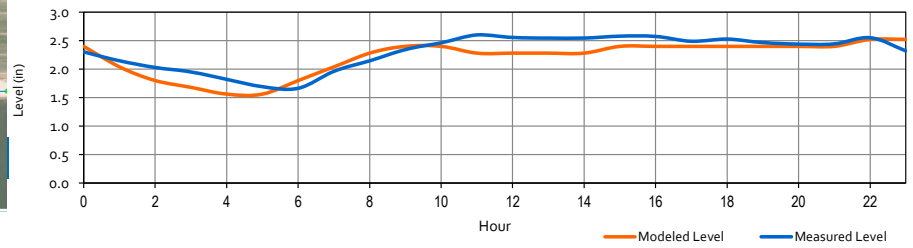
Flow Calibration



Velocity Calibration



Level Calibration

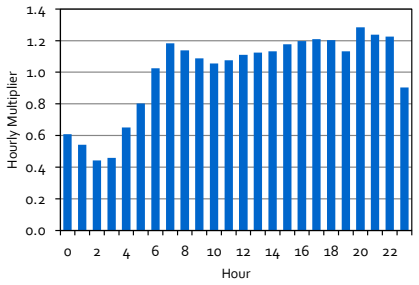


Model Calibration Summary

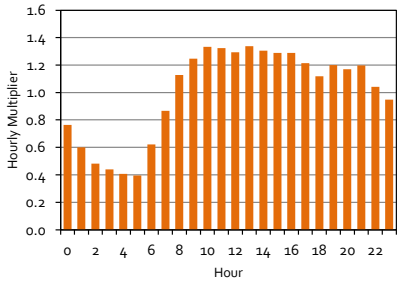
	Measured Data				Modeled Data				Percent Error[1]			
Day	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (%)	Peak Flow (%)	Avg. Level (%)	Avg. Vel. (%)
Thurs	0.12	0.15	2.3	1.7	0.12	0.15	2.21	1.81	0%	-4%	-3%	4%

Notes:
(1) Percent Error = (Modeled - Measured) / Measured x 100

Weekday Diurnal Pattern



Weekend Diurnal Pattern

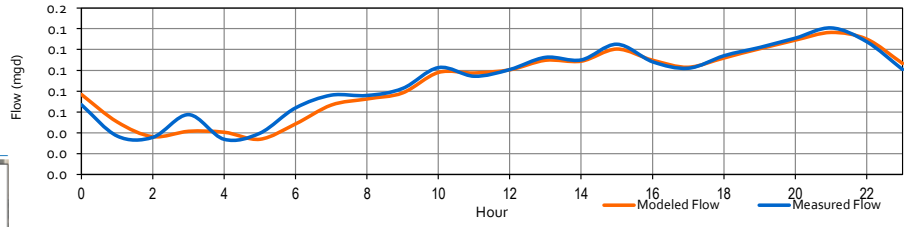


Flow Monitoring Site FM3, Dry Weather Flow Calibration

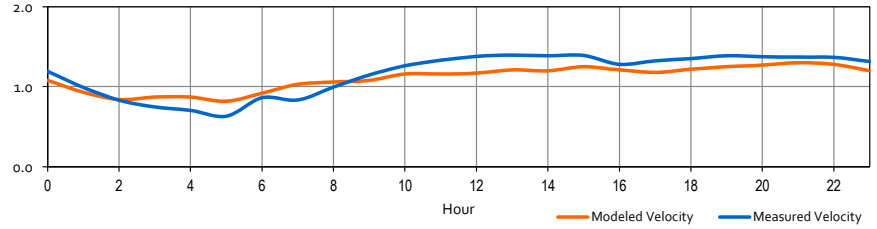
Pipeline Diameter: 15"
Manhole ID: MH57B-304
Model Pipe ID: 4029 (gpm)



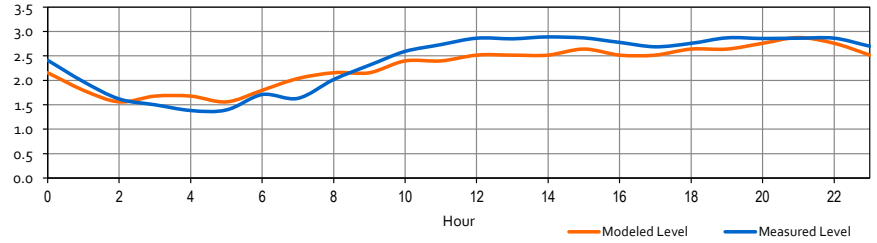
Flow Calibration



Velocity Calibration



Level Calibration

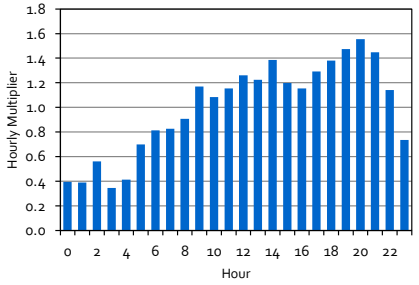


Model Calibration Summary

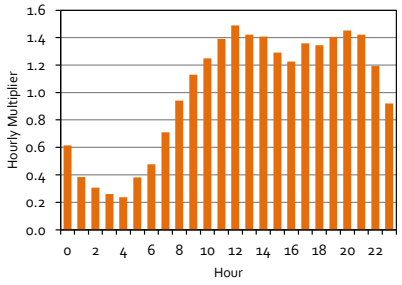
	Measured Data				Modeled Data				Percent Error[1]			
Day	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (%)	Peak Flow (%)	Avg. Level (%)	Avg. Vel. (%)
Thurs	0.09	0.14	2.3	1.2	0.09	0.14	2.29	1.11	-2%	-3%	-1%	-4%

Notes:
(1) Percent Error = (Modeled - Measured) / Measured x 100

Weekday Diurnal Pattern



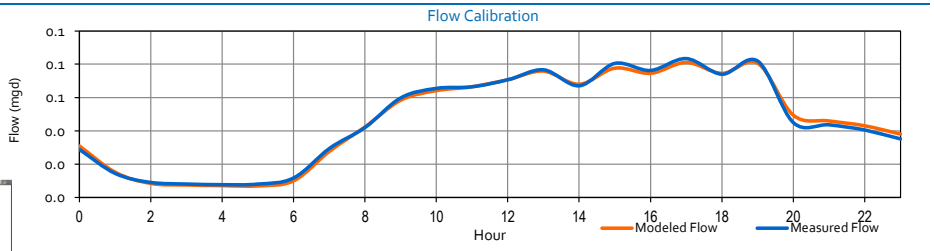
Weekend Diurnal Pattern

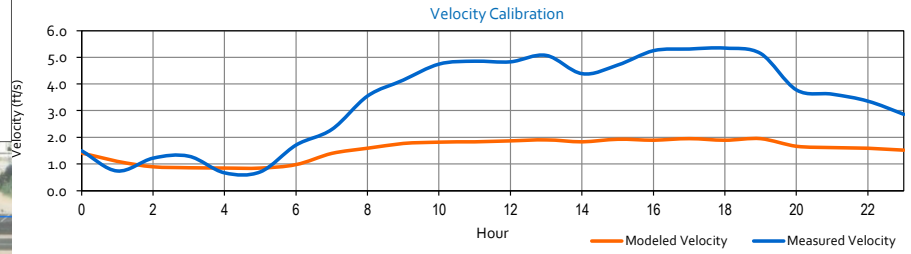


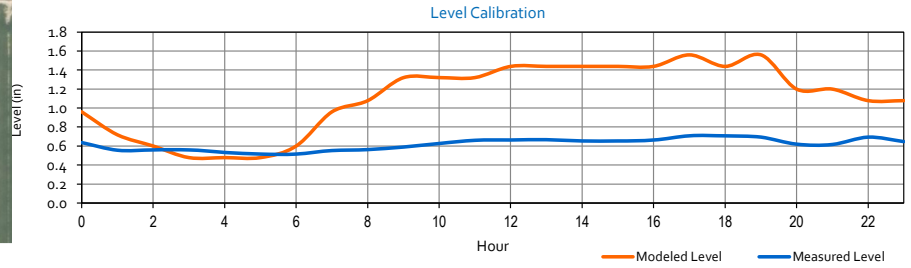
Flow Monitoring Site FM4, Dry Weather Flow Calibration

Pipeline Diameter: 15"
Manhole ID: MH64D-403
Model Pipe ID: 4263 (gpm)





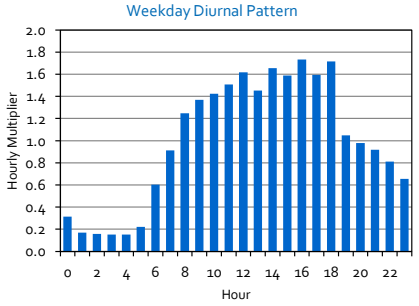


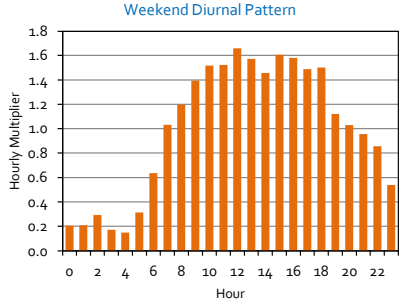


Model Calibration Summary

	Measured Data				Modeled Data				Percent Error[1]			
Day	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (%)	Peak Flow (%)	Avg. Level (%)	Avg. Vel. (%)
Thurs	0.05	0.08	0.7	3.6	0.05	0.08	1.11	1.54	0%	-3%	70%	-58%

Notes:
(1) Percent Error = (Modeled - Measured) / Measured x 100



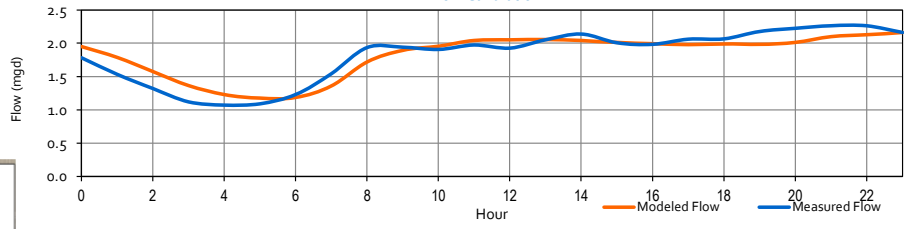


Flow Monitoring Site FM5, Dry Weather Flow Calibration

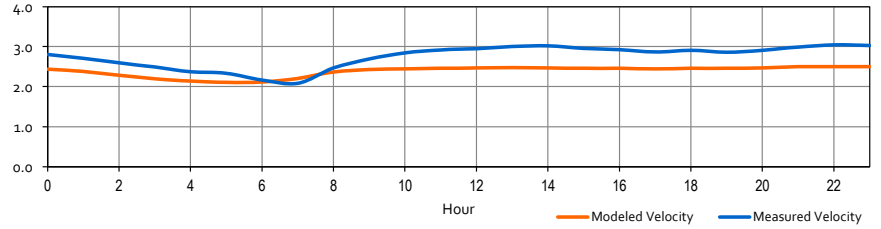
Pipeline Diameter: 30"
Manhole ID: MH86A-301
Model Pipe ID: 3056 (gpm)



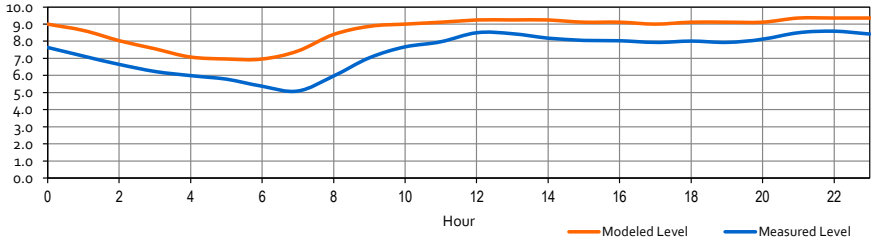
Flow Calibration



Velocity Calibration



Level Calibration

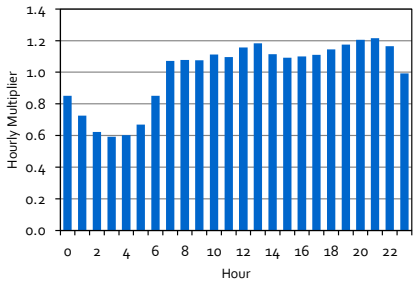


Model Calibration Summary

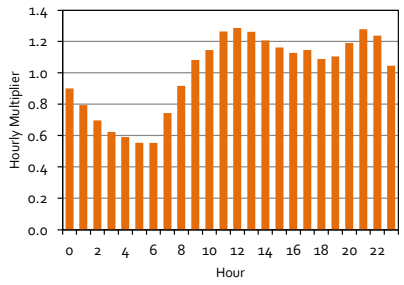
	Measured Data				Modeled Data				Percent Error[1]			
Day	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (%)	Peak Flow (%)	Avg. Level (%)	Avg. Vel. (%)
Thurs	1.82	2.27	7.6	2.9	1.82	2.16	8.65	2.39	0%	-5%	13%	-16%

Notes:
(1) Percent Error = (Modeled - Measured) / Measured x 100

Weekday Diurnal Pattern



Weekend Diurnal Pattern

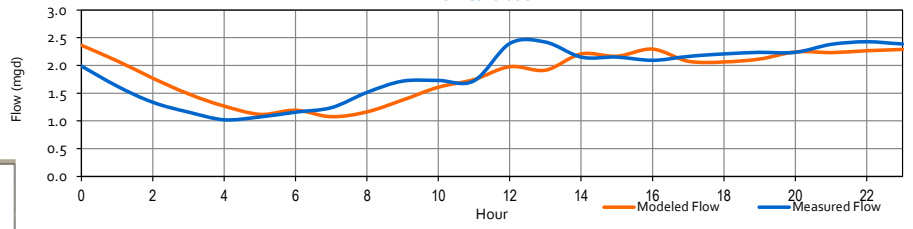


Flow Monitoring Site FM6, Dry Weather Flow Calibration

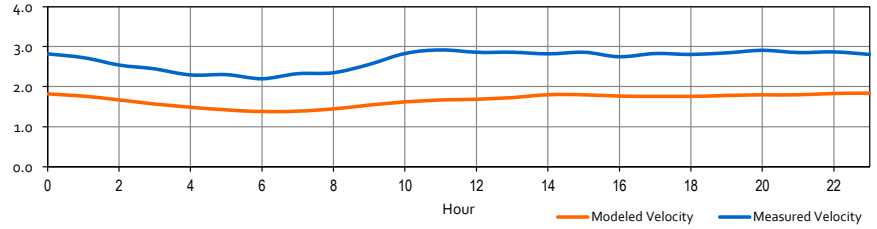
Pipeline Diameter: 54"
Manhole ID: MH86C-202
Model Pipe ID: 3859 (gpm)



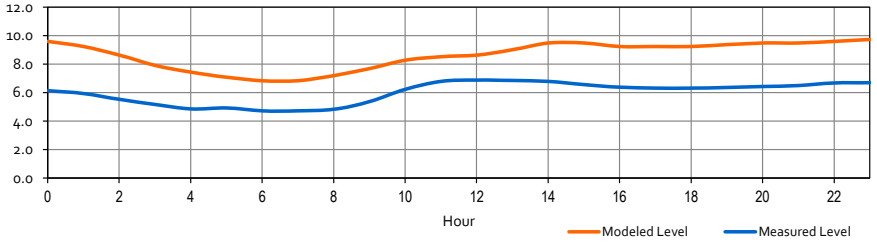
Flow Calibration



Velocity Calibration



Level Calibration

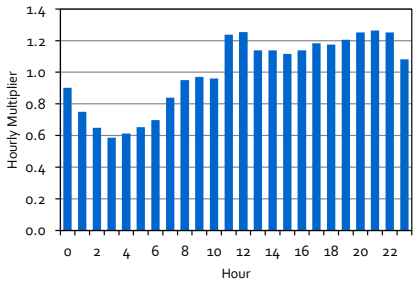


Model Calibration Summary

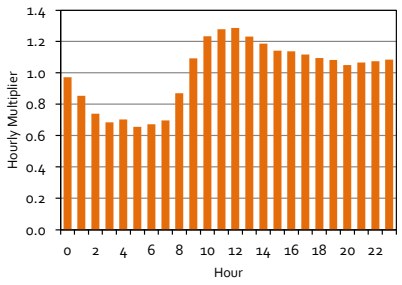
Day	Measured Data				Modeled Data				Percent Error[1]			
	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (%)	Peak Flow (%)	Avg. Level (%)	Avg. Vel. (%)
Thurs	1.86	2.43	6.3	2.7	1.84	2.37	8.71	1.68	-1%	-3%	38%	-39%

Notes:
(1) Percent Error = (Modeled - Measured) / Measured x 100

Weekday Diurnal Pattern



Weekend Diurnal Pattern

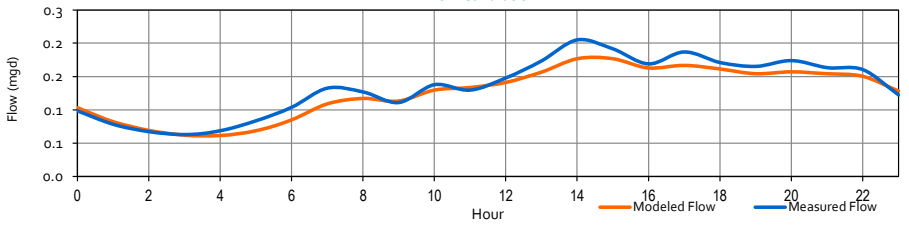


Flow Monitoring Site FM7, Dry Weather Flow Calibration

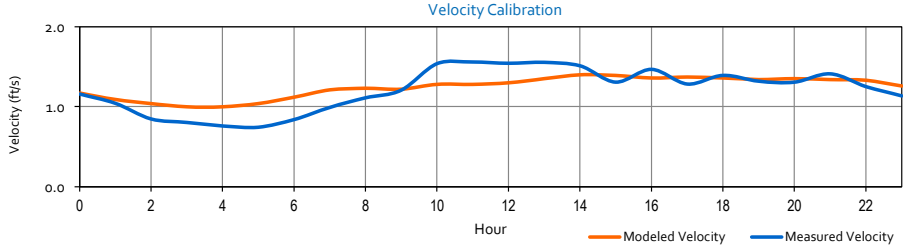
Pipeline Diameter: 12"
Manhole ID: MH79A-101
Model Pipe ID: 3099 (gpm)



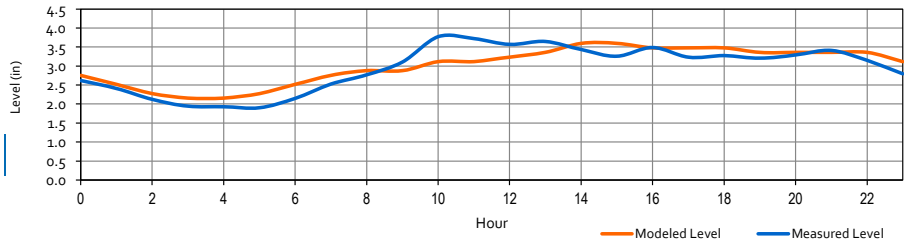
Flow Calibration



Velocity Calibration



Level Calibration

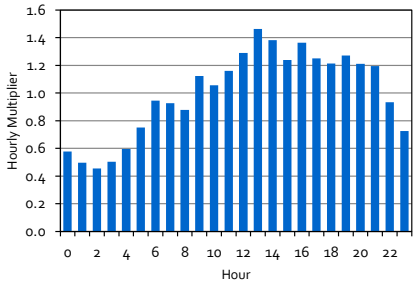


Model Calibration Summary

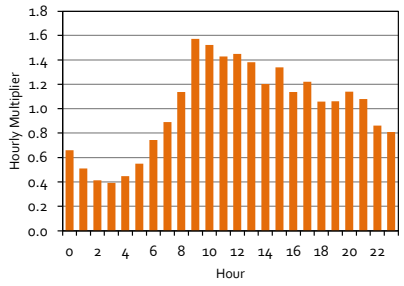
	Measured Data				Modeled Data				Percent Error[1]			
Day	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (%)	Peak Flow (%)	Avg. Level (%)	Avg. Vel. (%)
Thurs	0.13	0.21	3.0	1.3	0.13	0.18	2.99	1.24	-7%	-14%	-1%	-4%

Notes:
(1) Percent Error = (Modeled - Measured) / Measured x 100

Weekday Diurnal Pattern



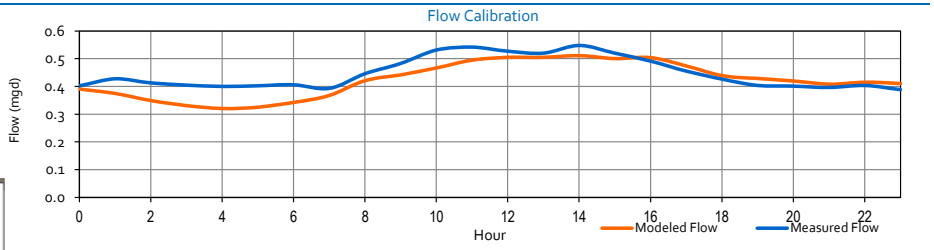
Weekend Diurnal Pattern

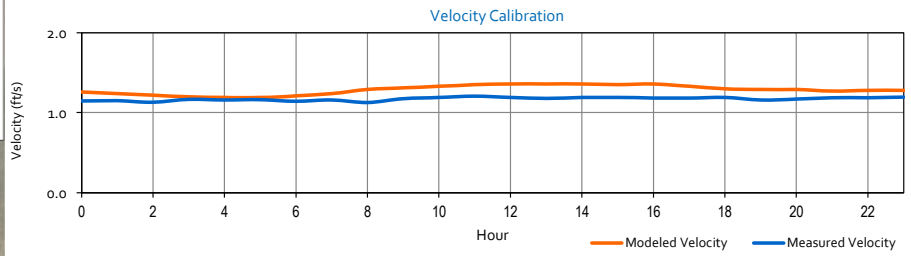


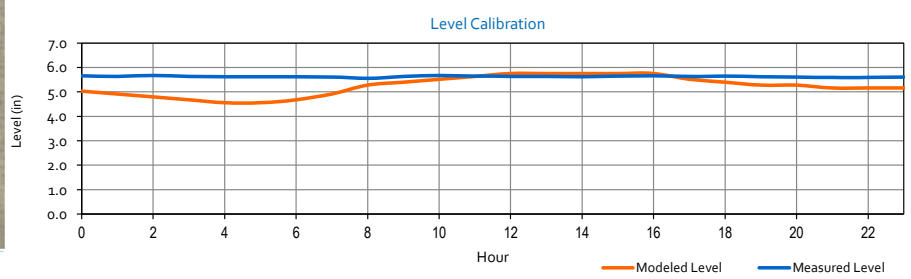
Flow Monitoring Site FM8, Dry Weather Flow Calibration

Pipeline Diameter: 24"
Manhole ID: MH77B-308
Model Pipe ID: 5404 (gpm)





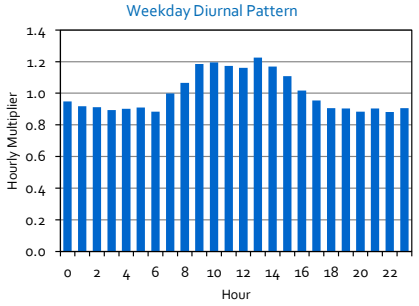


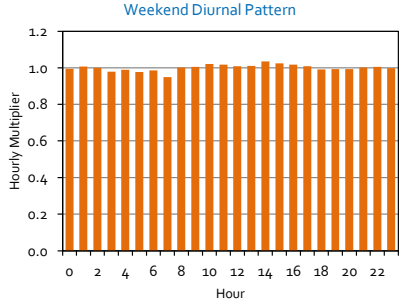


Model Calibration Summary

	Measured Data				Modeled Data				Percent Error[1]			
Day	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (%)	Peak Flow (%)	Avg. Level (%)	Avg. Vel. (%)
Thurs	0.45	0.55	5.9	1.2	0.42	0.51	5.24	1.29	-5%	-7%	-11%	8%

Notes:
(1) Percent Error = (Modeled - Measured) / Measured x 100



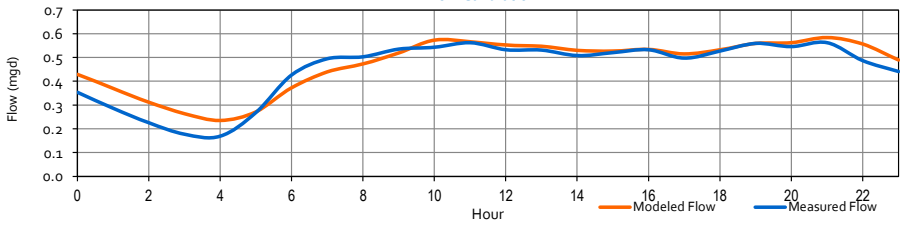


Flow Monitoring Site FMg, Dry Weather Flow Calibration

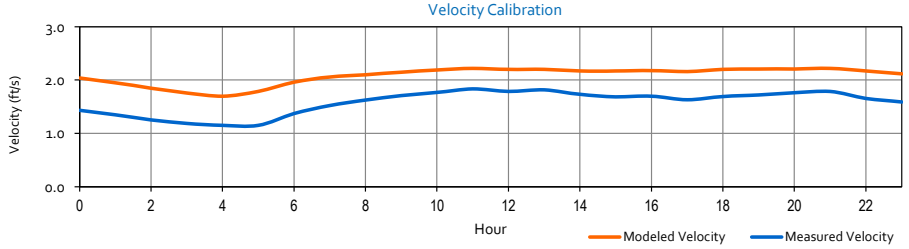
Pipeline Diameter: 24"
Manhole ID: MH45C-401
Model Pipe ID: 3091 (gpm)



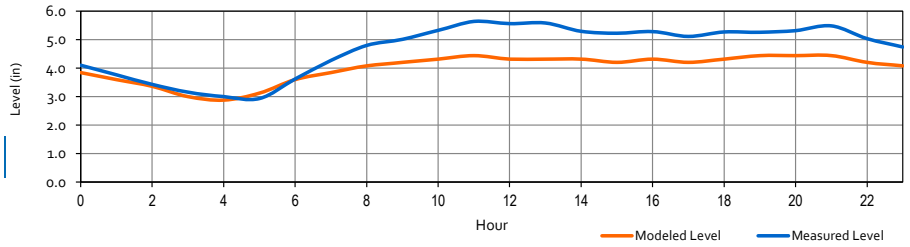
Flow Calibration



Velocity Calibration



Level Calibration

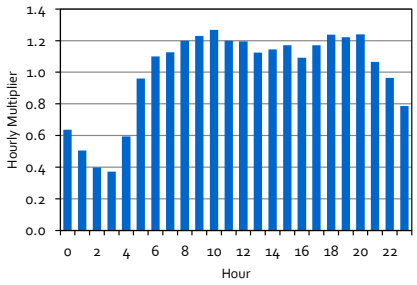


Model Calibration Summary

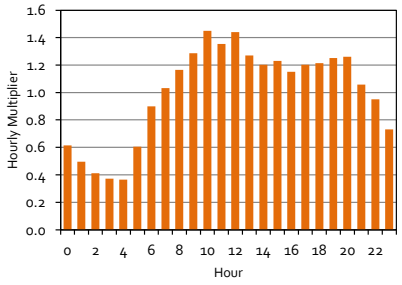
	Measured Data				Modeled Data				Percent Error[1]			
Day	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (%)	Peak Flow (%)	Avg. Level (%)	Avg. Vel. (%)
Thurs	0.45	0.56	4.6	1.6	0.47	0.58	4.00	2.09	5%	4%	-13%	30%

Notes:
(1) Percent Error = (Modeled - Measured) / Measured x 100

Weekday Diurnal Pattern



Weekend Diurnal Pattern

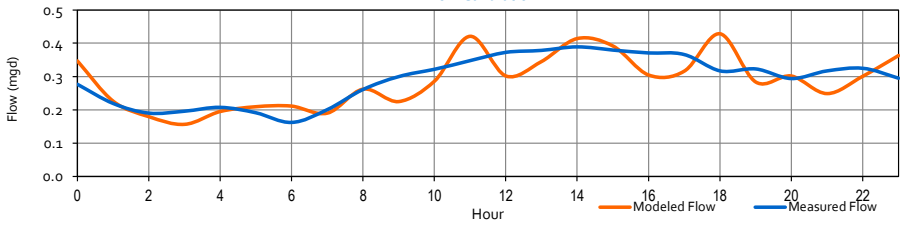


Flow Monitoring Site FM11, Dry Weather Flow Calibration

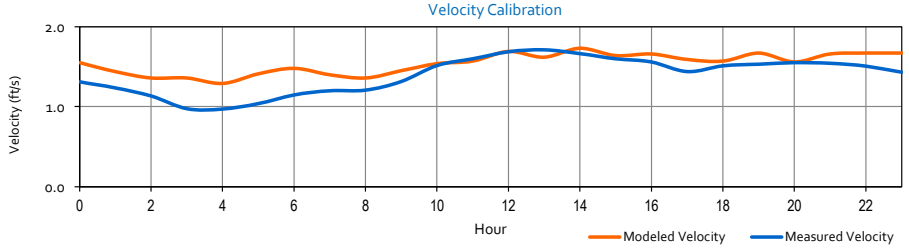
Pipeline Diameter: 18"
Manhole ID: MH58C-302
Model Pipe ID: 798 (gpm)



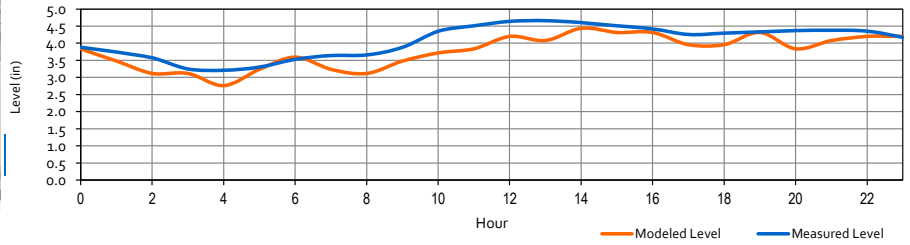
Flow Calibration



Velocity Calibration



Level Calibration

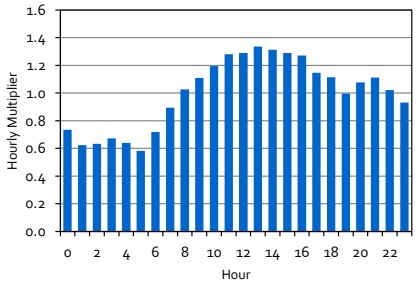


Model Calibration Summary

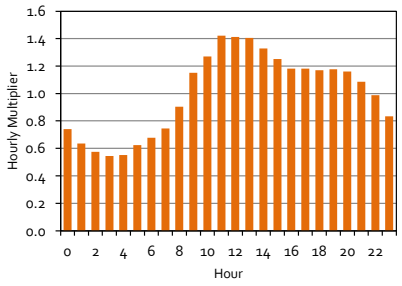
Day	Measured Data				Modeled Data				Percent Error[1]			
	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (%)	Peak Flow (%)	Avg. Level (%)	Avg. Vel. (%)
Thurs	0.29	0.39	4.2	1.4	0.29	0.43	3.87	1.57	-1%	10%	-7%	10%

Notes:
(1) Percent Error = (Modeled - Measured) / Measured x 100

Weekday Diurnal Pattern

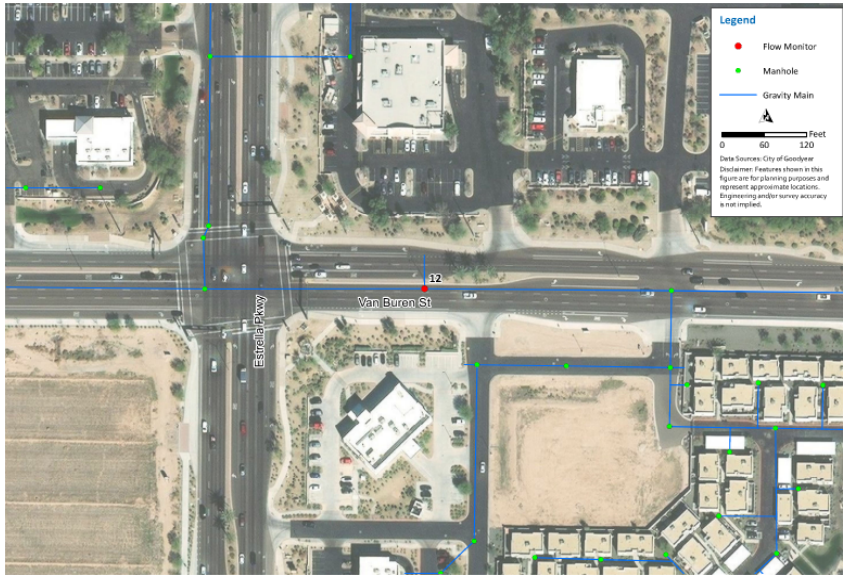


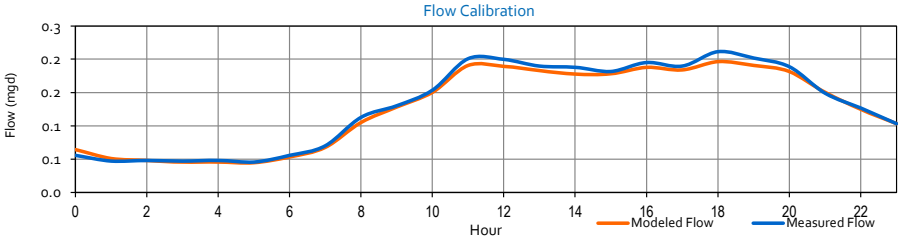
Weekend Diurnal Pattern

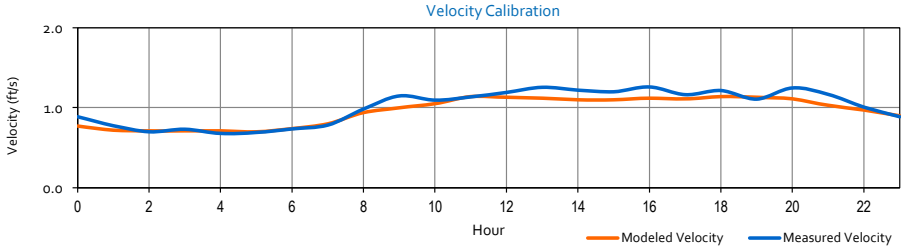


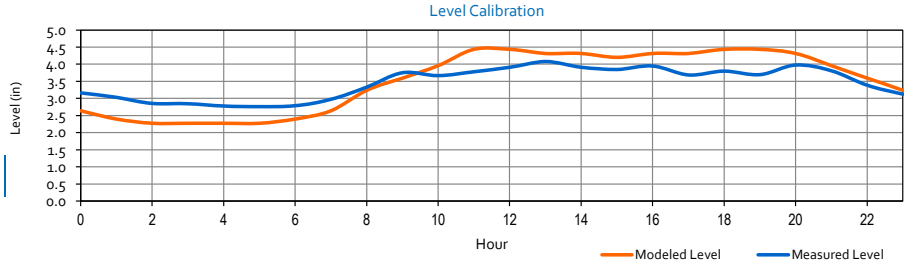
Flow Monitoring Site FM12, Dry Weather Flow Calibration

Pipeline Diameter: 12"
Manhole ID: MH67A-104
Model Pipe ID: 3270 (gpm)





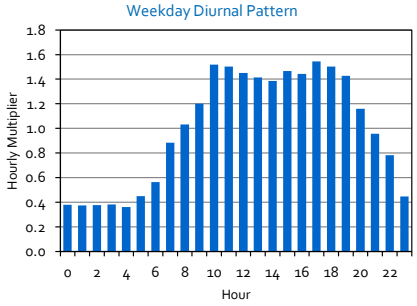


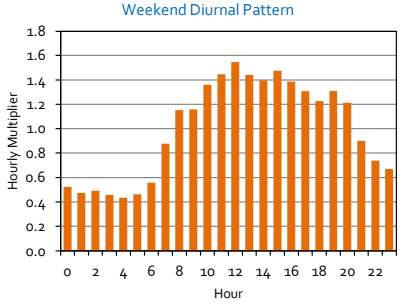


Model Calibration Summary

Day	Measured Data				Modeled Data				Percent Error[1]			
	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (%)	Peak Flow (%)	Avg. Level (%)	Avg. Vel. (%)
Thurs	0.13	0.21	3.5	1.0	0.13	0.20	3.51	0.95	-3%	-7%	1%	-8%

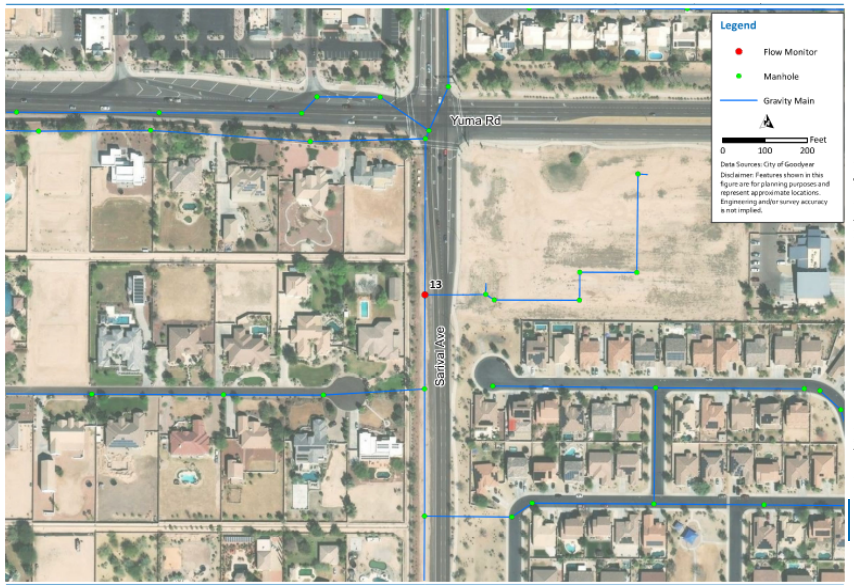
Notes:
(1) Percent Error = (Modeled - Measured) / Measured x 100



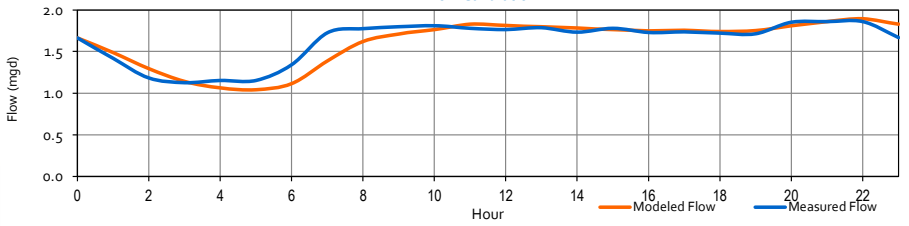


Flow Monitoring Site FM13, Dry Weather Flow Calibration

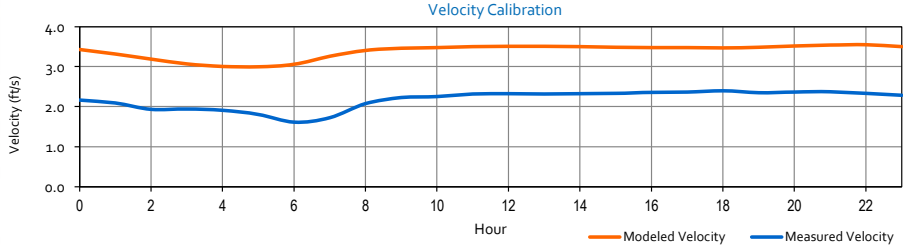
Pipeline Diameter: 24"
Manhole ID: MH75B-203
Model Pipe ID: 887 (gpm)



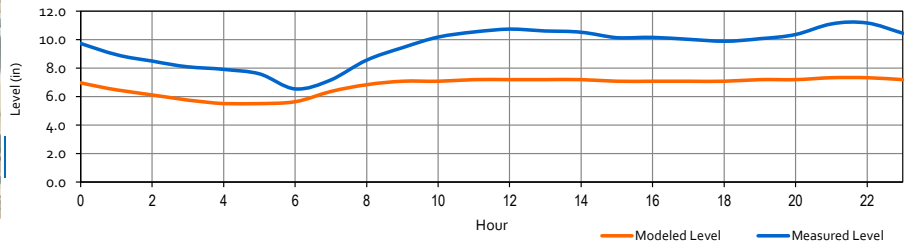
Flow Calibration



Velocity Calibration



Level Calibration

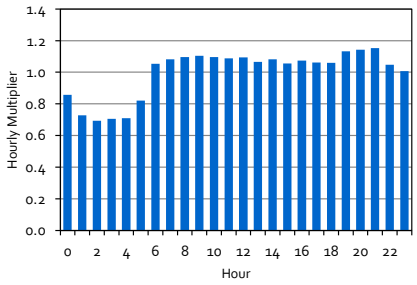


Model Calibration Summary

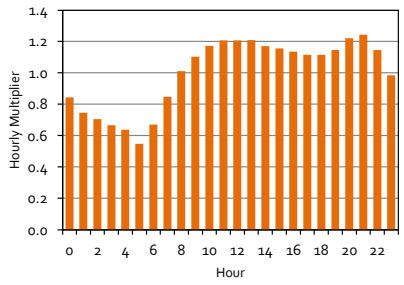
Day	Measured Data				Modeled Data				Percent Error[1]			
	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (%)	Peak Flow (%)	Avg. Level (%)	Avg. Vel. (%)
Thurs	1.63	1.86	10.0	2.0	1.61	1.89	6.79	3.39	-1%	2%	-32%	66%

Notes:
(1) Percent Error = (Modeled - Measured) / Measured x 100

Weekday Diurnal Pattern



Weekend Diurnal Pattern

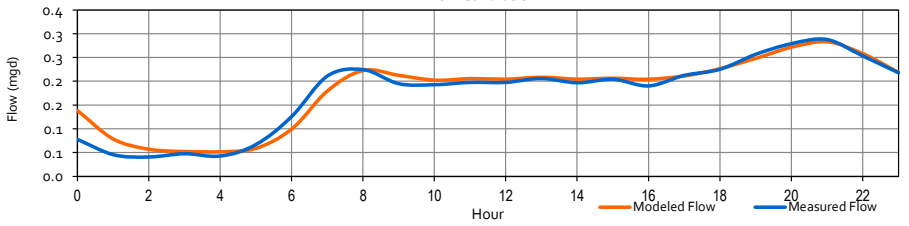


Flow Monitoring Site FM14, Dry Weather Flow Calibration

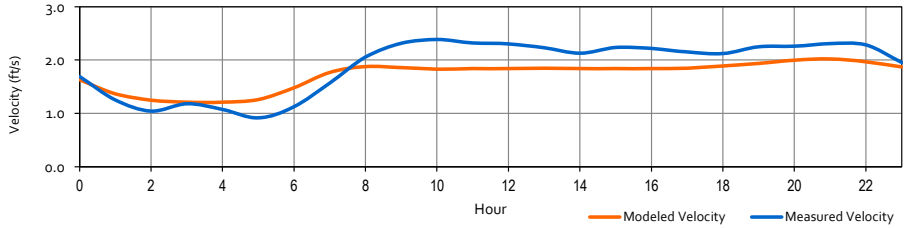
Pipeline Diameter: 8"
Manhole ID: MH83D-301
Model Pipe ID: 4231 (gpm)



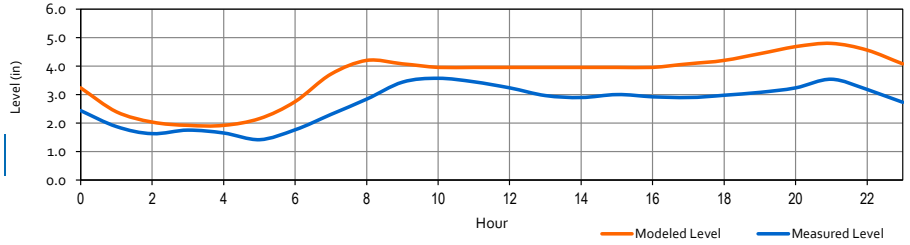
Flow Calibration



Velocity Calibration



Level Calibration

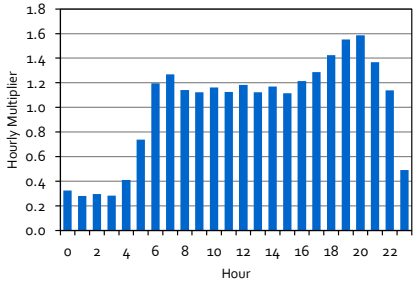


Model Calibration Summary

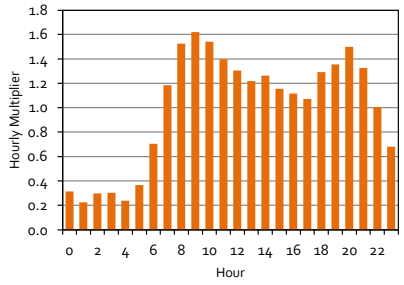
Day	Measured Data				Modeled Data				Percent Error[1]			
	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (mgd)	Peak Flow (mgd)	Avg. Level (in)	Avg. Vel. (ft/s)	Avg. Flow (%)	Peak Flow (%)	Avg. Level (%)	Avg. Vel. (%)
Thurs	0.18	0.29	2.7	1.9	0.18	0.28	3.63	1.72	3%	-2%	34%	-9%

Notes:
(1) Percent Error = (Modeled - Measured) / Measured x 100

Weekday Diurnal Pattern



Weekend Diurnal Pattern

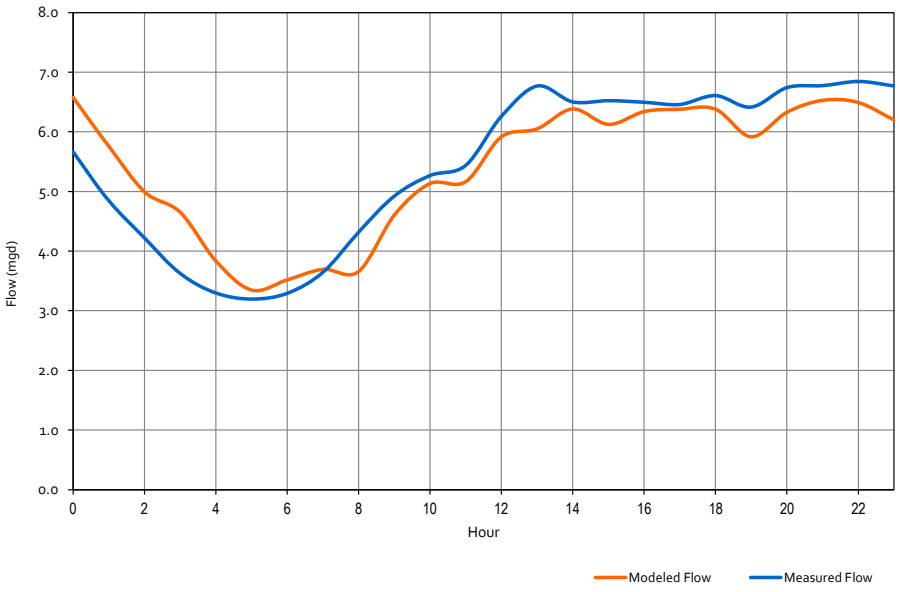


Flow Monitoring Site 15 and 16 DryWeatherFlowCalibration

Pipeline Diameter: 24-inch and 36-inch
Manhole ID: MH96B-107 and MH96B-303
Model Pipe ID: 3225 and 1975



Flow Calibration

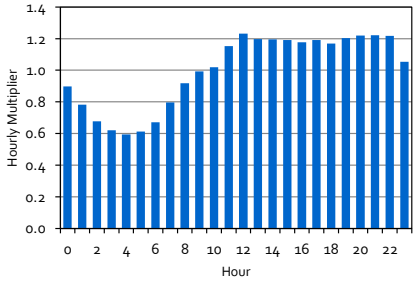


Model Calibration Summary

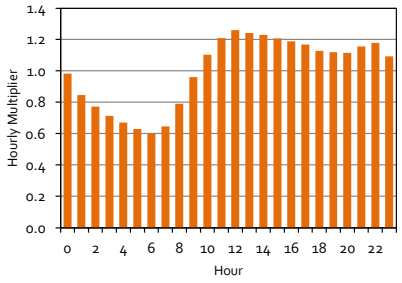
Day	Measured Data Avg. Flow (mgd)	Measured Data Peak Flow (mgd)	Measured Data Avg. Level (in)	Measured Data Avg. Vel. (ft/s)	Modeled Data Avg. Flow (mgd)	Modeled Data Peak Flow (mgd)	Modeled Data Avg. Level (in)	Modeled Data Avg. Vel. (ft/s)	Percent Error[1] Avg. Flow (%)	Percent Error[1] Peak Flow (%)	Percent Error[1] Avg. Level (%)	Percent Error[1] Avg. Vel. (%)
Thurs	5.46	6.85	-	-	5.42	6.58	-	-	-1%	-4%	-	-

Notes:
(1) Percent Error = (Modeled - Measured) / Measured x 100

Weekday Diurnal Pattern



Weekend Diurnal Pattern



APPENDIX 7A

WATER UNIT COSTS

8-inch Water Main

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

	Material	Diameter (inch)	Length (mile)	Default Excavation Depth	Is the pipe crossing a freeway?
	DIP	8	1	4	No

	DESCRIPTION	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
PIPING						
	8" Push-on Joint Ductile Iron Pipe	1	LF	$ 57	$ 57	
	8" Adder For Restrained Joints	0.25	LF	$ 27	$ 7	
	Total Piping (per LF)					**$ 64**
EARTHWORK						
	Hard Digging	0.30	CY	$ 51	$ 15	
	Trenching: Box Shoring	1	Day	$ 5	$ 5	
	Imported Pipe Bed & Zone/Confined Structure Backfill, Class B Material	0.20	CY	$ 116	$ 23	
	Imported Trench Backfill/Unconfined Struct. BF, Class B Material	0.08	CY	$ 105	$ 8	
	Controlled Density Fill (CDF)	0.01	CY	$ 138	$ 1	
	20 CY Dump Truck, 20 Miles/Round Trip	2.33	CY	$ 11	$ 26	
	Site Specific Requirements (% of Total Earthwork)	10%	LS		$ 8	
	Total Earthwork (per LF)					**$ 86**
PAVING						
	Asphalt Pavement Cutting	6	IN (Depth)	1.97	11.79	
	Remove 6" Asphalt Pavement	4.0	FT (Trench Width)	0.12	0.47	
	6" AC Paving ON 8" ABC	4.0	FT (Trench Width)	11.07	44.30	
	Micro Seal	50	FT (Street Width)	0.67	33.33	
	Total Paving (per LF)					**$ 90**
FITTINGS, VALVES AND MANHOLES		No. per mile				
	Fittings	4	EA	0.09	0.37	
	Isolation Valve (Gate Valve for dia < 36", Butterfly Valve for dia >= 36")	7	EA	0.56	3.92	
	Air release Valve Assembly	4	EA	0.06	0.24	
	Blow off Valve Assembly	2	EA	0.06	0.12	
	Air release and blow off and valve manholes	13	EA	0.86	11.15	
	Total fittings, valves and manholes (per LF)					**$ 16**
HYDRANT		No. per mile				
	Fire Hydrant	1	CY	0.03	0.03	
	Total Hydrant (per LF)					**$ 0.03**
	TOTAL DIRECT COST (per LF)					**$ 260**
	Contractor Overhead	10%				**$ 30**
	Construction Profit	6%				**$ 20**
	Sales Tax (Applied to 65% of Total Direct Cost)	8%				**$ 20**
	General Conditions	10%				**$ 30**
	Traffic Control Multiplier	20%				**$ 50**
	TOTAL CONSTRUCTION COSTS (per LF)					**$ 410**
	TOTAL CONSTRUCTION COSTS FOR 1 mile(s)					**$ 2,160,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

10-inch Water Main

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

	Material	Diameter (inch)	Length (mile)	Default Excavation Depth	Is the pipe crossing a freeway?
	DIP	10	1	6	No

	DESCRIPTION	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
PIPING						
	10" Push-on Joint Ductile Iron Pipe	1	LF	$ 55	$ 55	
	10" Adder For Restrained Joints	0.25	LF	$ 27	$ 7	
	Total Piping (per LF)					**$ 62**
EARTHWORK						
	Hard Digging	0.48	CY	$ 51	$ 25	
	Trenching: Box Shoring	1	Day	$ 5	$ 5	
	Imported Pipe Bed & Zone/Confined Structure Backfill, Class B Material	0.23	CY	$ 116	$ 27	
	Imported Trench Backfill/Unconfined Struct. BF, Class B Material	0.20	CY	$ 105	$ 22	
	Controlled Density Fill (CDF)	0.02	CY	$ 138	$ 3	
	20 CY Dump Truck, 20 Miles/Round Trip	2.77	CY	$ 11	$ 30	
	Site Specific Requirements (% of Total Earthwork)	10%	LS		$ 11	
	Total Earthwork (per LF)					**$ 123**
PAVING						
	Asphalt Pavement Cutting	6	IN (Depth)	1.97	11.79	
	Remove 6" Asphalt Pavement	4.2	FT (Trench Width)	0.12	0.48	
	6" AC Paving ON 8" ABC	4.2	FT (Trench Width)	11.07	46.14	
	Micro Seal	50	FT (Street Width)	0.67	33.33	
	Total Paving (per LF)					**$ 92**
FITTINGS, VALVES AND MANHOLES		No. per mile				
	Fittings	4	EA	0.12	0.46	
	Isolation Valve (Gate Valve for dia < 36", Butterfly Valve for dia >= 36")	7	EA	0.71	4.98	
	Air release Valve Assembly	4	EA	0.06	0.24	
	Blow off Valve Assembly	2	EA	0.06	0.12	
	Air release and blow off and valve manholes	13	EA	0.86	11.15	
	Total fittings, valves and manholes (per LF)					**$ 17**
HYDRANT		No. per mile				
	Fire Hydrant	1	CY	0.03	0.03	
	Total Hydrant (per LF)					**$ 0.03**
	TOTAL DIRECT COST (per LF)					**$ 290**
	Contractor Overhead	10%				**$ 30**
	Construction Profit	6%				**$ 20**
	Sales Tax (Applied to 65% of Total Direct Cost)	8%				**$ 20**
	General Conditions	10%				**$ 30**
	Traffic Control Multiplier	20%				**$ 60**
	TOTAL CONSTRUCTION COSTS (per LF)					**$ 450**
	TOTAL CONSTRUCTION COSTS FOR 1 mile(s)					**$ 2,380,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

12-inch Water Main

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

	Material	Diameter (inch)	Length (mile)	Default Excavation Depth	Is the pipe crossing a freeway?
	DIP	12	1	6	No

	DESCRIPTION	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
PIPING						
	12" Push-on Joint Ductile Iron Pipe	1	LF	$ 71	$ 71	
	12" Adder For Restrained Joints	0.25	LF	$ 36	$ 9	
	Total Piping (per LF)					**$ 80**
EARTHWORK						
	Hard Digging	0.52	CY	$ 51	$ 26	
	Trenching: Box Shoring	1	Day	$ 5	$ 5	
	Imported Pipe Bed & Zone/Confined Structure Backfill, Class B Material	0.27	CY	$ 116	$ 32	
	Imported Trench Backfill/Unconfined Struct. BF, Class B Material	0.19	CY	$ 105	$ 20	
	Controlled Density Fill (CDF)	0.02	CY	$ 138	$ 3	
	20 CY Dump Truck, 20 Miles/Round Trip	2.87	CY	$ 11	$ 31	
	Site Specific Requirements (% of Total Earthwork)	10%	LS		$ 12	
	Total Earthwork (per LF)					**$ 130**
PAVING						
	Asphalt Pavement Cutting	6	IN (Depth)	1.97	11.79	
	Remove 6" Asphalt Pavement	4.3	FT (Trench Width)	0.12	0.50	
	6" AC Paving ON 8" ABC	4.3	FT (Trench Width)	11.07	47.99	
	Micro Seal	50	FT (Street Width)	0.67	33.33	
	Total Paving (per LF)					**$ 94**
FITTINGS, VALVES AND MANHOLES		No. per mile				
	Fittings	4	EA	0.15	0.61	
	Isolation Valve (Gate Valve for dia < 36", Butterfly Valve for dia >= 36")	7	EA	0.90	6.29	
	Air release Valve Assembly	4	EA	0.06	0.24	
	Blow off Valve Assembly	2	EA	0.06	0.12	
	Air release and blow off and valve manholes	13	EA	0.86	11.15	
	Total fittings, valves and manholes (per LF)					**$ 18**
HYDRANT		No. per mile				
	Fire Hydrant	1	CY	0.03	0.03	
	Total Hydrant (per LF)					**$ 0.03**
	TOTAL DIRECT COST (per LF)					**$ 320**
	Contractor Overhead	10%				**$ 30**
	Construction Profit	6%				**$ 20**
	Sales Tax (Applied to 65% of Total Direct Cost)	8%				**$ 30**
	General Conditions	10%				**$ 30**
	Traffic Control Multiplier	20%				**$ 60**
	TOTAL CONSTRUCTION COSTS (per LF)					**$ 490**
	TOTAL CONSTRUCTION COSTS FOR 1 mile(s)					**$ 2,590,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

16-inch Water Main

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

	Material	Diameter (inch)	Length (mile)	Default Excavation Depth	Is the pipe crossing a freeway?
	DIP	16	1	8	No

	DESCRIPTION	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
PIPING						
	16" Push-on Joint Ductile Iron Pipe	1	LF	$ 115	$ 115	
	16" Adder For Restrained Joints	0.25	LF	$ 63	$ 16	
	Total Piping (per LF)					**$ 131**
EARTHWORK						
	Hard Digging	0.79	CY	$ 51	$ 40	
	Trenching: Box Shoring	1	Day	$ 5	$ 5	
	Imported Pipe Bed & Zone/Confined Structure Backfill, Class B Material	0.36	CY	$ 116	$ 42	
	Imported Trench Backfill/Unconfined Struct. BF, Class B Material	0.34	CY	$ 105	$ 36	
	Controlled Density Fill (CDF)	0.04	CY	$ 138	$ 5	
	20 CY Dump Truck, 20 Miles/Round Trip	3.51	CY	$ 11	$ 38	
	Site Specific Requirements (% of Total Earthwork)	10%	LS		$ 17	
	Total Earthwork (per LF)					**$ 183**
PAVING						
	Asphalt Pavement Cutting	6	IN (Depth)	1.97	11.79	
	Remove 6" Asphalt Pavement	4.7	FT (Trench Width)	0.12	0.54	
	6" AC Paving ON 8" ABC	4.7	FT (Trench Width)	11.07	51.68	
	Micro Seal	50	FT (Street Width)	0.67	33.33	
	Total Paving (per LF)					**$ 97**
FITTINGS, VALVES AND MANHOLES		No. per mile				
	Fittings	4	EA	0.34	1.35	
	Isolation Valve (Gate Valve for dia < 36", Butterfly Valve for dia >= 36")	2	EA	3.03	6.06	
	Air release Valve Assembly	4	EA	0.06	0.24	
	Blow off Valve Assembly	2	EA	0.06	0.12	
	Air release and blow off and valve manholes	8	EA	0.86	6.86	
	Total fittings, valves and manholes (per LF)					**$ 15**
HYDRANT		No. per mile				
	Fire Hydrant	1	CY	0.03	0.03	
	Total Hydrant (per LF)					**$ 0.03**
	TOTAL DIRECT COST (per LF)					**$ 430**
	Contractor Overhead	10%				**$ 40**
	Construction Profit	6%				**$ 30**
	Sales Tax (Applied to 65% of Total Direct Cost)	8%				**$ 40**
	General Conditions	10%				**$ 40**
	Traffic Control Multiplier	20%				**$ 90**
	TOTAL CONSTRUCTION COSTS (per LF)					**$ 670**
	TOTAL CONSTRUCTION COSTS FOR 1 mile(s)					**$ 3,540,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

20-inch Water Main

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

	Material	Diameter (inch)	Length (mile)	Default Excavation Depth	Is the pipe crossing a freeway?
	DIP	20	1	8	No

	DESCRIPTION	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
PIPING						
	20" Push-on Joint Ductile Iron Pipe	1	LF	$ 159	$ 159	
	20" Adder For Restrained Joints	0.25	LF	$ 89	$ 22	
	Total Piping (per LF)					**$ 181**
EARTHWORK						
	Hard Digging	0.96	CY	$ 51	$ 49	
	Trenching: Box Shoring	1	Day	$ 5	$ 5	
	Imported Pipe Bed & Zone/Confined Structure Backfill, Class B Material	0.50	CY	$ 116	$ 58	
	Imported Trench Backfill/Unconfined Struct. BF, Class B Material	0.34	CY	$ 105	$ 36	
	Controlled Density Fill (CDF)	0.04	CY	$ 138	$ 5	
	20 CY Dump Truck, 20 Miles/Round Trip	3.95	CY	$ 11	$ 43	
	Site Specific Requirements (% of Total Earthwork)	10%	LS		$ 20	
	Total Earthwork (per LF)					**$ 217**
PAVING						
	Asphalt Pavement Cutting	6	IN (Depth)	1.97	11.79	
	Remove 6" Asphalt Pavement	5.3	FT (Trench Width)	0.12	0.61	
	6" AC Paving ON 8" ABC	5.3	FT (Trench Width)	11.07	58.14	
	Micro Seal	50	FT (Street Width)	0.67	33.33	
	Total Paving (per LF)					**$ 104**
FITTINGS, VALVES AND MANHOLES		No. per mile				
	Fittings	4	EA	0.57	2.28	
	Isolation Valve (Gate Valve for dia < 36", Butterfly Valve for dia >= 36")	2	EA	6.09	12.19	
	Air release Valve Assembly	4	EA	0.06	0.24	
	Blow off Valve Assembly	2	EA	0.06	0.12	
	Air release and blow off and valve manholes	8	EA	0.86	6.86	
	Total fittings, valves and manholes (per LF)					**$ 22**
	TOTAL DIRECT COST (per LF)					**$ 520**
	Contractor Overhead	10%				**$ 50**
	Construction Profit	6%				**$ 30**
	Sales Tax (Applied to 65% of Total Direct Cost)	8%				**$ 40**
	General Conditions	10%				**$ 50**
	Traffic Control Multiplier	20%				**$ 100**
	TOTAL CONSTRUCTION COSTS (per LF)					**$ 790**
	TOTAL CONSTRUCTION COSTS FOR 1 mile(s)					**$ 4,170,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

24-inch Water Main

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

Material	Diameter (inch)	Length (mile)	Default Excavation Depth	Is the pipe crossing a freeway?
DIP	24	1	8	No

	DESCRIPTION	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
PIPING						
	24" Push-on Joint Ductile Iron Pipe	1	LF	$ 215	$ 215	
	24" Adder For Restrained Joints	0.25	LF	$ 123	$ 31	
	Total Piping (per LF)					**$ 246**
EARTHWORK						
	Hard Digging	1.06	CY	$ 51	$ 54	
	Trenching: Box Shoring	1	Day	$ 5	$ 5	
	Imported Pipe Bed & Zone/Confined Structure Backfill, Class B Material	0.61	CY	$ 116	$ 71	
	Imported Trench Backfill/Unconfined Struct. BF, Class B Material	0.30	CY	$ 105	$ 31	
	Controlled Density Fill (CDF)	0.03	CY	$ 138	$ 5	
	20 CY Dump Truck, 20 Miles/Round Trip	4.19	CY	$ 11	$ 46	
	Site Specific Requirements (% of Total Earthwork)	10%	LS		$ 21	
	Total Earthwork (per LF)					**$ 233**
PAVING						
	Asphalt Pavement Cutting	6	IN (Depth)	1.97	11.79	
	Remove 6" Asphalt Pavement	5.6	FT (Trench Width)	0.12	0.65	
	6" AC Paving ON 8" ABC	5.6	FT (Trench Width)	11.07	61.83	
	Micro Seal	50	FT (Street Width)	0.67	33.33	
	Total Paving (per LF)					**$ 108**
FITTINGS, VALVES AND MANHOLES		No. per mile				
	Fittings	4	EA	0.84	3.36	
	Isolation Valve (Gate Valve for dia < 36", Butterfly Valve for dia >= 36")	2	EA	9.60	19.20	
	Air release Valve Assembly	4	EA	0.16	0.62	
	Blow off Valve Assembly	2	EA	0.16	0.31	
	Air release and blow off and valve manholes	8	EA	0.86	6.86	
	Total fittings, valves and manholes (per LF)					**$ 30**
	TOTAL DIRECT COST (per LF)					**$ 620**
	Contractor Overhead	10%				**$ 60**
	Construction Profit	6%				**$ 40**
	Sales Tax (Applied to 65% of Total Direct Cost)	8%				**$ 50**
	General Conditions	10%				**$ 60**
	Traffic Control Multiplier	20%				**$ 120**
	TOTAL CONSTRUCTION COSTS (per LF)					**$ 950**
	TOTAL CONSTRUCTION COSTS FOR 1 mile(s)					**$ 5,020,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

2 MG Storage Tank

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

Capacity (MG)
2

	DESCRIPTION	SIZE	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
Site Work	Cat Trackhoe, 1CY Bucket, Class B (Medium Digging), 0-16' D		1600	CY	$ 19	$ 29,921	
	8' H Double Swing Gate, Chain Link, 20' Opening	20'	1	EA	$ 44,171	$ 44,171	
	Standard Concrete Block, 8"	10'	5000	SF	$ 25	$ 124,412	
	2" ABC Finish		27	CY	$ 133	$ 3,591	
	6" AC Paving ON 6" ABC		162	SY	$ 98	$ 15,944	
	Bollard		12	EA	$ 1,560	$ 18,720	
	Overflow Retention Basin		1	LS	$ 181,200	$ 181,200	
	Large Site Grading		1	LS	$ 75,000	$ 75,000	
	Total Site Work						**$ 492,959**
Structural Work	Reinforced concrete foundation		56	CY	$ 500	$ 28,000	
	Total Structural Work						**$ 28,000**
Steel Tank	Welded steel tank	2 MGD	1	EA	$ 2,144,645	$ 2,144,645	
	2 MGD Active Mixing System with Recirculation Pump	2 MGD	1	EA	$ 490,750	$ 490,750	
	Total Steel Tank						**$ 2,635,395**
Piping	Inlet piping	12"	110	LF	$ 540	$ 59,400	
	Outlet piping	12"	110	LF	$ 540	$ 59,400	
	Drain Piping	8"	100	LF	$ 122	$ 12,173	
	BFV Isolation valve	12"	2	EA	$ 3,900	$ 7,800	
	Check valve	12"	2	EA	$ 12,905	$ 25,810	
	Fitting	12"	6	EA	$ 804	$ 4,821	
	Total Piping						**$ 169,405**
Painting & Coating	Epoxy Coating		50000	SF	$ 9	$ 450,000	
	Total Painting & Coating						**$ 450,000**
	TOTAL						**$ 3,776,000**
Electrical & Instrumentation	Electrical and Instrumentation		10%			$ 377,600	
	Total Electrical & Instrumentation						**$ 378,000**
Disinfection	Disinfection system		5%			$ 188,800	
	Total Disinfection						**$ 189,000**
	Total cost excluding landscaping and security						**$ 4,793,000**
	Landscaping cost		1%			$ 48,000	**$ 48,000**
	Security costs for smaller capacity systems		1	EA	$ 56,000	$ 56,000	**$ 56,000**
	TOTAL DIRECT COST						**$ 4,897,000**
	Contractor Overhead		10%				**$ 490,000**
	Construction Profit		6%				**$ 294,000**
	Sales Tax (Applied to 65% of Total Direct Cost)		8%				**$ 411,000**
	General Conditions		10%				**$ 490,000**
	TOTAL CONSTRUCTION COSTS						**$ 6,582,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

3 MG Storage Tank

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

Capacity (MG)
3

	DESCRIPTION	SIZE	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
Site Work	Cat Trackhoe, 1CY Bucket, Class B (Medium Digging), 0-16' D		1600	CY	$ 19	$ 29,921	
	8' H Double Swing Gate, Chain Link, 20' Opening		1	EA	$ 44,171	$ 44,171	
	Standard Concrete Block, 8"	10'	5000	SF	$ 25	$ 124,412	
	2" ABC Finish		27	CY	$ 133	$ 3,591	
	6" AC Paving ON 6" ABC		18	SY	$ 98	$ 1,772	
	Bollard		12	EA	$ 1,560	$ 18,720	
	Overflow Retention Basin		1	LS	$ 181,200	$ 181,200	
	Large Site Grading		1	LS	$ 75,000	$ 75,000	
	Total Site Work						**$ 478,786**
Structural Work	Reinforced concrete foundation		88	CY	$ 500	$ 44,000	
	Total Structural Work						**$ 44,000**
Steel Tank	Welded steel tank	3 MGD	1	EA	$ 2,882,280	$ 2,882,280	
	3 MGD Active Mixing System with Recirculation Pump	3 MGD	1	EA	$ 490,750	$ 490,750	
	Total Steel Tank						**$ 3,373,030**
Piping	Inlet piping	16"	130	LF	$ 720	$ 93,600	
	Outlet piping	16"	130	LF	$ 720	$ 93,600	
	Drain Piping	8"	100	LF	$ 122	$ 12,173	
	BFV Isolation valve	16"	2	EA	$ 5,634	$ 11,268	
	Check valve	16"	2	EA	$ 33,147	$ 66,294	
	Fitting	16"	6	EA	$ 1,782	$ 10,690	
	Total Piping						**$ 287,625**
Painting & Coating	Epoxy Coating		66000	SF	$ 9	$ 594,000	
	Total Painting & Coating						**$ 594,000**
	TOTAL						**$ 4,777,000**
Electrical & Instrumentation	Electrical and Instrumentation		10%			$ 477,700	
	Total Electrical & Instrumentation						**$ 478,000**
Disinfection	Disinfection system		5%			$ 238,850	
	Total Disinfection						**$ 239,000**
	Total cost excluding landscaping and security						**$ 6,088,000**
	Landscaping cost		1%			$ 61,000	**$ 61,000**
	Security costs for smaller capacity systems		1	EA	$ 56,000	$ 56,000	**$ 56,000**
	TOTAL DIRECT COST						**$ 6,205,000**
	Contractor Overhead		10%				**$ 621,000**
	Construction Profit		6%				**$ 372,000**
	Sales Tax (Applied to 65% of Total Direct Cost)		8%				**$ 521,000**
	General Conditions		10%				**$ 621,000**
	TOTAL CONSTRUCTION COSTS						**$ 8,340,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

5 mgd Booster Pump Station

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

Site Capacity (MGD)	Number of Pump Trains
5	4

	DESCRIPTION	SIZE	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
Site Work	Cat Trackhoe, 1CY Bucket, Class B (Medium Digging), 0-16' D		175	CY	$ 19	$ 3,273	
	8' H Double Swing Gate, Chain Link, 20' Opening	20'	1	EA	$ 44,171	$ 44,171	
	Standard concrete block wall 8"	8'	2880	SF	$ 25	$ 71,661	
	2" ABC Finish		900	CY	$ 133	$ 119,700	
	6" AC Paving ON 6" ABC		162	SY	$ 98	$ 15,944	
	Bollard		18	EA	$ 1,560	$ 28,080	
	Medium Site Grading		1	LS	$ 38,880	$ 38,880	
	Total Site Work						**$ 321,709**
Structural Work	Precast concrete chlorine equipment building	10'x12'	1	LS	$ 121,100	$ 121,100	
	8" Chlorine building pad	10'x12'x8"	3	CY	$ 500	$ 1,500	
	12" Hydropneumatic tank pad	10'x20'x12"	30	CY	$ 500	$ 14,815	
	12" Pump and discharge piping pad	10'x25'x12"	10	CY	$ 500	$ 5,000	
	18" Generator pad	20'x20'x18"	17	CY	$ 500	$ 8,333	
	Precast concrete electrical equipment building	10'x30'	1	LS	$ 280,000	$ 280,000	
	12" Reinforced Concrete	3'x3'x12"	4	EA	$ 500	$ 2,000	
	Total Structural Work						**$ 432,748**
Suction Header	20" Cl 52 CLDI Mj Pipe - Plant	20"	25	LF	$ 3,003	$ 75,080	
	20" CLDI Flg Straight Tee In Place - Plant	20"	1	EA	$ 12,747	$ 12,747	
	Total Suction Header						**$ 87,827**
Pump Train	10" CLDI Flg Straight Tee In Place - Plant	10"	12	EA	$ 5,830	$ 69,964	
	10" Resilient Wedge Gate Valve	10"	4	EA	$ 3,760	$ 15,038	
	12"- 200 PSI Cl FXF Swing Check Valve	10"	4	EA	$ 9,229	$ 36,916	
	10" AWWA Class 150B Flanged Butterfly Valve	10"	4	EA	$ 3,026	$ 12,106	
	30" Pipe Support	30"	12	EA	$ 894	$ 10,733	
	40 HP Vertical Turbine Pump	1200 gpm	4	EA	$ 232,320	$ 929,280	
	10" Cl 52 CLDI Mj Pipe - Plant	10"	40	LF	$ 1,502	$ 60,073	
	1" 300 PSI Air/Vac Valve W/Shutoff	1"	8	EA	$ 1,028	$ 8,223	
	10" Fca Above Ground	10"	8	EA	$ 2,112	$ 16,894	
	Pressure/Vacuum Measurement Gauges		8	EA	$ 1,867	$ 14,940	
	5' C. I. Valve Box For 3"-20" Valves	5'	4	EA	$ 2,450	$ 9,801	
	Total Pump Train						**$ 1,183,967**
Discharge Header	20" Cl 52 CLDI Mj Pipe - Plant	20"	25	LF	$ 3,003	$ 75,080	
	20" CLDI Flg Straight Tee In Place - Plant	20"	1	EA	$ 12,747	$ 12,747	
	30" Pipe Support	30"	4	EA	$ 894	$ 3,578	
	Total Discharge Header						**$ 91,404**
Pressure Relief	10" Cl 52 CLDI Mj Pipe - Plant	10"	10	LF	$ 1,502	$ 15,018	
	10" 90° CLDI Mj Bend - Plant	10"	4	EA	$ 696	$ 2,783	
	10" AWWA Class 150B Flanged Butterfly Valve	10"	2	EA	$ 3,026	$ 6,053	
	High pressure relief valve	10"	1	EA	$ 25,536	$ 25,536	
	1" 300 PSI Air/Vac Valve W/Shutoff	1"	1	EA	$ 1,028	$ 1,028	
	5,000 gallon hydropneumatic tank w/ air comp & controls		1	EA	$ 247,500	$ 247,500	
	10,000 gallon hydropneumatic tank w/ air comp & controls		1	EA	$ 360,000	$ 360,000	
	Total Pressure Relief						**$ 657,918**
	TOTAL						**$ 2,776,000**
Electrical & Instrumentation	Electrical and Instrumentation		40%			$ 1,110,400	
	Total Electrical & Instrumentation						**$ 1,110,000**
Disinfection	Chlorine Disinfection		10%			$ 277,600	
	Total Disinfection						**$ 278,000**
Painting & Coatings	Painting & coating		10%			$ 277,600	
	Total Painting & Coating						**$ 278,000**
	Total cost excluding landscaping and security						**$ 4,442,000**
	Landscaping cost		1%			$ 44,000	**$ 44,000**
	Security costs for smaller capacity systems		1	EA	$ 56,000	$ 56,000	**$ 56,000**
	TOTAL DIRECT COST						**$ 4,542,000**
	SRP Design Fee				$ 200,000		**$ 200,000**
	Contractor Overhead		10%				**$ 454,000**
	Construction Profit		6%				**$ 273,000**
	Sales Tax (Applied to 65% of Total Direct Cost)		8%				**$ 382,000**
	General Conditions		10%				**$ 454,000**
	TOTAL CONSTRUCTION COSTS						**$ 6,305,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

10 mgd Booster Pump Station

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

Site Capacity (MGD)	Number of Pump Trains
10	4

	DESCRIPTION	SIZE	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
Site Work	Cat Trackhoe, 1CY Bucket, Class B (Medium Digging), 0-16' D		280	CY	$ 19	$ 5,236	
	8' H Double Swing Gate, Chain Link, 20' Opening	20'	1	EA	$ 44,171	$ 44,171	
	Standard concrete block wall 8"	8'	2880	SF	$ 25	$ 71,661	
	2" ABC Finish		900	CY	$ 133	$ 119,700	
	6" AC Paving ON 6" ABC		162	SY	$ 98	$ 15,944	
	Bollard		18	EA	$ 1,560	$ 28,080	
	Medium Site Grading		1	LS	$ 38,880	$ 38,880	
	Total Site Work						**$ 323,672**
Structural Work	Precast concrete chlorine equipment building	10'x12'	1	LS	$ 121,100	$ 121,100	
	8" Chlorine building pad	10'x12'x8"	3	CY	$ 500	$ 1,500	
	12" Hydropneumatic tank pad	10'x20'x12"	30	CY	$ 500	$ 14,815	
	12" Pump and discharge piping pad	10'x25'x12"	10	CY	$ 500	$ 5,000	
	18" Generator pad	20'x20'x18"	17	CY	$ 500	$ 8,333	
	Precast concrete electrical equipment building	10'x30'	1	LS	$ 280,000	$ 280,000	
	12" Reinforced Concrete	4'x4'x12"	4	EA	$ 500	$ 2,000	
	Total Structural Work						**$ 432,748**
Suction Header	30" Cl 52 CLDI Mj Pipeh - Plant	30"	25	LF	$ 4,504	$ 112,602	
	30" CLDI Flg Straight Tee In Place - Plant	30"	1	EA	$ 26,153	$ 26,153	
	Total Suction Header						**$ 138,755**
Pump Train	10" CLDI Flg Straight Tee In Place - Plant	10"	12	EA	$ 5,830	$ 69,964	
	10" Resilient Wedge Gate Valve	10"	4	EA	$ 3,760	$ 15,038	
	12"- 200 PSI Cl FXF Swing Check Valve	10"	4	EA	$ 9,229	$ 36,916	
	10" AWWA Class 150B Flanged Butterfly Valve	10"	4	EA	$ 3,026	$ 12,106	
	30" Pipe Support	30"	12	EA	$ 894	$ 10,733	
	75 HP Vertical Turbine Pump	2400 gpm	4	EA	$ 343,510	$ 1,374,041	
	10" Cl 52 CLDI Mj Pipe - Plant	10"	40	LF	$ 1,502	$ 60,073	
	1" 300 PSI Air/Vac Valve W/Shutoff	1"	8	EA	$ 1,028	$ 8,223	
	10" Fca Above Ground	10"	8	EA	$ 2,112	$ 16,894	
	Pressure/Vacuum Measurement Gauges		8	EA	$ 1,867	$ 14,940	
	5' C. I. Valve Box For 3"-20" Valves	5'	4	EA	$ 2,450	$ 9,801	
	Total Pump Train						**$ 1,628,728**
Discharge Header	30" Cl 52 CLDI Mj Pipeh - Plant	30"	25	LF	$ 4,504	$ 112,602	
	30" CLDI Flg Straight Tee In Place - Plant	30"	1	EA	$ 26,153	$ 26,153	
	30" Pipe Support	30"	4	EA	$ 894	$ 3,578	
	Total Discharge Header						**$ 142,333**
Pressure Relief	14" Cl 52 CLDI Mj Pipe - Plant	14"	10	LF	$ 2,102	$ 21,019	
	14" 90° CLDI Mj Bend - Plant	14"	4	EA	$ 1,755	$ 7,018	
	14" AWWA Class 150B Flanged Butterfly Valve	14"	2	EA	$ 4,537	$ 9,074	
	High pressure relief valve	14"	1	EA	$ 76,811	$ 76,811	
	1" 300 PSI Air/Vac Valve W/Shutoff	1"	1	EA	$ 1,028	$ 1,028	
	5,000 gallon hydropneumatic tank w/ air comp & controls		1	EA	$ 247,500	$ 247,500	
	10,000 gallon hydropneumatic tank w/ air comp & controls		1	EA	$ 360,000	$ 360,000	
	Total Pressure Relief						**$ 722,451**
	TOTAL						**$ 3,389,000**
Electrical & Instrumentation	Electrical and Instrumentation		40%			$ 1,355,600	
	Total Electrical & Instrumentation						**$ 1,356,000**
Disinfection	Chlorine Disinfection		10%			$ 338,900	
	Total Disinfection						**$ 339,000**
Painting & Coatings	Painting & coating		10%			$ 338,900	
	Total Painting & Coating						**$ 339,000**
	Total cost excluding landscaping and security						**$ 5,423,000**
	Landscaping cost		1%			$ 54,000	**$ 54,000**
	Security costs for smaller capacity systems		1	EA	$ 56,000	$ 56,000	**$ 56,000**
	TOTAL DIRECT COST						**$ 5,533,000**
	SRP Design Fee				$ 200,000		**$ 200,000**
	Contractor Overhead		10%				**$ 553,000**
	Construction Profit		6%				**$ 332,000**
	Sales Tax (Applied to 65% of Total Direct Cost)		8%				**$ 465,000**
	General Conditions		10%				**$ 553,000**
	TOTAL CONSTRUCTION COSTS						**$ 7,636,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

15 mgd Booster Pump Station

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

Site Capacity (MGD)	Number of Pump Trains
15	5

	DESCRIPTION	SIZE	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
Site Work	Cat Trackhoe, 1CY Bucket, Class B (Medium Digging), 0-16' D		335	CY	$ 19	$ 6,265	
	8' H Double Swing Gate, Chain Link, 20' Opening	20'	1	EA	$ 44,171	$ 44,171	
	Standard concrete block wall 8"	8'	2880	SF	$ 25	$ 71,661	
	2" ABC Finish		900	CY	$ 133	$ 119,700	
	6" AC Paving ON 6" ABC		162	SY	$ 98	$ 15,944	
	Bollard		20	EA	$ 1,560	$ 31,200	
	Medium Site Grading		1	LS	$ 38,880	$ 38,880	
	Total Site Work						**$ 327,821**
Structural Work	Precast concrete chlorine equipment building	10'x12'	1	LS	$ 121,100	$ 121,100	
	8" Chlorine building pad	10'x12'x8"	3	CY	$ 500	$ 1,500	
	12" Hydropneumatic tank pad	10'x20'x12"	30	CY	$ 500	$ 14,815	
	12" Pump and discharge piping pad	10'x30'x12"	12	CY	$ 500	$ 6,000	
	18" Generator pad	20'x20'x18"	17	CY	$ 500	$ 8,333	
	Precast concrete electrical equipment building	10'x30'	1	LS	$ 280,000	$ 280,000	
	12" Reinforced Concrete	4'x4'x12"	8	EA	$ 500	$ 4,000	
	Total Structural Work						**$ 435,748**
Suction Header	36" Cl 52 CLDI Mj Pipe - Plant	36"	30	LF	$ 5,400	$ 162,004	
	36" CLDI Flg Straight Tee In Place	36"	1	EA	$ 39,934	$ 39,934	
	Total Suction Header						**$ 201,938**
Pump Train	10" CLDI Flg Straight Tee In Place - Plant	10"	15	EA	$ 5,830	$ 87,455	
	10" Resilient Wedge Gate Valve	10"	5	EA	$ 3,760	$ 18,798	
	12"- 200 PSI Cl FXF Swing Check Valve	10"	5	EA	$ 9,229	$ 46,144	
	10" AWWA Class 150B Flanged Butterfly Valve	10"	5	EA	$ 3,026	$ 15,132	
	30" Pipe Support	30"	15	EA	$ 894	$ 13,416	
	125 HP Vertical Turbine Pump	3127 gpm	5	EA	$ 393,136	$ 1,965,678	
	10" Cl 52 CLDI Mj Pipe - Plant	10"	50	LF	$ 1,502	$ 75,092	
	1" 300 PSI Air/Vac Valve W/Shutoff	1"	10	EA	$ 1,028	$ 10,278	
	10" Fca Above Ground	10"	10	EA	$ 2,112	$ 21,117	
	Pressure/Vacuum Measurement Gauges		10	EA	$ 1,867	$ 18,675	
	5' C. I. Valve Box For 3"-20" Valves	5'	5	EA	$ 2,450	$ 12,251	
	Total Pump Train						**$ 2,284,037**
Discharge Header	36" Cl 52 CLDI Mj Pipe - Plant	36"	30	LF	$ 5,400	$ 162,004	
	36" CLDI Flg Straight Tee In Place	36"	1	EA	$ 39,934	$ 39,934	
	Concrete Pipe Support		5	EA	$ 6,745	$ 33,725	
	Total Discharge Header						**$ 235,663**
Pressure Relief	16" Cl 52 CLDI Mj Pipe - Plant	16"	10	LF	$ 2,403	$ 24,030	
	16" 90° CLDI Mj Bend - Plant	16"	4	EA	$ 2,038	$ 8,153	
	16" AWWA Class 150B Flanged Butterfly Valve	16"	2	EA	$ 5,634	$ 11,268	
	High pressure relief valve	16"	1	EA	$ 78,650	$ 78,650	
	1" 300 PSI Air/Vac Valve W/Shutoff	1"	1	EA	$ 1,028	$ 1,028	
	10,000 gallon hydropneumatic tank w/ air comp & controls		1	EA	$ 360,000	$ 360,000	
	20,000 gallon hydropneumatic tank w/ air comp & controls		1	EA	$ 525,000	$ 525,000	
	Total Pressure Relief						**$ 1,008,128**
	TOTAL						**$ 4,493,000**
Electrical & Instrumentation	Electrical and Instrumentation		40%			$ 1,797,200	
	Total Electrical & Instrumentation						**$ 1,797,000**
Disinfection	Chlorine Disinfection		10%			$ 449,300	
	Total Disinfection						**$ 449,000**
Painting & Coatings	Painting & coating		10%			$ 449,300	
	Total Painting & Coating						**$ 449,000**
	Total cost excluding landscaping and security						**$ 7,188,000**
	Landscaping cost		1%			$ 72,000	**$ 72,000**
	Security costs for larger capacity systems		1	EA	$ 84,000	$ 84,000	**$ 84,000**
	TOTAL DIRECT COST						**$ 7,344,000**
	SRP Design Fee				$ 200,000		**$ 200,000**
	Contractor Overhead		10%				**$ 734,000**
	Construction Profit		6%				**$ 441,000**
	Sales Tax (Applied to 65% of Total Direct Cost)		8%				**$ 617,000**
	General Conditions		10%				**$ 734,000**
	TOTAL CONSTRUCTION COSTS						**$ 10,070,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

20 mgd Booster Pump Station

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

		Site Capacity (MGD)	Number of Pump Trains				
		20	5				
	DESCRIPTION	**SIZE**	**QUANTITY**	**UNIT**	**UNIT COST**	**SUBTOTAL**	**TOTAL**
Site Work	Cat Trackhoe, 1CY Bucket, Class B (Medium Digging), 0-16' D		740	CY	$ 19	$ 13,838	
	8' H Double Swing Gate, Chain Link, 20' Opening	20'	1	EA	$ 44,171	$ 44,171	
	Standard concrete block wall 8"	8'	2880	SF	$ 25	$ 71,661	
	2" ABC Finish		900	CY	$ 133	$ 119,700	
	6" AC Paving ON 6" ABC		162	SY	$ 98	$ 15,944	
	Bollard		20	EA	$ 1,560	$ 31,200	
	Medium Site Grading		1	LS	$ 38,880	$ 38,880	
	Total Site Work						**$ 335,395**
Structural Work	Precast concrete chlorine equipment building	10'x12'		LS	$ 121,100	$ -	
	8" Chlorine building pad	10'x12'x8"	3	CY	$ 500	$ 1,500	
	12" Hydropneumatic tank pad	10'x20'x12"	30	CY	$ 500	$ 14,815	
	12" Pump and discharge piping pad	10'x45'x12"	17	CY	$ 500	$ 8,500	
	18" Generator pad	20'x20'x18"	17	CY	$ 500	$ 8,333	
	Precast concrete electrical equipment building	10'x30'	1	LS	$ 280,000	$ 280,000	
	12" Reinforced Concrete	6'x6'x12"	20	EA	$ 500	$ 10,000	
	Total Structural Work						**$ 323,148**
Suction Header	42" Cl 52 CLDI Mj Pipe - Plant	42"	45	LF	$ 6,300	$ 283,507	
	42" CLDI Flg Straight Tee In Place	42"	1	EA	$ 61,898	$ 61,898	
	Total Suction Header						**$ 345,405**
Pump Train	16" CLDI Flg Straight Tee In Place - Plant	16"	15	EA	$ 17,397	$ 260,957	
	16" Resilient Wedge Gate Valve	16"	5	EA	$ 15,990	$ 79,950	
	20"-250 PSI Swing Check Valve	16"	5	EA	$ 44,439	$ 222,196	
	16" AWWA Class 150B Flanged Butterfly Valve	16"	5	EA	$ 5,634	$ 28,171	
	30" Pipe Support	30"	15	EA	$ 894	$ 13,416	
	150 HP Vertical Turbine Pump	4169 gpm	5	EA	$ 439,656	$ 2,198,279	
	16" Cl 52 CLDI Mj Pipe - Plant	16"	50	LF	$ 2,403	$ 120,148	
	1" 300 PSI Air/Vac Valve W/Shutoff	1"	10	EA	$ 1,028	$ 10,278	
	16" Fca Above Ground	16"	10	EA	$ 3,756	$ 37,562	
	Pressure/Vacuum Measurement Gauges		10	EA	$ 1,867	$ 18,675	
	5' C. I. Valve Box For 3"-20" Valves	5'	5	EA	$ 2,450	$ 12,251	
	Total Pump Train						**$ 3,001,884**
Discharge Header	42" Cl 52 CLDI Mj Pipe - Plant	42"	45	LF	$ 6,300	$ 283,507	
	42" CLDI Flg Straight Tee In Place	42"	1	EA	$ 61,898	$ 61,898	
	Concrete Pipe Support		5	EA	$ 6,745	$ 33,725	
	Total Discharge Header						**$ 379,130**
Pressure Relief	20" Cl 52 CLDI Mj Pipe - Plant	20"	10	LF	$ 3,003	$ 30,032	
	20" 90° CLDI Mj Bend - Plant	20"	4	EA	$ 3,458	$ 13,831	
	20" DIMJ AWWA Butterfly Valve, No Op	20"	2	EA	$ 13,930	$ 27,861	
	High pressure relief valve	20"	1	EA	$ 85,391	$ 85,391	
	1" 300 PSI Air/Vac Valve W/Shutoff	1"	1	EA	$ 1,028	$ 1,028	
	10,000 gallon hydropneumatic tank w/ air comp & controls		1	EA	$ 360,000	$ 360,000	
	20,000 gallon hydropneumatic tank w/ air comp & controls		1	EA	$ 525,000	$ 525,000	
	Total Pressure Relief						**$ 1,043,142**
	TOTAL						**$ 5,428,000**
Electrical & Instrumentation	Electrical and Instrumentation		40%			$ 2,171,200	
	Total Electrical & Instrumentation						**$ 2,171,000**
Disinfection	Chlorine Disinfection		10%			$ 542,800	
	Total Disinfection						**$ 543,000**
Painting & Coatings	Painting & coating		10%			$ 542,800	
	Total Painting & Coating						**$ 543,000**
	Total cost excluding landscaping and security						**$ 8,685,000**
	Landscaping cost		1%			$ 87,000	**$ 87,000**
	Security costs for larger capacity systems		1	EA	$ 84,000	$ 84,000	**$ 84,000**
	TOTAL DIRECT COST						**$ 8,856,000**
	SRP Design Fee				$ 200,000		**$ 200,000**
	Contractor Overhead		10%				**$ 886,000**
	Construction Profit		6%				**$ 531,000**
	Sales Tax (Applied to 65% of Total Direct Cost)		8%				**$ 744,000**
	General Conditions		10%				**$ 886,000**
	TOTAL CONSTRUCTION COSTS						**$ 12,103,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

1 mgd Well

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

	Well Capacity (MGD)	Well Depth (ft)	Well Diameter (in)
3 MGD Well	1	1200	**14**

	DESCRIPTION	SIZE	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
Site Work	8' H Double Swing Gate, Chain Link, 20' Opening	20'	1	EA	$ 44,171	$ 44,171	
	Standard Concrete Block, 8"	8'	1600	SF	$ 25	$ 39,812	
	2" ABC Finish		20	CY	$ 133	$ 2,660	
	6" AC Paving ON 6" ABC		162	CY	$ 98	$ 15,944	
	Bollard		10	EA	$ 1,560	$ 15,600	
	Well drilling & steel casing		1	LS	$ 1,000,000	$ 1,000,000	
	Small Site Grading		1	LS	$ 12,000	$ 12,000	
	Total Site Work						**$ 1,130,187**
Structural Work	12" Sloped Slab On Grade (To 30%)	10'x30'x12"	12	CY	$ 500	$ 6,000	
	Precast concrete building (HVAC, electrical and lighting)	10'x30'	1	LS	$ 280,000	$ 280,000	
	12" Reinforced Concrete	10'x20'x12"	7	CY	$ 500	$ 3,704	
	Total Structural Work						**$ 289,704**
Well Pump	Well pump	694 gpm	1	LS	$ 250,000	$ 250,000	
	Total Well Pump						**$ 250,000**
Discharge Header	Fitting	8"	3	EA	$ 1,749	$ 5,247	
	8" Flex Cplg, Above Ground	8"	3	EA	$ 889	$ 2,668	
	8" CLDI Flg Straight Tee In Place	8"	30	LF	$ 1,749	$ 52,467	
	2" 300 PSI Air/Vac Valve W/Shutoff	2"	1	EA	$ 1,647	$ 1,647	
	2" 150 PSI Air Release Valve Stainless Steel 317	2"	1	EA	$ 819	$ 819	
	10"- 200 PSI CI FXF Swing Check Valve	8"	1	EA	$ 4,665	$ 4,665	
	30" Pipe Support	30"	3	EA	$ 894	$ 2,683	
	8" AWWA Class 150B Flanged Butterfly Valve	8"	1	EA	$ 2,980	$ 2,980	
	SCH40 PVC Drain Pipe	2.5"	20	LF	$ 192	$ 3,831	
	Process Pressure Gauge		1	EA	$ 240	$ 240	
	Total Discharge Header						**$ 77,247**
Pressure Relief	10,000 gal discharge surge tank	10,000 gal	1	EA	$ 360,000	$ 360,000	
	Total Pressure Relief						**$ 360,000**
	TOTAL						**$ 2,107,000**
Electrical & Instrumentation	Electrical and Instrumentation		35%			$ 737,450	
	Total Electrical & Instrumentation						**$ 737,000**
Disinfection	Chlorination system		10%			$ 210,700	
	Total Disinfection						**$ 211,000**
	Total cost excluding landscaping and security						**$ 3,055,000**
	Landscaping cost		1%			$ 31,000	**$ 31,000**
	Security costs for smaller capacity systems		1	EA	$ 56,000	$ 56,000	**$ 56,000**
	TOTAL DIRECT COST						**$ 3,142,000**
	SRP Design Fee				$ 200,000		**$ 200,000**
	Contractor Overhead		10%				**$ 314,000**
	Construction Profit		6%				**$ 189,000**
	Sales Tax (Applied to 65% of Total Direct Cost)		8%				**$ 264,000**
	General Conditions		10%				**$ 314,000**
	TOTAL CONSTRUCTION COSTS						**$ 4,423,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

1.5 mgd Well

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

	Well Capacity (MGD)	Well Depth (ft)	Well Diameter (in)
3 MGD Well	1.5	1200	**16**

	DESCRIPTION	SIZE	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
Site Work	8' H Double Swing Gate, Chain Link, 20' Opening	20'	1	EA	$ 44,171	$ 44,171	
	Standard Concrete Block, 8"	8'	1600	SF	$ 25	$ 39,812	
	2" ABC Finish		20	CY	$ 133	$ 2,660	
	6" AC Paving ON 6" ABC		162	CY	$ 98	$ 15,944	
	Bollard		10	EA	$ 1,560	$ 15,600	
	Well drilling & steel casing		1	LS	$ 1,000,000	$ 1,000,000	
	Small Site Grading		1	LS	$ 12,000	$ 12,000	
	Total Site Work						**$ 1,130,187**
Structural Work	12" Sloped Slab On Grade (To 30%)	10'x30'x12"	12	CY	$ 500	$ 6,000	
	Precast concrete building (HVAC, electrical and lighting)	10'x30'	1	LS	$ 280,000	$ 280,000	
	12" Reinforced Concrete	10'x20'x12"	7	CY	$ 500	$ 3,704	
	Total Structural Work						**$ 289,704**
Well Pump	Well pump	1050 gpm	1	LS	$ 255,747	$ 255,747	
	Total Well Pump						**$ 255,747**
Discharge Header	Fitting	10"	3	EA	$ 4,523	$ 13,570	
	10" Flex Cplg, Above Ground	10"	3	EA	$ 1,156	$ 3,468	
	10" CLDI Flg Straight Tee In Place	10"	30	LF	$ 4,523	$ 135,705	
	2" 300 PSI Air/Vac Valve W/Shutoff	2"	1	EA	$ 1,647	$ 1,647	
	2" 150 PSI Air Release Valve Stainless Steel 317	2"	1	EA	$ 819	$ 819	
	12"- 200 PSI CI FXF Swing Check Valve	10"	1	EA	$ 9,229	$ 9,229	
	30" Pipe Support	30"	3	EA	$ 894	$ 2,683	
	10" AWWA Class 150B Flanged Butterfly Valve	10"	1	EA	$ 3,026	$ 3,026	
	SCH40 PVC Drain Pipe	2.5"	20	LF	$ 192	$ 3,831	
	Process Pressure Gauge		1	EA	$ 240	$ 240	
	Total Discharge Header						**$ 174,218**
Pressure Relief	10,000 gal discharge surge tank	10,000 gal	1	EA	$ 360,000	$ 360,000	
	Total Pressure Relief						**$ 360,000**
	TOTAL						**$ 2,210,000**
Electrical & Instrumentation	Electrical and Instrumentation		35%			$ 773,500	
	Total Electrical & Instrumentation						**$ 774,000**
Disinfection	Chlorination system		10%			$ 221,000	
	Total Disinfection						**$ 221,000**
	Total cost excluding landscaping and security						**$ 3,205,000**
	Landscaping cost		1%			$ 32,000	**$ 32,000**
	Security costs for smaller capacity systems		1	EA	$ 56,000	$ 56,000	**$ 56,000**
	TOTAL DIRECT COST						**$ 3,293,000**
	SRP Design Fee				$ 200,000		**$ 200,000**
	Contractor Overhead		10%				**$ 329,000**
	Construction Profit		6%				**$ 198,000**
	Sales Tax (Applied to 65% of Total Direct Cost)		8%				**$ 277,000**
	General Conditions		10%				**$ 329,000**
	TOTAL CONSTRUCTION COSTS						**$ 4,626,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

3 mgd Well

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

	Well Capacity (MGD)	Well Depth (ft)	Well Diameter (in)
3 MGD Well	3	1200	**18**

	DESCRIPTION	SIZE	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
Site Work	8' H Double Swing Gate, Chain Link, 20' Opening	20'	1	EA	$ 44,171	$ 44,171	
	Standard Concrete Block, 8"	8'	1600	SF	$ 25	$ 39,812	
	2" ABC Finish		20	CY	$ 133	$ 2,660	
	6" AC Paving ON 6" ABC		162	CY	$ 98	$ 15,944	
	Bollard		10	EA	$ 1,560	$ 15,600	
	Well drilling & steel casing		1	LS	$ 1,000,000	$ 1,000,000	
	Small Site Grading		1	LS	$ 12,000	$ 12,000	
	Total Site Work						**$ 1,130,187**
Structural Work	12" Sloped Slab On Grade (To 30%)	10'x30'x12"	12	CY	$ 500	$ 6,000	
	Precast concrete building (HVAC, electrical and lighting)	10'x30'	1	LS	$ 280,000	$ 280,000	
	12" Reinforced Concrete	10'x20'x12"	7	CY	$ 500	$ 3,704	
	Total Structural Work						**$ 289,704**
Well Pump	Well pump	2082 gpm	1	LS	$ 327,427	$ 327,427	
	Total Well Pump						**$ 327,427**
Discharge Header	Fitting	14"	3	EA	$ 8,342	$ 25,025	
	14" Flex Cplg, Above Ground	14"	3	EA	$ 2,256	$ 6,767	
	14" CLDI Flg Straight Tee In Place	14"	30	LF	$ 8,342	$ 250,245	
	3" 300 PSI Air/Vac Valve W/Shutoff	3"	1	EA	$ 3,373	$ 3,373	
	3" 150 PSI Air Release Valve Stainless Steel 318	3"	1	EA	$ 1,744	$ 1,744	
	16"- 125# Di FXF Swing Check Valve	14"	1	EA	$ 33,147	$ 33,147	
	30" Pipe Support	30"	3	EA	$ 894	$ 2,683	
	14" AWWA Class 150B Flanged Butterfly Valve	14"	1	EA	$ 4,537	$ 4,537	
	SCH40 PVC Drain Pipe	2.5"	20	LF	$ 192	$ 3,831	
	Process Pressure Gauge		1	EA	$ 240	$ 240	
	Total Discharge Header						**$ 331,592**
Pressure Relief	10,000 gal discharge surge tank	10,000 gal	1	EA	$ 360,000	$ 360,000	
	Total Pressure Relief						**$ 360,000**
	TOTAL						**$ 2,439,000**
Electrical & Instrumentation	Electrical and Instrumentation		35%			$ 853,650	
	Total Electrical & Instrumentation						**$ 854,000**
Disinfection	Chlorination system		10%			$ 243,900	
	Total Disinfection						**$ 244,000**
	Total cost excluding landscaping and security						**$ 3,537,000**
	Landscaping cost		1%			$ 35,000	**$ 35,000**
	Security costs for smaller capacity systems		1	EA	$ 56,000	$ 56,000	**$ 56,000**
	TOTAL DIRECT COST						**$ 3,628,000**
	SRP Design Fee				$ 200,000		**$ 200,000**
	Contractor Overhead		10%				**$ 363,000**
	Construction Profit		6%				**$ 218,000**
	Sales Tax (Applied to 65% of Total Direct Cost)		8%				**$ 305,000**
	General Conditions		10%				**$ 363,000**
	TOTAL CONSTRUCTION COSTS						**$ 5,077,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

APPENDIX 7B

WASTEWATER UNIT COSTS

8-inch Gravity Main

Project: 2024 Integrated Water Master Plan

Client: City of Goodyear

		Material	Diameter	Length (mile)	Default Excavation Depth	
		VCP	8	1	6	
	DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT COST**	**SUBTOTAL**	**TOTAL**
PIPE	8" C-700 VCP In Open Trench	1	LF	$ 31	$ 31	
	Total Piping (per LF)					**$ 31**
EARTHWORK						
Excavation	Hard Digging	0.44	CY	$ 51	$ 23	
	Trenching: Box Shoring	1	Day	$ 5	$ 5	
&Backfill	Imported Pipe Bed & Zone/Confined Structure Backfill, Class B Material	0.20	CY	$ 116	$ 23	
	Native Trench Backfill/Unconfined Struct. BF, Class A Material	0.21	CY	$ 31	$ 7	
	Controlled Density Fill (CDF)	0.02	CY	$ 138	$ 3	
	20 CY Dump Truck, 20 Miles/Round Trip	5.02	CY	$ 11	$ 55	
	Site Specific Requirements	10%	LS		$ 12	
	Total Earthwork (per LF)					**$ 127**
Asphalt Paving	ASPHALT PAVEMENT CUTTING	4	IN (Depth)	$ 2	$ 8	
Demo &	REMOVE 4"-6" ASPHALT PAVEMENT	12	FT (Street Width)	$ 1	$ 1	
Replacement	4" AC PAVING ON 8" ABC	12	FT (Street Width)	$ 11	$ 15	
	Micro Seal	50	FT (Street Width)	$ 1	$ 33	
	Total Paving (per LF)					**$ 57**
		No. per 400 ft				
Manholes	Manhole	1	EA	$ 11	$ 11	
	Heavy Traffic Frame and Manhole Cover	1	EA	$ 2	$ 2	
	Concrete Manhole Invert, Single Channel	1	EA	$ 2	$ 2	
	Total Manholes (per LF)					**$ 20**
	TOTAL DIRECT COST (per LF)					**$ 230**
	Contractor Overhead	10%				**$ 20**
	Construction Profit	6%				**$ 10**
	Sales Tax (Applied to 65% of Total Direct Cost)	8%				**$ 20**
	General Conditions	10%				**$ 20**
	Traffic Control costs	10%				**$ 20**
	Cost for bypass lines	10%				**$ 20**
	TOTAL CONSTRUCTION COSTS (per LF)					**$ 340**
	TOTAL CONSTRUCTION COSTS (per mile)					**$ 1,800,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

12-inch Gravity Main

Project: 2024 Integrated Water Master Plan

Client: City of Goodyear

		Material	Diameter	Length (mile)	Default Excavation Depth	
		VCP	12	1	6	
	DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT COST**	**SUBTOTAL**	**TOTAL**
PIPE	12" C-700 VCP In Open Trench	1	LF	$ 43	$ 43	
	Total Piping (per LF)					**$ 43**
EARTHWORK						
Excavation	Hard Digging	0.52	CY	$ 51	$ 26	
	Trenching: Box Shoring	1	Day	$ 5	$ 5	
&Backfill	Imported Pipe Bed & Zone/Confined Structure Backfill, Class B Material	0.27	CY	$ 116	$ 32	
	Native Trench Backfill/Unconfined Struct. BF, Class A Material	0.19	CY	$ 31	$ 6	
	Controlled Density Fill (CDF)	0.02	CY	$ 138	$ 3	
	20 CY Dump Truck, 20 Miles/Round Trip	5.18	CY	$ 11	$ 57	
	Site Specific Requirements	10%	LS		$ 13	
	Total Earthwork (per LF)					**$ 142**
Asphalt Paving	ASPHALT PAVEMENT CUTTING	4	IN (Depth)	$ 2	$ 8	
Demo &	REMOVE 4"-6" ASPHALT PAVEMENT	12	FT (Street Width)	$ 1	$ 1	
Replacement	4" AC PAVING ON 8" ABC	12	FT (Street Width)	$ 11	$ 15	
	Micro Seal	50	FT (Street Width)	$ 1	$ 33	
	Total Paving (per LF)					**$ 57**
		No. per 400 ft				
Manholes	Manhole	1	EA	$ 11	$ 11	
	Heavy Traffic Frame and Manhole Cover	1	EA	$ 2	$ 2	
	Concrete Manhole Invert, Single Channel	1	EA	$ 2	$ 2	
	Total Manholes (per LF)					**$ 20**
	TOTAL DIRECT COST (per LF)					**$ 260**
	Contractor Overhead	10%				**$ 30**
	Construction Profit	6%				**$ 20**
	Sales Tax (Applied to 65% of Total Direct Cost)	8%				**$ 20**
	General Conditions	10%				**$ 30**
	Traffic Control costs	10%				**$ 30**
	Cost for bypass lines	10%				**$ 30**
	TOTAL CONSTRUCTION COSTS (per LF)					**$ 420**
	TOTAL CONSTRUCTION COSTS (per mile)					**$ 2,220,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

15-inch Gravity Main

Project: 2024 Integrated Water Master Plan

Client: City of Goodyear

		Material	Diameter	Length (mile)	Default Excavation Depth	
		VCP	15	1	8	
	DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT COST**	**SUBTOTAL**	**TOTAL**
PIPE	15" C-700 VCP In Open Trench	1	LF	$ 72	$ 72	
	Total Piping (per LF)					**$ 72**
EARTHWORK						
Excavation	Hard Digging	0.77	CY	$ 51	$ 39	
	Trenching: Box Shoring	1	Day	$ 5	$ 5	
&Backfill	Imported Pipe Bed & Zone/Confined Structure Backfill, Class B Material	0.34	CY	$ 116	$ 39	
	Native Trench Backfill/Unconfined Struct. BF, Class A Material	0.34	CY	$ 31	$ 11	
	Controlled Density Fill (CDF)	0.04	CY	$ 138	$ 5	
	20 CY Dump Truck, 20 Miles/Round Trip	5.74	CY	$ 11	$ 63	
	Site Specific Requirements	10%	LS		$ 16	
	Total Earthwork (per LF)					**$ 178**
Asphalt Paving	ASPHALT PAVEMENT CUTTING	4	IN (Depth)	$ 2	$ 8	
Demo &	REMOVE 4"-6" ASPHALT PAVEMENT	12	FT (Street Width)	$ 1	$ 1	
Replacement	4" AC PAVING ON 8" ABC	12	FT (Street Width)	$ 11	$ 15	
	Micro Seal	50	FT (Street Width)	$ 1	$ 33	
	Total Paving (per LF)					**$ 57**
		No. per 400 ft				
Manholes	Manhole	1	EA	$ 11	$ 11	
	Heavy Traffic Frame and Manhole Cover	1	EA	$ 2	$ 2	
	Concrete Manhole Invert, Single Channel	1	EA	$ 2	$ 2	
	Total Manholes (per LF)					**$ 20**
	TOTAL DIRECT COST (per LF)					**$ 330**
	Contractor Overhead	10%				**$ 30**
	Construction Profit	6%				**$ 20**
	Sales Tax (Applied to 65% of Total Direct Cost)	8%				**$ 30**
	General Conditions	10%				**$ 30**
	Traffic Control costs	10%				**$ 30**
	Cost for bypass lines	10%				**$ 30**
	TOTAL CONSTRUCTION COSTS (per LF)					**$ 500**
	TOTAL CONSTRUCTION COSTS (per mile)					**$ 2,640,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

16-inch Gravity Main

Project: 2024 Integrated Water Master Plan

Client: City of Goodyear

		Material	Diameter	Length (mile)	Default Excavation Depth	
		VCP	16	1	8	
	DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT COST**	**SUBTOTAL**	**TOTAL**
PIPE	16" C-700 VCP In Open Trench	1	LF	$ 104	$ 104	
	Total Piping (per LF)					**$ 104**
EARTHWORK						
Excavation	Hard Digging	0.79	CY	$ 51	$ 40	
	Trenching: Box Shoring	1	Day	$ 5	$ 5	
&Backfill	Imported Pipe Bed & Zone/Confined Structure Backfill, Class B Material	0.36	CY	$ 116	$ 42	
	Native Trench Backfill/Unconfined Struct. BF, Class A Material	0.34	CY	$ 31	$ 10	
	Controlled Density Fill (CDF)	0.04	CY	$ 138	$ 5	
	20 CY Dump Truck, 20 Miles/Round Trip	5.79	CY	$ 11	$ 64	
	Site Specific Requirements	10%	LS		$ 17	
	Total Earthwork (per LF)					**$ 183**
Asphalt Paving	ASPHALT PAVEMENT CUTTING	4	IN (Depth)	$ 2	$ 8	
Demo &	REMOVE 4"-6" ASPHALT PAVEMENT	12	FT (Street Width)	$ 1	$ 1	
Replacement	4" AC PAVING ON 8" ABC	12	FT (Street Width)	$ 11	$ 15	
	Micro Seal	50	FT (Street Width)	$ 1	$ 33	
	Total Paving (per LF)					**$ 57**
		No. per 400 ft				
Manholes	Manhole	1	EA	$ 11	$ 11	
	Heavy Traffic Frame and Manhole Cover	1	EA	$ 2	$ 2	
	Concrete Manhole Invert, Single Channel	1	EA	$ 2	$ 2	
	Total Manholes (per LF)					**$ 20**
	TOTAL DIRECT COST (per LF)					**$ 360**
	Contractor Overhead	10%				**$ 40**
	Construction Profit	6%				**$ 20**
	Sales Tax (Applied to 65% of Total Direct Cost)	8%				**$ 30**
	General Conditions	10%				**$ 40**
	Traffic Control costs	10%				**$ 40**
	Cost for bypass lines	10%				**$ 40**
	TOTAL CONSTRUCTION COSTS (per LF)					**$ 570**
	TOTAL CONSTRUCTION COSTS (per mile)					**$ 3,010,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

18-inch Gravity Main

Project: 2024 Integrated Water Master Plan

Client: City of Goodyear

		Material	Diameter	Length (mile)	Default Excavation Depth	
		VCP	18	1	8	
	DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT COST**	**SUBTOTAL**	**TOTAL**
PIPE	18" C-700 VCP In Open Trench	1	LF	$ 86	$ 86	
	Total Piping (per LF)					**$ 86**
EARTHWORK						
Excavation	Hard Digging	0.91	CY	$ 51	$ 47	
	Trenching: Box Shoring	1	Day	$ 5	$ 5	
&Backfill	Imported Pipe Bed & Zone/Confined Structure Backfill, Class B Material	0.45	CY	$ 116	$ 52	
	Native Trench Backfill/Unconfined Struct. BF, Class A Material	0.36	CY	$ 31	$ 11	
	Controlled Density Fill (CDF)	0.04	CY	$ 138	$ 6	
	20 CY Dump Truck, 20 Miles/Round Trip	6.07	CY	$ 11	$ 67	
	Site Specific Requirements	10%	LS		$ 19	
	Total Earthwork (per LF)					**$ 205**
Asphalt Paving	ASPHALT PAVEMENT CUTTING	4	IN (Depth)	$ 2	$ 8	
Demo &	REMOVE 4"-6" ASPHALT PAVEMENT	12	FT (Street Width)	$ 1	$ 1	
Replacement	4" AC PAVING ON 8" ABC	12	FT (Street Width)	$ 11	$ 15	
	Micro Seal	50	FT (Street Width)	$ 1	$ 33	
	Total Paving (per LF)					**$ 57**
		No. per 400 ft				
Manholes	Manhole	1	EA	$ 11	$ 11	
	Heavy Traffic Frame and Manhole Cover	1	EA	$ 2	$ 2	
	Concrete Manhole Invert, Single Channel	1	EA	$ 2	$ 2	
	Total Manholes (per LF)					**$ 20**
	TOTAL DIRECT COST (per LF)					**$ 370**
	Contractor Overhead	10%				**$ 40**
	Construction Profit	6%				**$ 20**
	Sales Tax (Applied to 65% of Total Direct Cost)	8%				**$ 30**
	General Conditions	10%				**$ 40**
	Traffic Control costs	10%				**$ 40**
	Cost for bypass lines	10%				**$ 40**
	TOTAL CONSTRUCTION COSTS (per LF)					**$ 580**
	TOTAL CONSTRUCTION COSTS (per mile)					**$ 3,060,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

20-inch Gravity Main

Project: 2024 Integrated Water Master Plan

Client: City of Goodyear

		Material	Diameter	Length (mile)	Default Excavation Depth	
		VCP	20	1	8	
	DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT COST**	**SUBTOTAL**	**TOTAL**
PIPE	20" C-700 VCP In Open Trench	1	LF	$ 130	$ 130	
	Total Piping (per LF)					**$ 130**
EARTHWORK						
Excavation	Hard Digging	0.96	CY	$ 51	$ 49	
	Trenching: Box Shoring	1	Day	$ 5	$ 5	
&Backfill	Imported Pipe Bed & Zone/Confined Structure Backfill, Class B Material	0.50	CY	$ 116	$ 58	
	Native Trench Backfill/Unconfined Struct. BF, Class A Material	0.34	CY	$ 31	$ 11	
	Controlled Density Fill (CDF)	0.04	CY	$ 138	$ 5	
	20 CY Dump Truck, 20 Miles/Round Trip	6.17	CY	$ 11	$ 68	
	Site Specific Requirements	10%	LS		$ 20	
	Total Earthwork (per LF)					**$ 215**
Asphalt Paving	ASPHALT PAVEMENT CUTTING	4	IN (Depth)	$ 2	$ 8	
Demo &	REMOVE 4"-6" ASPHALT PAVEMENT	12	FT (Street Width)	$ 1	$ 1	
Replacement	4" AC PAVING ON 8" ABC	12	FT (Street Width)	$ 11	$ 15	
	Micro Seal	50	FT (Street Width)	$ 1	$ 33	
	Total Paving (per LF)					**$ 57**
		No. per 400 ft				
Manholes	Manhole	1	EA	$ 11	$ 11	
	Heavy Traffic Frame and Manhole Cover	1	EA	$ 2	$ 2	
	Concrete Manhole Invert, Single Channel	1	EA	$ 2	$ 2	
	Total Manholes (per LF)					**$ 20**
	TOTAL DIRECT COST (per LF)					**$ 420**
	Contractor Overhead	10%				**$ 40**
	Construction Profit	6%				**$ 30**
	Sales Tax (Applied to 65% of Total Direct Cost)	8%				**$ 40**
	General Conditions	10%				**$ 40**
	Traffic Control costs	10%				**$ 40**
	Cost for bypass lines	10%				**$ 40**
	TOTAL CONSTRUCTION COSTS (per LF)					**$ 650**
	TOTAL CONSTRUCTION COSTS (per mile)					**$ 3,430,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

21-inch Gravity Main

Project: 2024 Integrated Water Master Plan

Client: City of Goodyear

		Material	Diameter	Length (mile)	Default Excavation Depth	
		VCP	21	1	8	
	DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT COST**	**SUBTOTAL**	**TOTAL**
PIPE	21" C-700 VCP In Open Trench	1	LF	$ 167	$ 167	
	Total Piping (per LF)					**$ 167**
EARTHWORK						
Excavation	Hard Digging	0.99	CY	$ 51	$ 50	
	Trenching: Box Shoring	1	Day	$ 5	$ 5	
&Backfill	Imported Pipe Bed & Zone/Confined Structure Backfill, Class B Material	0.53	CY	$ 116	$ 61	
	Native Trench Backfill/Unconfined Struct. BF, Class A Material	0.33	CY	$ 31	$ 10	
	Controlled Density Fill (CDF)	0.04	CY	$ 138	$ 5	
	20 CY Dump Truck, 20 Miles/Round Trip	6.22	CY	$ 11	$ 68	
	Site Specific Requirements	10%	LS		$ 20	
	Total Earthwork (per LF)					**$ 220**
Asphalt Paving	ASPHALT PAVEMENT CUTTING	4	IN (Depth)	$ 2	$ 8	
Demo &	REMOVE 4"-6" ASPHALT PAVEMENT	12	FT (Street Width)	$ 1	$ 1	
Replacement	4" AC PAVING ON 8" ABC	12	FT (Street Width)	$ 11	$ 15	
	Micro Seal	50	FT (Street Width)	$ 1	$ 33	
	Total Paving (per LF)					**$ 57**
		No. per 400 ft				
Manholes	Manhole	1	EA	$ 11	$ 11	
	Heavy Traffic Frame and Manhole Cover	1	EA	$ 2	$ 2	
	Concrete Manhole Invert, Single Channel	1	EA	$ 2	$ 2	
	Total Manholes (per LF)					**$ 20**
	TOTAL DIRECT COST (per LF)					**$ 460**
	Contractor Overhead	10%				**$ 50**
	Construction Profit	6%				**$ 30**
	Sales Tax (Applied to 65% of Total Direct Cost)	8%				**$ 40**
	General Conditions	10%				**$ 50**
	Traffic Control costs	10%				**$ 50**
	Cost for bypass lines	10%				**$ 50**
	TOTAL CONSTRUCTION COSTS (per LF)					**$ 730**
	TOTAL CONSTRUCTION COSTS (per mile)					**$ 3,850,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

24-inch Gravity Main

Project: 2024 Integrated Water Master Plan

Client: City of Goodyear

		Material	Diameter	Length (mile)	Default Excavation Depth	
		VCP	24	1	8	
	DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT COST**	**SUBTOTAL**	**TOTAL**
PIPE	24" C-700 VCP In Open Trench	1	LF	$ 179	$ 179	
	Total Piping (per LF)					**$ 179**
EARTHWORK						
Excavation	Hard Digging	1.06	CY	$ 51	$ 54	
	Trenching: Box Shoring	1	Day	$ 5	$ 5	
&Backfill	Imported Pipe Bed & Zone/Confined Structure Backfill, Class B Material	0.61	CY	$ 116	$ 71	
	Native Trench Backfill/Unconfined Struct. BF, Class A Material	0.30	CY	$ 31	$ 9	
	Controlled Density Fill (CDF)	0.03	CY	$ 138	$ 5	
	20 CY Dump Truck, 20 Miles/Round Trip	6.37	CY	$ 11	$ 70	
	Site Specific Requirements	10%	LS		$ 21	
	Total Earthwork (per LF)					**$ 235**
Asphalt Paving	ASPHALT PAVEMENT CUTTING	4	IN (Depth)	$ 2	$ 8	
Demo &	REMOVE 4"-6" ASPHALT PAVEMENT	12	FT (Street Width)	$ 1	$ 1	
Replacement	4" AC PAVING ON 8" ABC	12	FT (Street Width)	$ 11	$ 15	
	Micro Seal	50	FT (Street Width)	$ 1	$ 33	
	Total Paving (per LF)					**$ 57**
		No. per 400 ft				
Manholes	Manhole	1	EA	$ 11	$ 11	
	Heavy Traffic Frame and Manhole Cover	1	EA	$ 2	$ 2	
	Concrete Manhole Invert, Single Channel	1	EA	$ 2	$ 2	
	Total Manholes (per LF)					**$ 20**
	TOTAL DIRECT COST (per LF)					**$ 490**
	Contractor Overhead	10%				**$ 50**
	Construction Profit	6%				**$ 30**
	Sales Tax (Applied to 65% of Total Direct Cost)	8%				**$ 40**
	General Conditions	10%				**$ 50**
	Traffic Control costs	10%				**$ 50**
	Cost for bypass lines	10%				**$ 50**
	TOTAL CONSTRUCTION COSTS (per LF)					**$ 760**
	TOTAL CONSTRUCTION COSTS (per mile)					**$ 4,010,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

6-inch Force Main

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

		Material	Diameter	Length (mile)	Default Excavation Depth	User entered Excavation Depth
		DIP	6	1	6.00	6
	DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT COST**	**SUBTOTAL**	**TOTAL**
Pipe	6" Push-on Joint Ductile Iron Pipe	2	LF	$ 43	86.56	
	6" Adder For Restrained Joints	0.5	LF	$ 21	10.59	
						$ 97
EARTHWORK						
Excavation	Hard Digging	1.63	CY	$ 51	83.05	
	Trenching: Box Shoring	1	Day	$ 5	5.00	
& Backfill	Imported Pipe Bed & Zone/Confined Structure Backfill, Class B Material	0.66	CY	$ 116	76.96	
	Native Trench Backfill/Unconfined Struct. BF, Class A Material	0.86	CY	$ 31	26.36	
	Controlled Density Fill (CDF)	0.10	CY	$ 138	13.14	
	20 CY Dump Truck, 20 Miles/Round Trip	7.78	CY	$ 11	85.38	
	Site Specific Requirements	10%	LS		28.99	
	Total Earthwork (per LF)					**$ 319**
Asphalt Paving	ASPHALT PAVEMENT CUTTING	4.00	Depth (in)	1.97	7.86	
Demo &	REMOVE 4"-6" ASPHALT PAVEMENT	12.00	Street Width (FT)	0.12	1.40	
Replacement	4" AC paving on 8" ABC	12.00		11.07	132.90	
	Micro Seal	50.00	FT (Street Width)	0.67	33.33	
	Total Paving (per LF)					**$ 175**
		No. per mile				
Fittings	Fittings	2.00	EA	0.07	0.13	
& Valves	Air release valve Assembly	2.00	EA	0.06	0.12	
	Plug Valve	2.00	EA	0.71	1.43	
	Total Fittings & Valves (per LF)					**$ 2**
Manholes & Vaults	Air release manhole	2.00	EA	0.86	1.71	
	Plug valve vault	2.00	EA	0.86	1.71	
	Total fittings, valves and manholes (per LF)					**$ 3**
	TOTAL DIRECT COST (per LF)					**$ 600**
	Contractor Overhead	10%				**$ 60**
	Construction Profit	6%				**$ 40**
	Sales Tax (Applied to 65% of Total Direct Cost)	8%				**$ 50**
	General Conditions	10%				**$ 60**
	Traffic Control costs	10%				**$ 60**
	Cost for bypass lines	10%				**$ 60**
	TOTAL CONSTRUCTION COSTS (per LF)					**$ 930**
	TOTAL CONSTRUCTION COSTS (per mile)					**$ 4,910,400**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

8-inch Force Main

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

		Material	Diameter	Length (mile)	Default Excavation Depth	User entered Excavation Depth
		DIP	8	1	6.00	6
	DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT COST**	**SUBTOTAL**	**TOTAL**
Pipe	8" Push-on Joint Ductile Iron Pipe	2	LF	$ 57	113.98	
	8" Adder For Restrained Joints	0.5	LF	$ 27	13.69	
						$ 128
EARTHWORK						
Excavation	Hard Digging	1.70	CY	$ 51	86.83	
	Trenching: Box Shoring	1	Day	$ 5	5.00	
& Backfill	Imported Pipe Bed & Zone/Confined Structure Backfill, Class B Material	0.78	CY	$ 116	90.19	
	Native Trench Backfill/Unconfined Struct. BF, Class A Material	0.81	CY	$ 31	24.94	
	Controlled Density Fill (CDF)	0.09	CY	$ 138	12.43	
	20 CY Dump Truck, 20 Miles/Round Trip	7.95	CY	$ 11	87.25	
	Site Specific Requirements	10%	LS		30.66	
	Total Earthwork (per LF)					**$ 337**
Asphalt Paving	ASPHALT PAVEMENT CUTTING	4.00	Depth (in)	1.97	7.86	
Demo &	REMOVE 4"-6" ASPHALT PAVEMENT	12.00	Street Width (FT)	0.12	1.40	
Replacement	4" AC paving on 8" ABC	12.00		11.07	132.90	
	Micro Seal	50.00	FT (Street Width)	0.67	33.33	
	Total Paving (per LF)					**$ 175**
		No. per mile				
Fittings	Fittings	2.00	EA	0.09	0.18	
& Valves	Air release valve Assembly	2.00	EA	0.06	0.12	
	Plug Valve	2.00	EA	0.93	1.87	
	Total Fittings & Valves (per LF)					**$ 2**
Manholes & Vaults	Air release manhole	2.00	EA	0.86	1.71	
	Plug valve vault	2.00	EA	0.86	1.71	
	Total fittings, valves and manholes (per LF)					**$ 3**
	TOTAL DIRECT COST (per LF)					**$ 650**
	Contractor Overhead	10%				**$ 70**
	Construction Profit	6%				**$ 40**
	Sales Tax (Applied to 65% of Total Direct Cost)	8%				**$ 50**
	General Conditions	10%				**$ 70**
	Traffic Control costs	10%				**$ 70**
	Cost for bypass lines	10%				**$ 70**
	TOTAL CONSTRUCTION COSTS (per LF)					**$ 1,020**
	TOTAL CONSTRUCTION COSTS (per mile)					**$ 5,385,600**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

10-inch Force Main

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

		Material	Diameter	Length (mile)	Default Excavation Depth	User entered Excavation Depth
		DIP	10	1	6.00	6
	DESCRIPTION	QUANTITY	UNIT	UNIT COST	SUBTOTAL	TOTAL
Pipe	10" Push-on Joint Ductile Iron Pipe	2	LF	$ 55	110.55	
	10" Adder For Restrained Joints	0.5	LF	$ 27	13.68	
						$ 124
EARTHWORK						
Excavation	Hard Digging	1.78	CY	$ 51	90.60	
	Trenching: Box Shoring	1	Day	$ 5	5.00	
& Backfill	Imported Pipe Bed & Zone/Confined Structure Backfill, Class B Material	0.90	CY	$ 116	103.99	
	Native Trench Backfill/Unconfined Struct. BF, Class A Material	0.76	CY	$ 31	23.28	
	Controlled Density Fill (CDF)	0.08	CY	$ 138	11.60	
	20 CY Dump Truck, 20 Miles/Round Trip	8.12	CY	$ 11	89.09	
	Site Specific Requirements	10%	LS		32.36	
	Total Earthwork (per LF)					**$ 356**
Asphalt Paving	ASPHALT PAVEMENT CUTTING	4.00	Depth (in)	1.97	7.86	
Demo &	REMOVE 4"-6" ASPHALT PAVEMENT	12.00	Street Width (FT)	0.12	1.40	
Replacement	4" AC paving on 8" ABC	12.00		11.07	132.90	
	Micro Seal	50.00	FT (Street Width)	0.67	33.33	
	Total Paving (per LF)					**$ 175**
		No. per mile				
Fittings	Fittings	2.00	EA	0.12	0.23	
& Valves	Air release valve Assembly	2.00	EA	0.06	0.12	
	Plug Valve	2.00	EA	1.17	2.34	
	Total Fittings & Valves (per LF)					**$ 3**
Manholes & Vaults	Air release manhole	2.00	EA	0.86	1.71	
	Plug valve vault	2.00	EA	0.86	1.71	
	Total fittings, valves and manholes (per LF)					**$ 3**
	TOTAL DIRECT COST (per LF)					**$ 660**
	Contractor Overhead	10%				**$ 70**
	Construction Profit	6%				**$ 40**
	Sales Tax (Applied to 65% of Total Direct Cost)	8%				**$ 60**
	General Conditions	10%				**$ 70**
	Traffic Control costs	10%				**$ 70**
	Cost for bypass lines	10%				**$ 70**
	TOTAL CONSTRUCTION COSTS (per LF)					**$ 1,040**
	TOTAL CONSTRUCTION COSTS (per mile)					**$ 5,491,200**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

12-inch Force Main

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

		Material	Diameter	Length (mile)	Default Excavation Depth	User entered Excavation Depth
		DIP	12	1	6.00	6
	DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT COST**	**SUBTOTAL**	**TOTAL**
Pipe	12" Push-on Joint Ductile Iron Pipe	2	LF	$ 71	141.99	
	12" Adder For Restrained Joints	0.5	LF	$ 36	17.96	
						$ 160
EARTHWORK						
Excavation	Hard Digging	1.85	CY	$ 51	94.38	
	Trenching: Box Shoring	1	Day	$ 5	5.00	
& Backfill	Imported Pipe Bed & Zone/Confined Structure Backfill, Class B Material	1.02	CY	$ 116	118.38	
	Native Trench Backfill/Unconfined Struct. BF, Class A Material	0.69	CY	$ 31	21.40	
	Controlled Density Fill (CDF)	0.08	CY	$ 138	10.66	
	20 CY Dump Truck, 20 Miles/Round Trip	8.28	CY	$ 11	90.90	
	Site Specific Requirements	10%	LS		34.07	
	Total Earthwork (per LF)					**$ 375**
Asphalt Paving	ASPHALT PAVEMENT CUTTING	4.00	Depth (in)	1.97	7.86	
Demo &	REMOVE 4"-6" ASPHALT PAVEMENT	12.00	Street Width (FT)	0.12	1.40	
Replacement	4" AC paving on 8" ABC	12.00		11.07	132.90	
	Micro Seal	50.00	FT (Street Width)	0.67	33.33	
	Total Paving (per LF)					**$ 175**
		No. per mile				
Fittings	Fittings	2.00	EA	0.15	0.30	
& Valves	Air release valve Assembly	2.00	EA	0.06	0.12	
	Plug Valve	2.00	EA	1.44	2.89	
	Total Fittings & Valves (per LF)					**$ 3**
Manholes & Vaults	Air release manhole	2.00	EA	0.86	1.71	
	Plug valve vault	2.00	EA	0.86	1.71	
	Total fittings, valves and manholes (per LF)					**$ 3**
	TOTAL DIRECT COST (per LF)					**$ 720**
	Contractor Overhead	10%				**$ 70**
	Construction Profit	6%				**$ 40**
	Sales Tax (Applied to 65% of Total Direct Cost)	8%				**$ 60**
	General Conditions	10%				**$ 70**
	Traffic Control costs	10%				**$ 70**
	Cost for bypass lines	10%				**$ 70**
	TOTAL CONSTRUCTION COSTS (per LF)					**$ 1,100**
	TOTAL CONSTRUCTION COSTS (per mile)					**$ 5,808,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

1 mgd Lift Station

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

		Capacity (MGD)	Number of Pump Trains				
		1	2				
	DESCRIPTION	**SIZE**	**QUANTITY**	**UNIT**	**UNIT COST**	**SUBTOTAL**	**TOTAL**
Site Work	8' H Double Swing Gate, Chain Link, 20' Opening	20'	1	EA	$ 44,171	$ 44,171	
	Standard Concrete Block, 8"	8'	2400	SF	$ 25	$ 59,718	
	Site grading with 2" ABC finish		35	CY	$ 133	$ 4,655	
	Concrete work/drive pad	8'x10'x12"	3	CY	$ 500	$ 1,500	
	4" AC Paving ON 6" ABC	20'	85	SY	$ 98	$ 8,366	
	Wetwell excavation		150	CY	$ 19	$ 2,805	
	Bollard		10	EA	$ 1,560	$ 15,600	
	Medium Site Grading		1	LS	$ 38,880	$ 38,880	
	Total Site Work						**$ 175,694**
Structural Work	12" Reinforced Concrete	10'x20'x12"	8	CY	$ 500	$ 4,000	
	18" Structural Flat Mat On Grade	15'x20'x18"	12	CY	$ 500	$ 6,000	
	12" Reinforced Concrete	10'x30'x12"	12	CY	$ 500	$ 6,000	
	Concrete Wet Well	8'x10'x24'	1	LS	$ 67,500	$ 67,500	
	Electrical and chemical pre-cast building	10'x30'		LS	$ 280,000	$ -	
	Lift station access hatch	60"	1	EA	$ 4,550	$ 4,550	
	Stainless steel pump rails		12	EA	$ 2,162	$ 25,939	
	Pole & base		1	LS	$ 1,500	$ 1,500	
	Davitt pump removal crane		1	EA	$ 2,266	$ 2,266	
	Total Structural Work						**$ 117,755**
Pump Train	8" Push-On Joint Ductile Iron Pipe - Plant	8"	20	LF	$ 1,200	$ 24,000	
	8" Flex Cplg, Above Ground	8"	2	EA	$ 889	$ 1,779	
	10"- 200 PSI CI FXF Swing Check Valve	8"	2	EA	$ 4,665	$ 9,331	
	8" FXF Cast Iron Plug Valve W/Handwheel Op	8"	2	EA	$ 4,936	$ 9,872	
	30" Pipe Support	30"	6	EA	$ 894	$ 5,366	
	3" 300 PSI Combination Air Valve Stainless Steel	3"	2	EA	$ 3,280	$ 6,560	
	8" CLDI Flg Straight Tee In Place - Plant	8"	10	EA	$ 2,236	$ 22,357	
	Total Pump Train						**$ 79,265**
Mechanical	8" Push-On Joint Ductile Iron Pipe - Plant	8"	50	LF	$ 1,200	$ 60,000	
	75 HP submersible pumps (duty and standby)	695 gpm	2	EA	$ 65,340	$ 130,680	
	8" FXF Cast Iron Plug Valve W/Handwheel Op	8"	5	EA	$ 4,936	$ 24,681	
	30" Pipe Support	30"	7	EA	$ 894	$ 6,261	
	3" 300 PSI Combination Air Valve Stainless Steel	3"	1	EA	$ 3,280	$ 3,280	
	8" Adder For Restrained Joints	8"	50	LF	$ 27	$ 1,369	
	Total Mechanical						**$ 226,270**
Dual Force Main	8" Push-On Joint Ductile Iron Pipe - Plant	8"	30	LF	$ 1,200	$ 36,000	
	8" CLDI Flg Straight Tee In Place - Plant	8"	6	EA	$ 2,236	$ 13,414	
	Total Dual Force Main						**$ 49,414**
	TOTAL						**$ 648,000**
Electrical	Electrical & Instrumentation		40%			$ 259,200	
	Total Electrical & Instrumentation						**$ 259,000**
Odor Control	Odor control biofilters		10%			$ 64,800	
	Total Odor Control						**$ 65,000**
Painting & Coating	Painting & Coatings		10%			$ 64,800	
	Total Painting & Coating						**$ 65,000**
	Total cost excluding landscaping and security						**$ 1,037,000**
	Landscaping cost		1%			$ 10,000	**$ 10,000**
	Security costs for smaller capacity systems		1	EA	$ 56,000	$ 56,000	**$ 56,000**
	TOTAL DIRECT COST						**$ 1,103,000**
	Contractor Overhead		10%	%			**$ 110,000**
	Construction Profit		6%	%			**$ 66,000**
	Sales Tax (Applied to 65% of Total Direct Cost)		8%	%			**$ 93,000**
	General Conditions		10%	%			**$ 110,000**
	Bypass pump costs		10%	%			**$ 110,000**
	TOTAL CONSTRUCTION COSTS						**$ 1,592,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

3 mgd Lift Station

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

		Capacity (MGD)	Number of Pump Trains				
		3	3				
	DESCRIPTION	**SIZE**	**QUANTITY**	**UNIT**	**UNIT COST**	**SUBTOTAL**	**TOTAL**
Site Work	8' H Double Swing Gate, Chain Link, 20' Opening	20'	1	EA	$ 44,171	$ 44,171	
	Standard Concrete Block, 8"	8'	2400	SF	$ 25	$ 59,718	
	Site grading with 2" ABC finish		35	CY	$ 133	$ 4,655	
	Concrete work/drive pad	7'x12'x12"	4	CY	$ 500	$ 2,000	
	4" AC Paving ON 6" ABC	20'	85	SY	$ 98	$ 8,366	
	Wetwell excavation		190	CY	$ 19	$ 3,553	
	Bollard		10	EA	$ 1,560	$ 15,600	
	Medium Site Grading		1	LS	$ 38,880	$ 38,880	
	Total Site Work						**$ 176,942**
Structural Work	12" Reinforced Concrete	10'x20'x12"	8	CY	$ 500	$ 4,000	
	18" Structural Flat Mat On Grade	15'x20'x18"	12	CY	$ 500	$ 6,000	
	12" Reinforced Concrete	10'x30'x12"	12	CY	$ 500	$ 6,000	
	Concrete Wet Well	7'x12'x30'	1	LS	$ 90,000	$ 90,000	
	Electrical and chemical pre-cast building	10'x30'	1	LS	$ 280,000	$ 280,000	
	Lift station access hatch	60"	2	EA	$ 4,550	$ 9,100	
	Stainless steel pump rails		12	EA	$ 2,162	$ 25,939	
	Pole & base		1	LS	$ 1,500	$ 1,500	
	Davitt pump removal crane		1	EA	$ 2,266	$ 2,266	
	Total Structural Work						**$ 424,805**
Pump Train	8" Push-On Joint Ductile Iron Pipe - Plant	8"	30	LF	$ 1,200	$ 36,000	
	8" Flex Cplg, Above Ground	8"	3	EA	$ 889	$ 2,668	
	10"- 200 PSI CI FXF Swing Check Valve	8"	3	EA	$ 4,665	$ 13,996	
	8" FXF Cast Iron Plug Valve W/Handwheel Op	8"	3	EA	$ 4,936	$ 14,808	
	30" Pipe Support	30"	9	EA	$ 894	$ 8,050	
	3" 300 PSI Combination Air Valve Stainless Steel	3"	3	EA	$ 3,280	$ 9,840	
	8" CLDI Flg Straight Tee In Place - Plant	8"	15	EA	$ 2,236	$ 33,535	
	Total Pump Train						**$ 118,898**
Mechanical	16" Push-On Joint Ductile Iron Pipe - Plant	16"	50	LF	$ 2,400	$ 120,000	
	75 HP submersible pumps (duty and standby)	1041 gpm	3	EA	$ 110,550	$ 331,650	
	16" FXF Cast Iron Plug Valve W/Handwheel Op	16"	5	EA	$ 13,645	$ 68,226	
	30" Pipe Support	30"	7	EA	$ 894	$ 6,261	
	3" 300 PSI Combination Air Valve Stainless Steel	3"	1	EA	$ 3,280	$ 3,280	
	16" Adder For Restrained Joints	16"	50	LF	$ 63	$ 3,175	
	Total Mechanical						**$ 532,592**
Dual Force Main	16" Cl 52 CLDI Mj Pipe - Plant	16"	30	LF	$ 2,403	$ 72,089	
	16" CLDI Flg Straight Tee In Place - Plant	16"	6	EA	$ 12,578	$ 75,468	
	Total Dual Force Main						**$ 147,557**
	TOTAL						**$ 1,401,000**
Electrical	Electrical & Instrumentation		40%			$ 560,400	
	Total Electrical & Instrumentation						**$ 560,000**
Odor Control	Odor control biofilters		10%			$ 140,100	
	Total Odor Control						**$ 140,000**
Painting & Coating	Painting & Coatings		10%			$ 140,100	
	Total Painting & Coating						**$ 140,000**
	Total cost excluding landscaping and security						**$ 2,241,000**
	Landscaping cost		1%			$ 22,000	**$ 22,000**
	Security costs for smaller capacity systems		1	EA	$ 56,000	$ 56,000	**$ 56,000**
	TOTAL DIRECT COST						**$ 2,319,000**
	Contractor Overhead		10%	%			**$ 232,000**
	Construction Profit		6%	%			**$ 139,000**
	Sales Tax (Applied to 65% of Total Direct Cost)		8%	%			**$ 195,000**
	General Conditions		10%	%			**$ 232,000**
	Bypass pump costs		10%	%			**$ 232,000**
	TOTAL CONSTRUCTION COSTS						**$ 3,349,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

3.5 mgd Lift Station

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

		Capacity (MGD)	Number of Pump Trains				
		3.5	3				
	DESCRIPTION	**SIZE**	**QUANTITY**	**UNIT**	**UNIT COST**	**SUBTOTAL**	**TOTAL**
Site Work	8' H Double Swing Gate, Chain Link, 20' Opening	20'	1	EA	$ 44,171	$ 44,171	
	Standard Concrete Block, 8"	8'	2400	SF	$ 25	$ 59,718	
	Site grading with 2" ABC finish		35	CY	$ 133	$ 4,655	
	Concrete work/drive pad	8'x16'x12"	5	CY	$ 500	$ 2,500	
	4" AC Paving ON 6" ABC	20'	85	SY	$ 98	$ 8,366	
	Wetwell excavation		260	CY	$ 19	$ 4,862	
	Bollard		10	EA	$ 1,560	$ 15,600	
	Medium Site Grading		1	LS	$ 38,880	$ 38,880	
	Total Site Work						**$ 178,752**
Structural Work	12" Reinforced Concrete	10'x20'x12"	8	CY	$ 500	$ 4,000	
	18" Structural Flat Mat On Grade	15'x20'x18"	12	CY	$ 500	$ 6,000	
	12" Reinforced Concrete	10'x30'x12"	12	CY	$ 500	$ 6,000	
	Concrete Wet Well	8'x16'x27'	1	LS	$ 105,000	$ 105,000	
	Electrical and chemical pre-cast building	10'x30'	1	LS	$ 280,000	$ 280,000	
	Lift station access hatch	60"	2	EA	$ 4,550	$ 9,100	
	Stainless steel pump rails		12	EA	$ 2,162	$ 25,939	
	Pole & base		1	LS	$ 1,500	$ 1,500	
	Davitt pump removal crane		1	EA	$ 2,266	$ 2,266	
	Total Structural Work						**$ 439,805**
Pump Train	8" Push-On Joint Ductile Iron Pipe - Plant	8"	30	LF	$ 1,200	$ 36,000	
	8" Flex Cplg, Above Ground	8"	3	EA	$ 889	$ 2,668	
	10"- 200 PSI CI FXF Swing Check Valve	8"	3	EA	$ 4,665	$ 13,996	
	8" FXF Cast Iron Plug Valve W/Handwheel Op	8"	3	EA	$ 4,936	$ 14,808	
	30" Pipe Support	30"	9	EA	$ 894	$ 8,050	
	3" 300 PSI Combination Air Valve Stainless Steel	3"	3	EA	$ 3,280	$ 9,840	
	8" CLDI Flg Straight Tee In Place - Plant	8"	15	EA	$ 2,236	$ 33,535	
	Total Pump Train						**$ 118,898**
Mechanical	16" Push-On Joint Ductile Iron Pipe - Plant	16"	50	LF	$ 2,400	$ 120,000	
	75 HP submersible pumps (duty and standby)	1215 gpm	3	EA	$ 110,550	$ 331,650	
	16" FXF Cast Iron Plug Valve W/Handwheel Op	16"	5	EA	$ 13,645	$ 68,226	
	30" Pipe Support	30"	7	EA	$ 894	$ 6,261	
	3" 300 PSI Combination Air Valve Stainless Steel	3"	1	EA	$ 3,280	$ 3,280	
	16" Adder For Restrained Joints	16"	50	LF	$ 63	$ 3,175	
	Total Mechanical						**$ 532,592**
Dual Force Main	16" Cl 52 CLDI Mj Pipe - Plant	16"	30	LF	$ 2,403	$ 72,089	
	16" CLDI Flg Straight Tee In Place - Plant	16"	6	EA	$ 12,578	$ 75,468	
	Total Dual Force Main						**$ 147,557**
	TOTAL						**$ 1,418,000**
Electrical	Electrical & Instrumentation		40%			$ 567,200	
	Total Electrical & Instrumentation						**$ 567,000**
Odor Control	Odor control biofilters		10%			$ 141,800	
	Total Odor Control						**$ 142,000**
Painting & Coating	Painting & Coatings		10%			$ 141,800	
	Total Painting & Coating						**$ 142,000**
	Total cost excluding landscaping and security						**$ 2,269,000**
	Landscaping cost		1%			$ 23,000	**$ 23,000**
	Security costs for smaller capacity systems		1	EA	$ 56,000	$ 56,000	**$ 56,000**
	TOTAL DIRECT COST						**$ 2,348,000**
	Contractor Overhead		10%	%			**$ 235,000**
	Construction Profit		6%	%			**$ 141,000**
	Sales Tax (Applied to 65% of Total Direct Cost)		8%	%			**$ 197,000**
	General Conditions		10%	%			**$ 235,000**
	Bypass pump costs		10%	%			**$ 235,000**
	TOTAL CONSTRUCTION COSTS						**$ 3,391,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

5 mgd Lift Station

Project: 2024 Integrated Water Master Plan
Client: City of Goodyear

		Capacity (MGD)	Number of Pump Trains				
		5	3				
	DESCRIPTION	**SIZE**	**QUANTITY**	**UNIT**	**UNIT COST**	**SUBTOTAL**	**TOTAL**
Site Work	8' H Double Swing Gate, Chain Link, 20' Opening	20'	1	EA	$ 44,171	$ 44,171	
	Standard Concrete Block, 8"	8'	2400	SF	$ 25	$ 59,718	
	Site grading with 2" ABC finish		35	CY	$ 133	$ 4,655	
	Concrete work/drive pad	8'x16'x12"	5	CY	$ 500	$ 2,500	
	4" AC Paving ON 6" ABC	20'	85	SY	$ 98	$ 8,366	
	Wetwell excavation		260	CY	$ 19	$ 4,862	
	Bollard		10	EA	$ 1,560	$ 15,600	
	Medium Site Grading		1	LS	$ 38,880	$ 38,880	
	Total Site Work						**$ 178,752**
Structural Work	12" Reinforced Concrete	10'x20'x12"	8	CY	$ 500	$ 4,000	
	18" Structural Flat Mat On Grade	15'x20'x18"	12	CY	$ 500	$ 6,000	
	12" Reinforced Concrete	10'x30'x12"	12	CY	$ 500	$ 6,000	
	Concrete Wet Well	8'x16'x27'	1	LS	$ 105,000	$ 105,000	
	Electrical and chemical pre-cast building	10'x30'	1	LS	$ 280,000	$ 280,000	
	Lift station access hatch	60"	2	EA	$ 4,550	$ 9,100	
	Stainless steel pump rails		12	EA	$ 2,162	$ 25,939	
	Pole & base		1	LS	$ 1,500	$ 1,500	
	Davitt pump removal crane		1	EA	$ 2,266	$ 2,266	
	Total Structural Work						**$ 439,805**
Pump Train	8" Push-On Joint Ductile Iron Pipe - Plant	8"	30	LF	$ 1,200	$ 36,000	
	8" Flex Cplg, Above Ground	8"	3	EA	$ 889	$ 2,668	
	10"- 200 PSI CI FXF Swing Check Valve	8"	3	EA	$ 4,665	$ 13,996	
	8" FXF Cast Iron Plug Valve W/Handwheel Op	8"	3	EA	$ 4,936	$ 14,808	
	30" Pipe Support	30"	9	EA	$ 894	$ 8,050	
	3" 300 PSI Combination Air Valve Stainless Steel	3"	3	EA	$ 3,280	$ 9,840	
	8" CLDI Flg Straight Tee In Place - Plant	8"	15	EA	$ 2,236	$ 33,535	
	Total Pump Train						**$ 118,898**
Mechanical	20" Push-On Joint Ductile Iron Pipe - Plant	20"	50	LF	$ 3,000	$ 150,000	
	75 HP submersible pumps (duty and standby)	1736 gpm	3	EA	$ 110,550	$ 331,650	
	20" FXF Cast Iron Plug Valve W/Handwheel Op	20"	5	EA	$ 23,376	$ 116,880	
	30" Pipe Support	30"	7	EA	$ 894	$ 6,261	
	4" 300 PSI Combination Air Valve Stainless Steel	4"	1	EA	$ 4,280	$ 4,280	
	20" Adder For Restrained Joints	20"	50	LF	$ 89	$ 4,426	
	Total Mechanical						**$ 613,497**
Dual Force Main	18" Push-On Joint Ductile Iron Pipe - Plant	18"	30	LF	$ 2,700	$ 81,000	
	18" CLDI Flg Straight Tee In Place - Plant	18"	6	EA	$ 7,511	$ 45,068	
	Total Dual Force Main						**$ 126,068**
	TOTAL						**$ 1,477,000**
Electrical	Electrical & Instrumentation		40%			$ 590,800	
	Total Electrical & Instrumentation						**$ 591,000**
Odor Control	Odor control biofilters		10%			$ 147,700	
	Total Odor Control						**$ 148,000**
Painting & Coating	Painting & Coatings		10%			$ 147,700	
	Total Painting & Coating						**$ 148,000**
	Total cost excluding landscaping and security						**$ 2,364,000**
	Landscaping cost		1%			$ 24,000	**$ 24,000**
	Security costs for smaller capacity systems		1	EA	$ 56,000	$ 56,000	**$ 56,000**
	TOTAL DIRECT COST						**$ 2,444,000**
	Contractor Overhead		10%	%			**$ 244,000**
	Construction Profit		6%	%			**$ 147,000**
	Sales Tax (Applied to 65% of Total Direct Cost)		8%	%			**$ 205,000**
	General Conditions		10%	%			**$ 244,000**
	Bypass pump costs		10%	%			**$ 244,000**
	TOTAL CONSTRUCTION COSTS						**$ 3,528,000**

Notes: This cost estimate is a Class V estimate as defined by the American Association of Costing Engineers

APPENDIX 7C

WATER CIP FIGURES

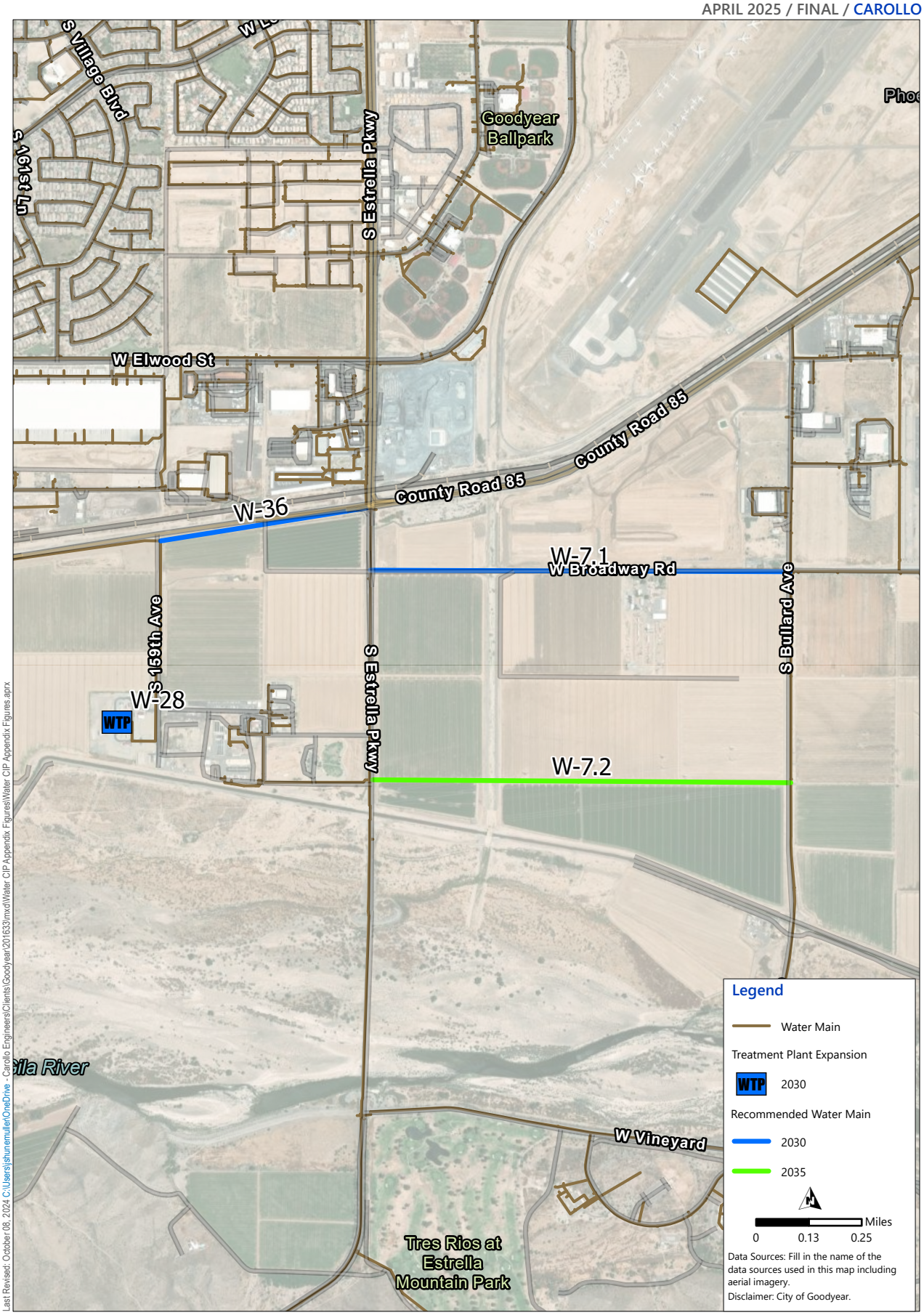
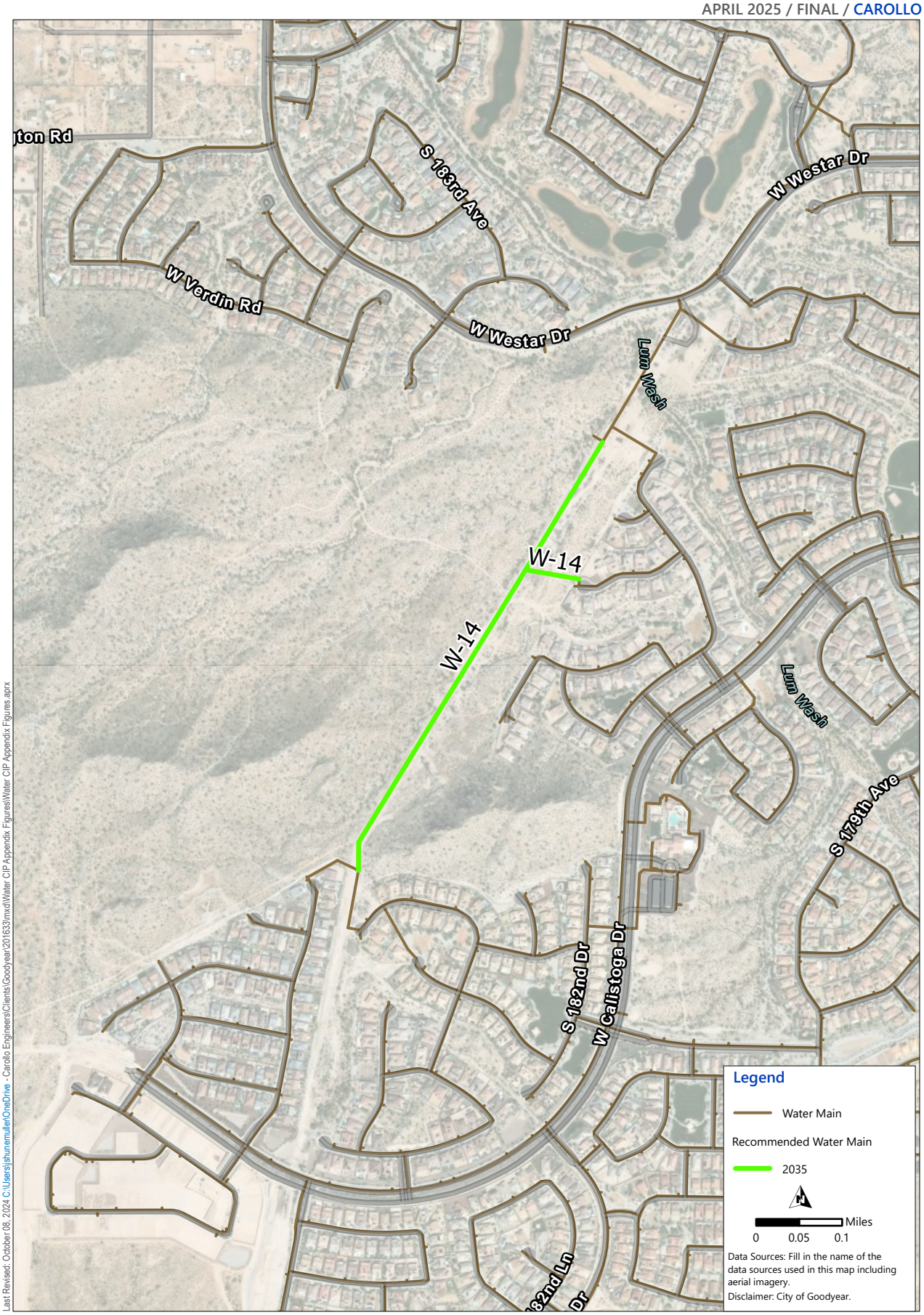


Figure 7C.1 Map of Capital Projects W-7, W-28, and W-36



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Figure 7C.2 Map of Capital Projects W-14

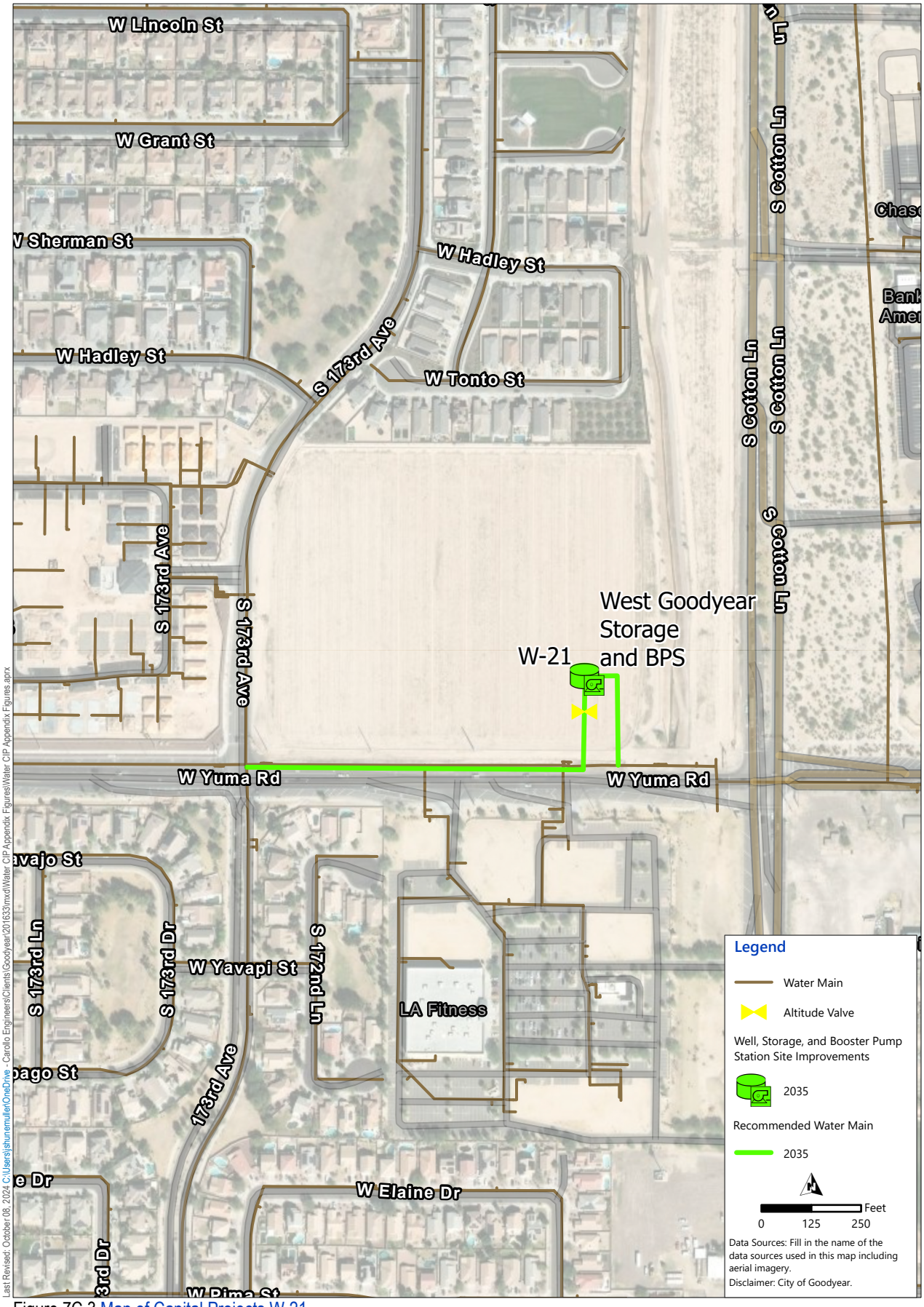


Figure 7C.3 Map of Capital Projects W-21

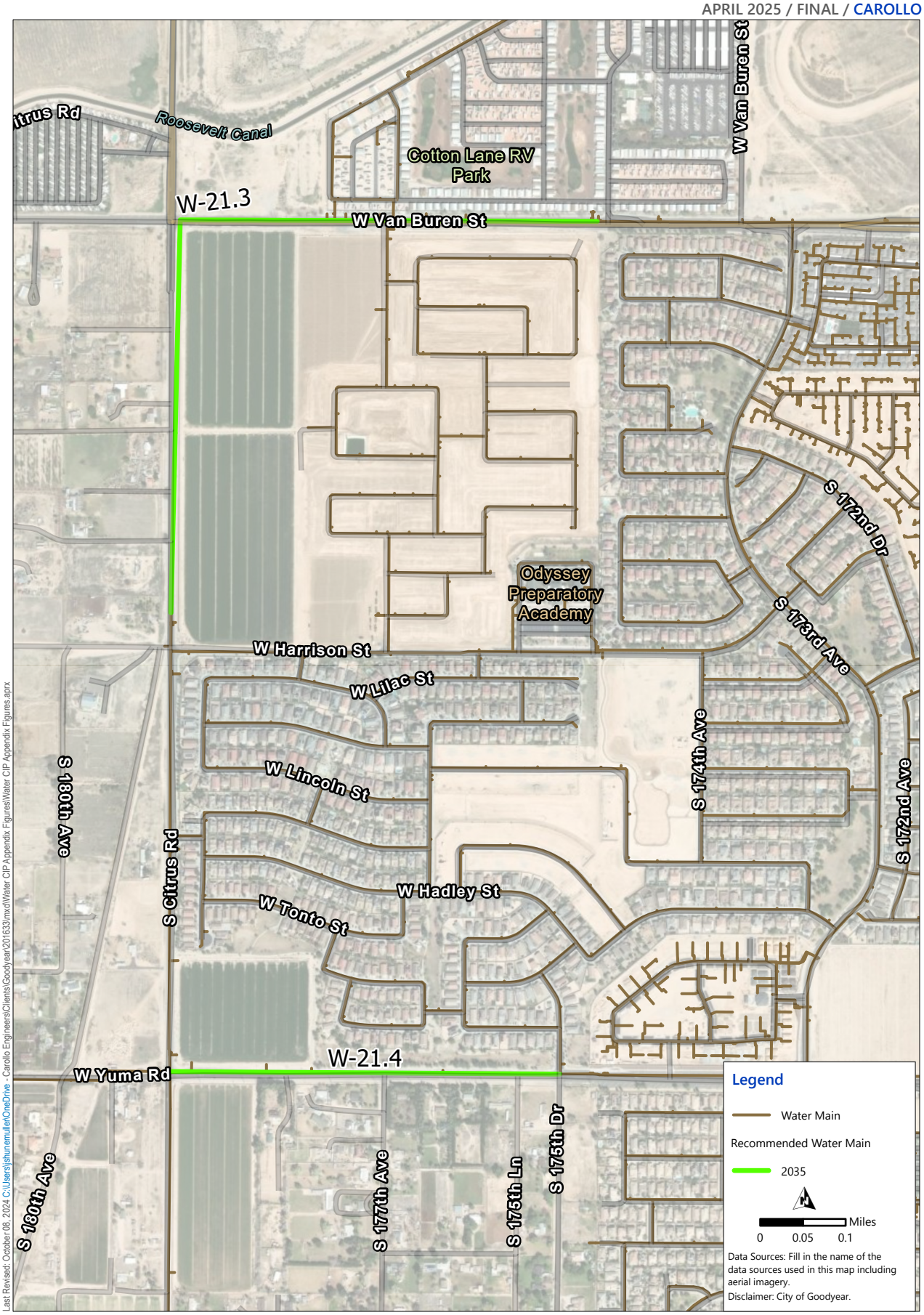


Figure 7C.4 Map of Capital Projects W-21.3 and W-21.4

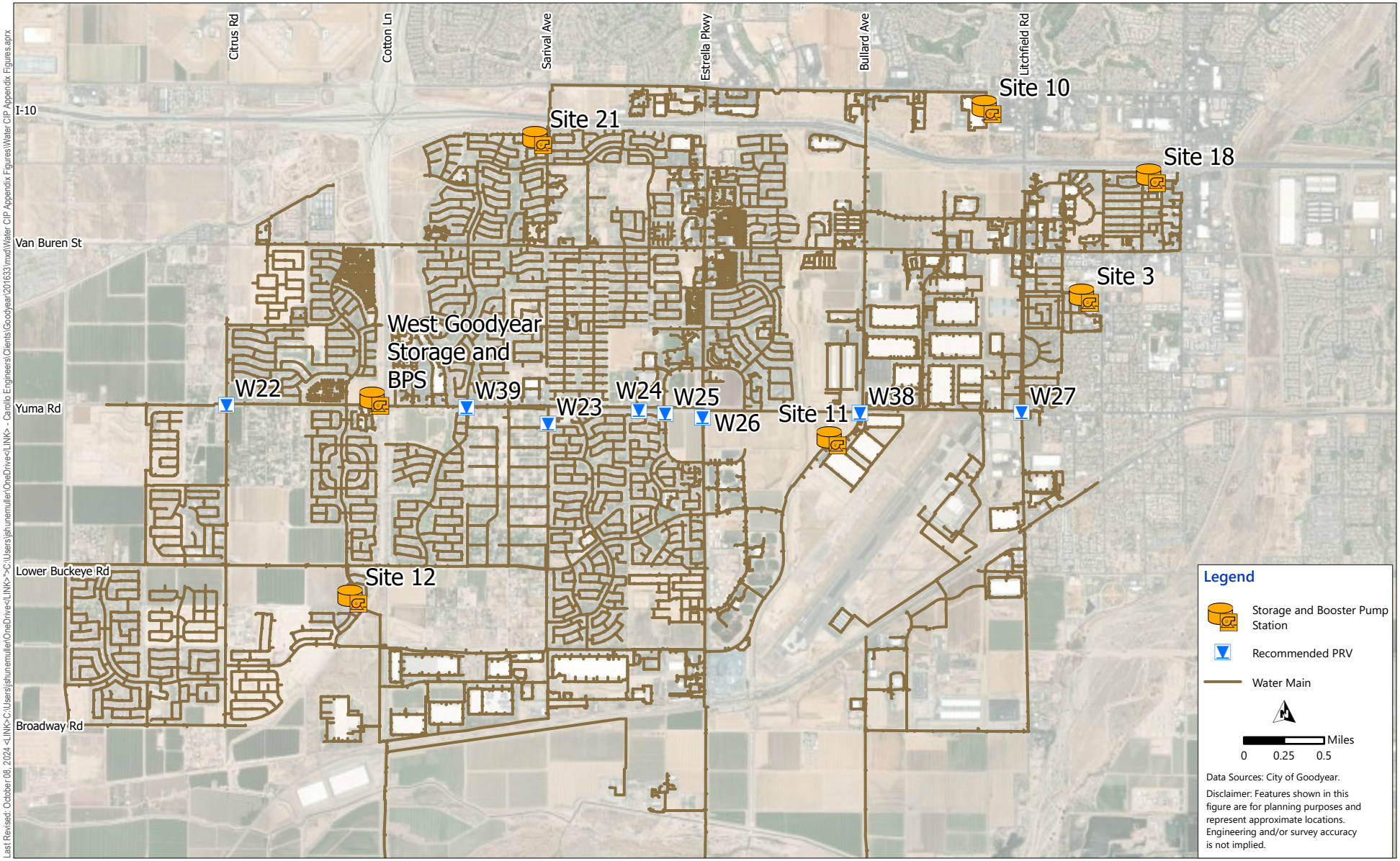


Figure 7C.5 Map of Capital Projects W-22, W-23, W-24, W-25, W-26, W-27, W-38, and W-39

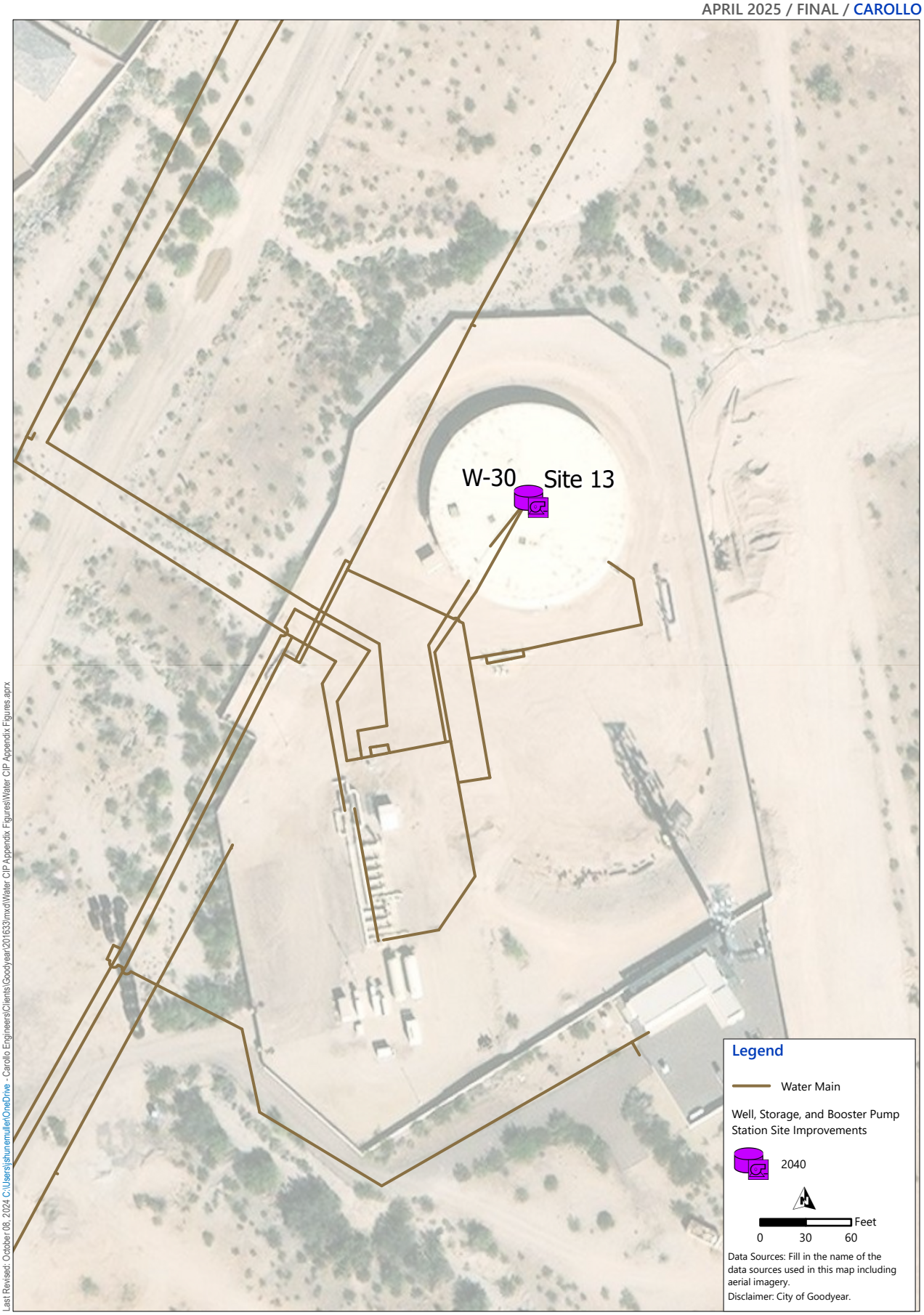


Figure 7C.6 Map of Capital Project W-30

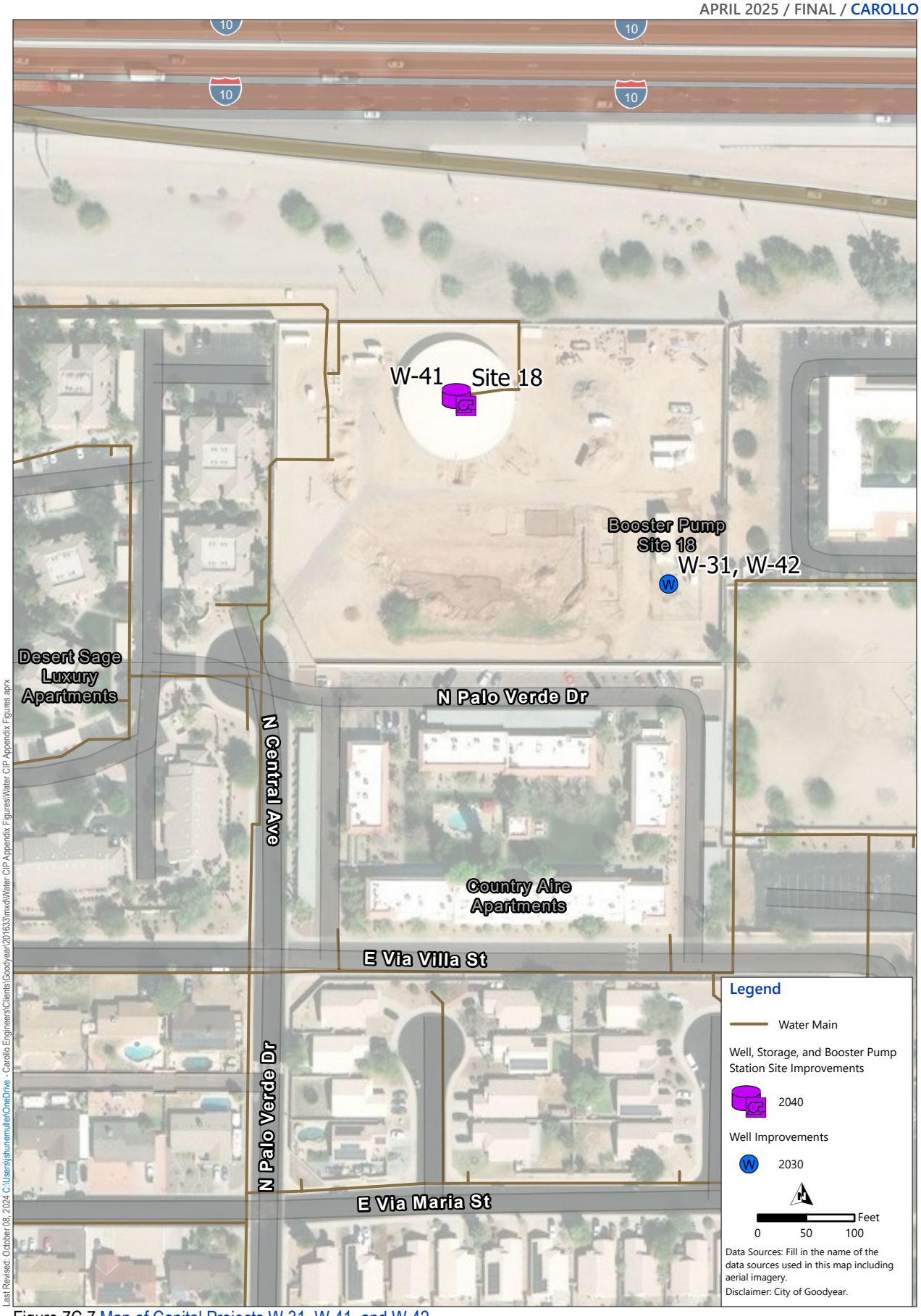


Figure 7C.7 Map of Capital Projects W-31, W-41, and W-42



Figure 7C.8 Map of Capital Project W-32

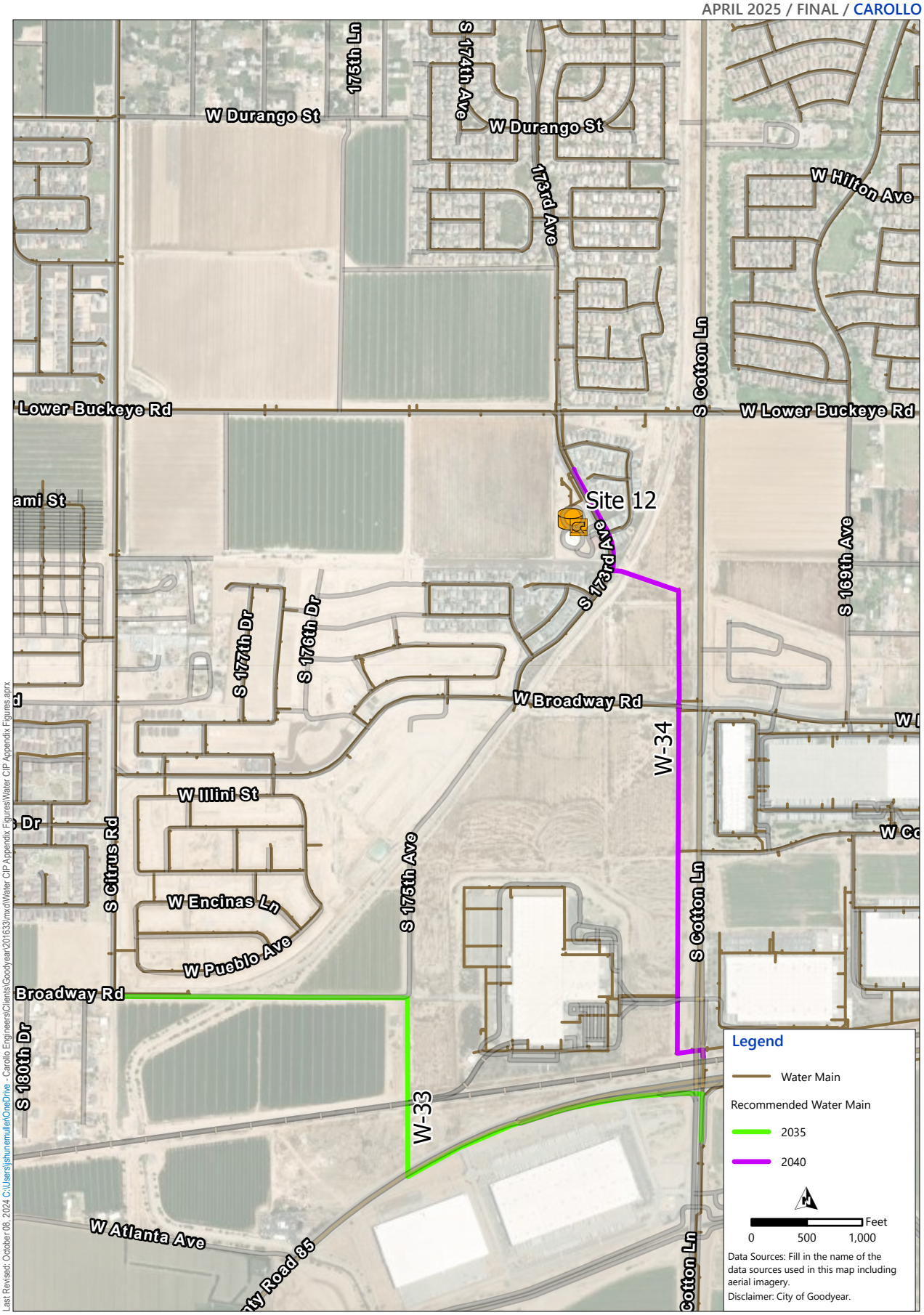
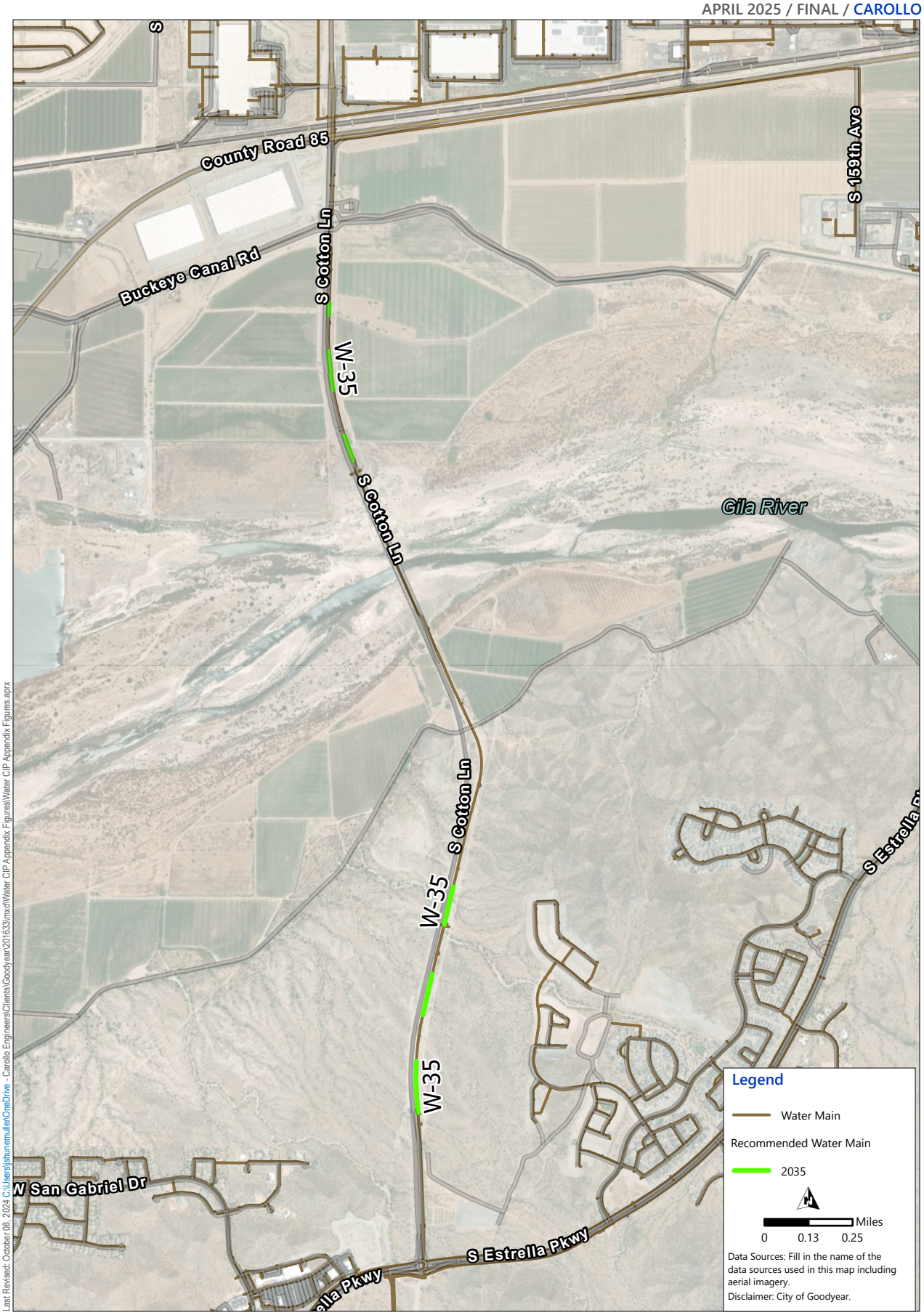


Figure 7C.9 Map of Capital Projects W-33 and W-34



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Figure 7C.10 Map of Capital Project W-35



Figure 7C.11 Map of Capital Project W-37

APPENDIX 7D

WASTEWATER CIP FIGURES



Figure 7D.1 Map of Capital Project WW-1

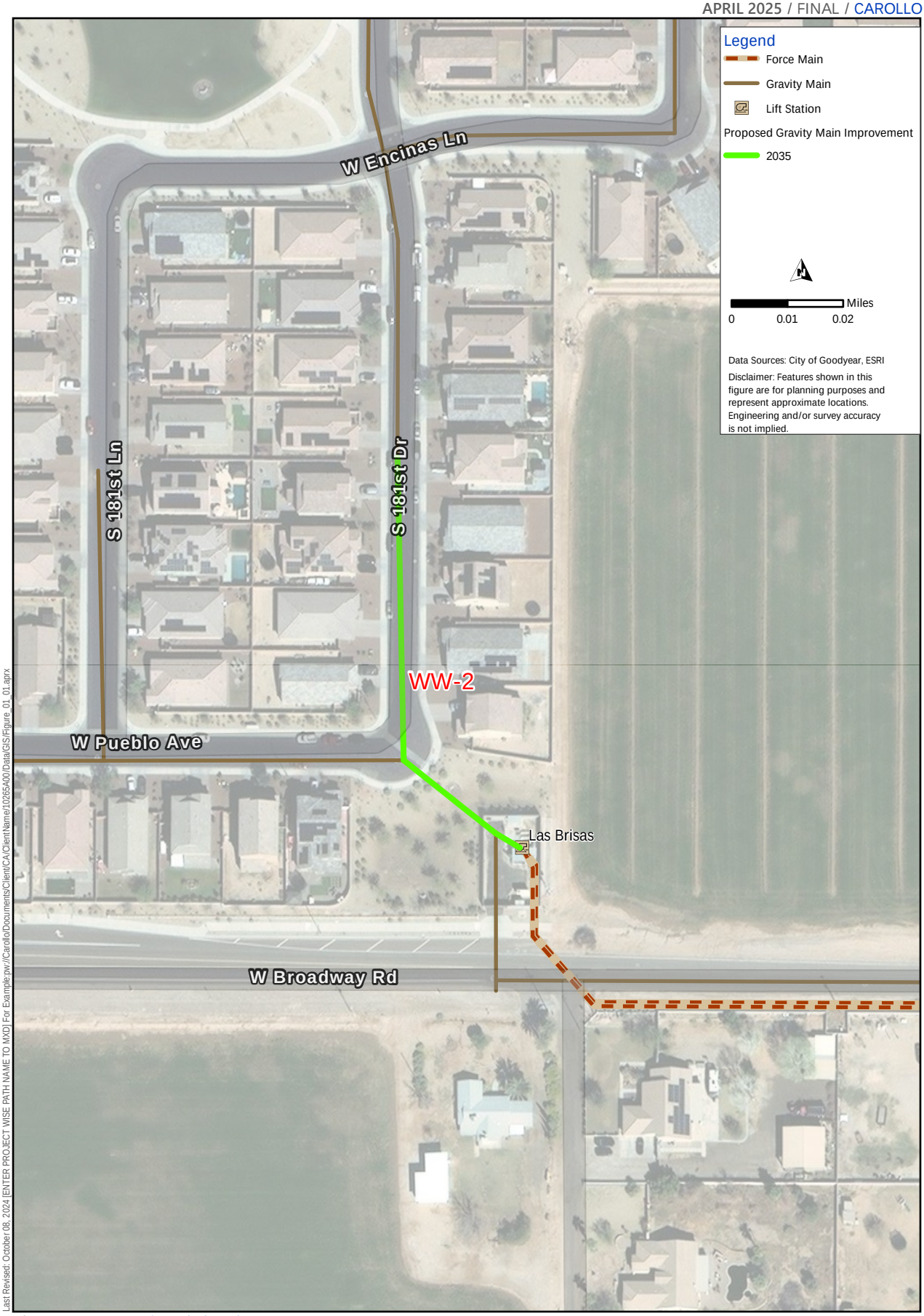


Figure 7D.2 Map of Capital Project WW-2

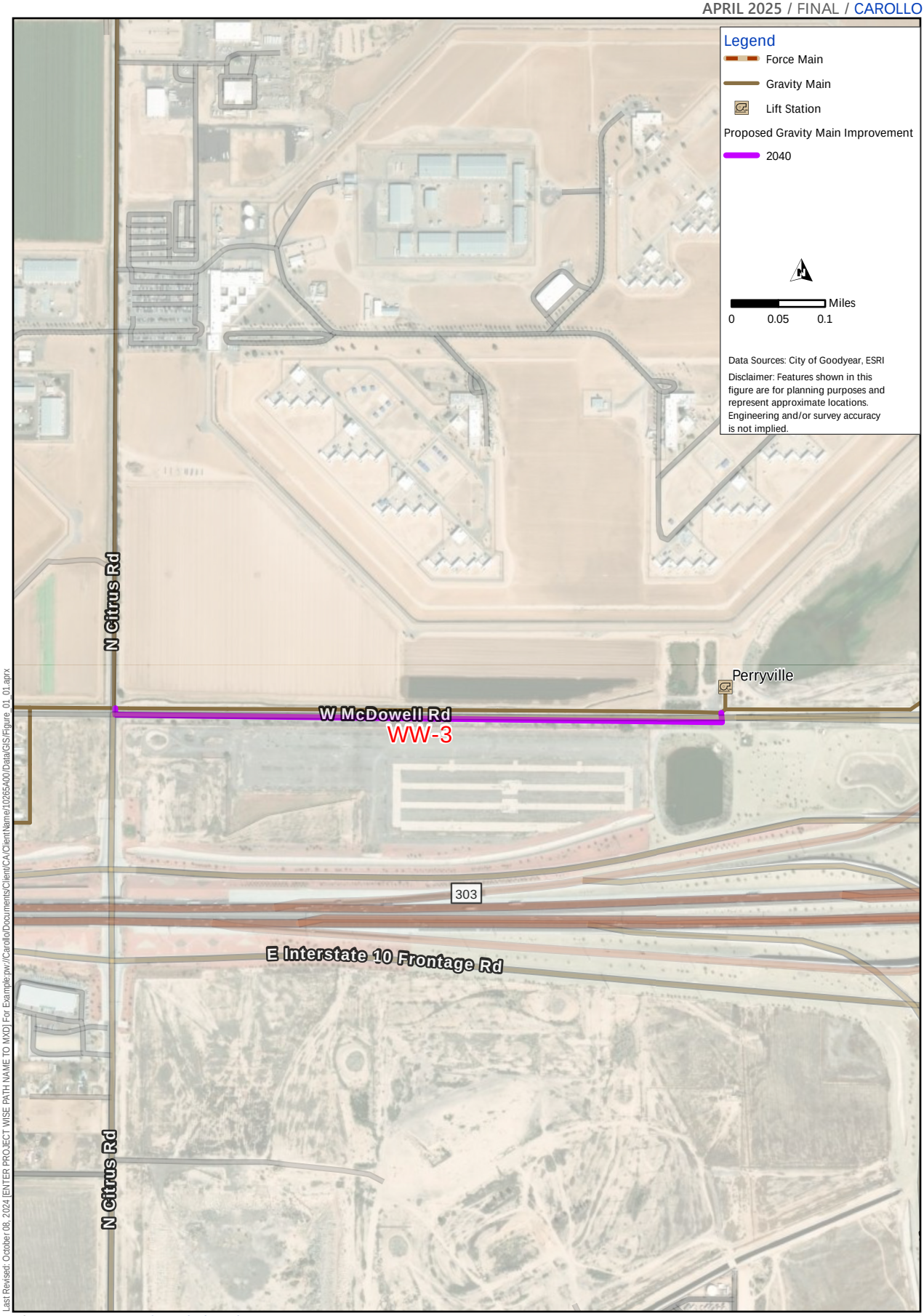


Figure 7D.3 Map of Capital Project WW-3

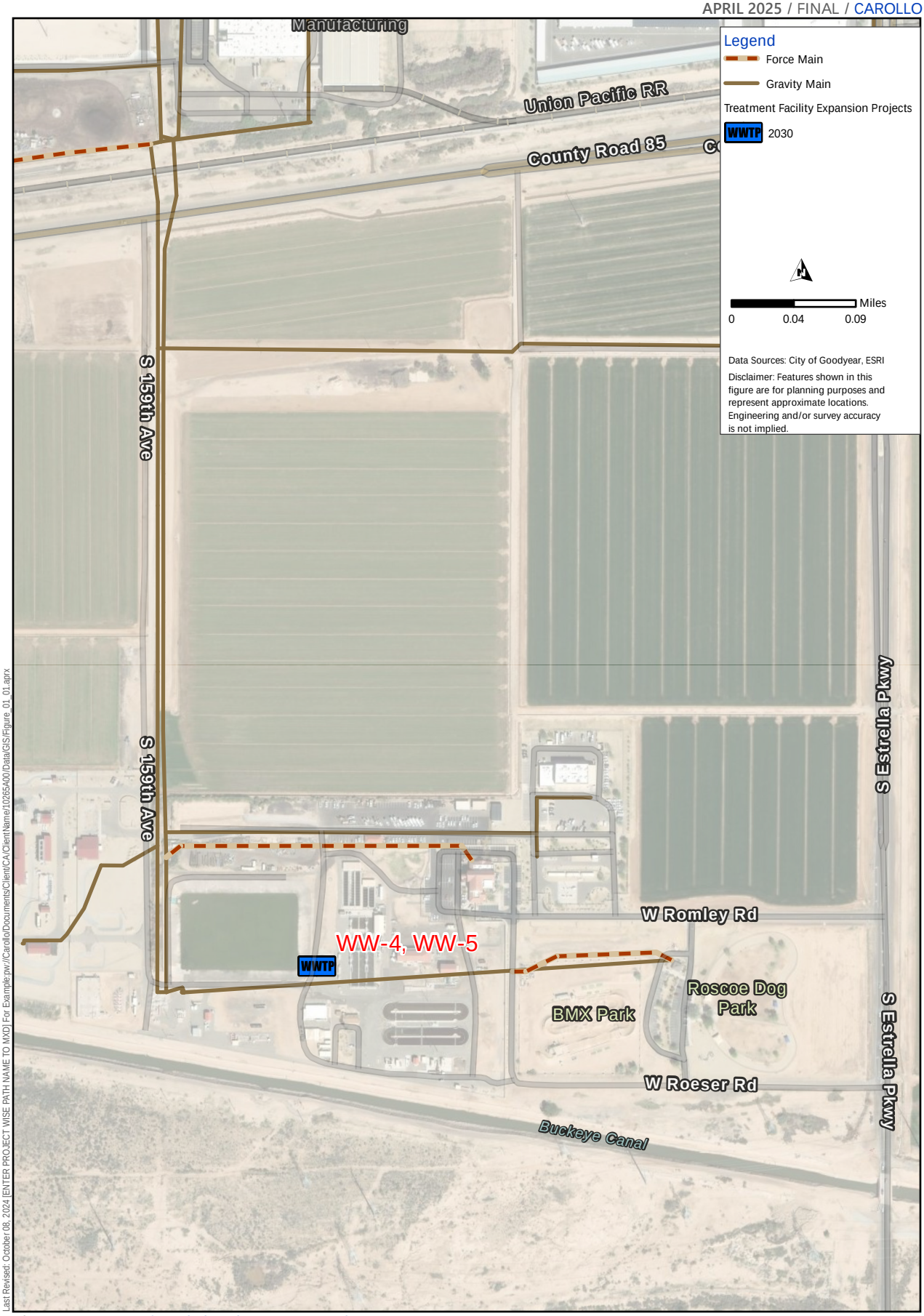


Figure 7D.4 Map of Capital Projects WW-4 and WW-5

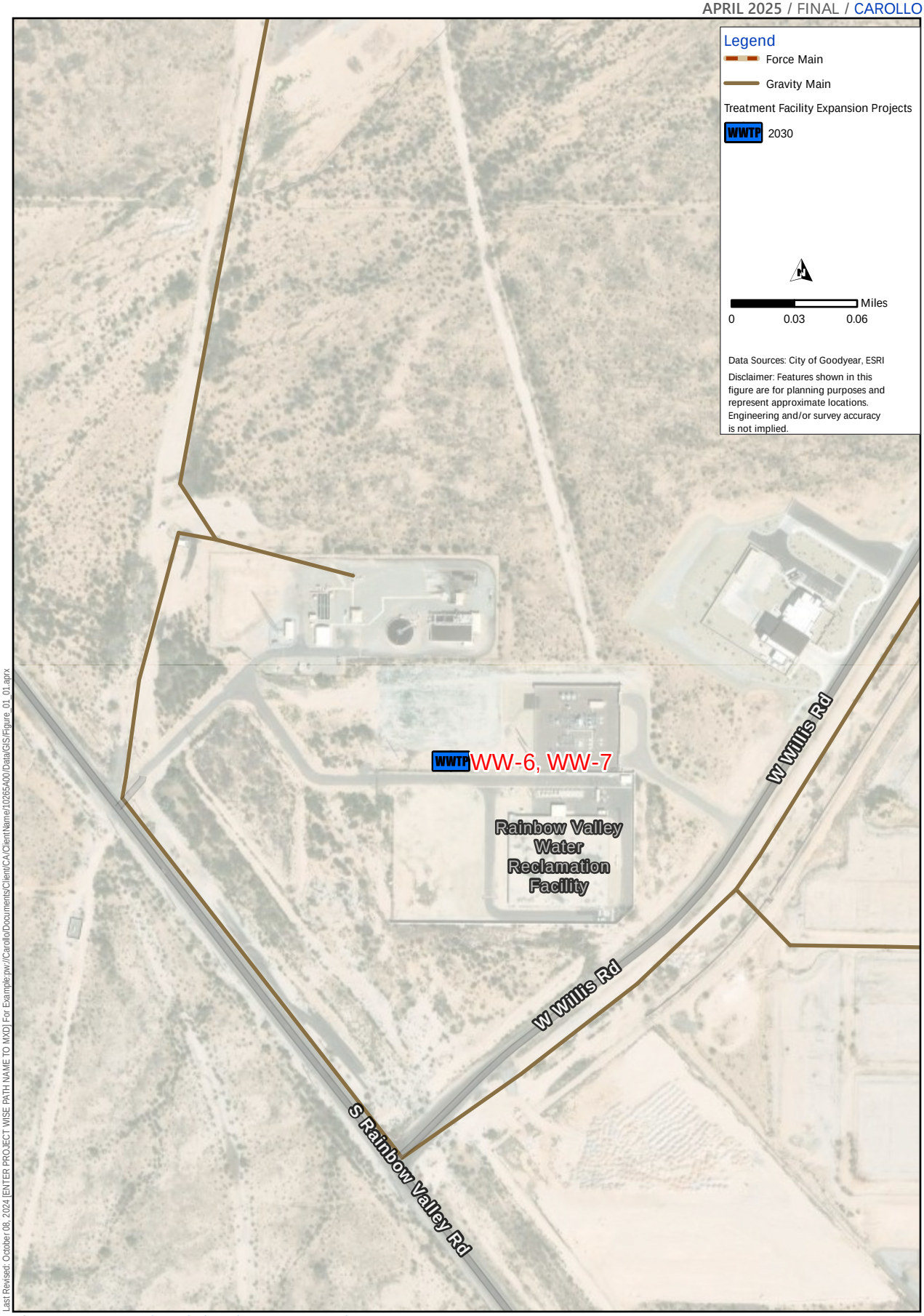


Figure 7D.5 Map of Capital Projects WW-6 and WW-7

APPENDIX 7E

RECLAIMED WATER CIP FIGURES

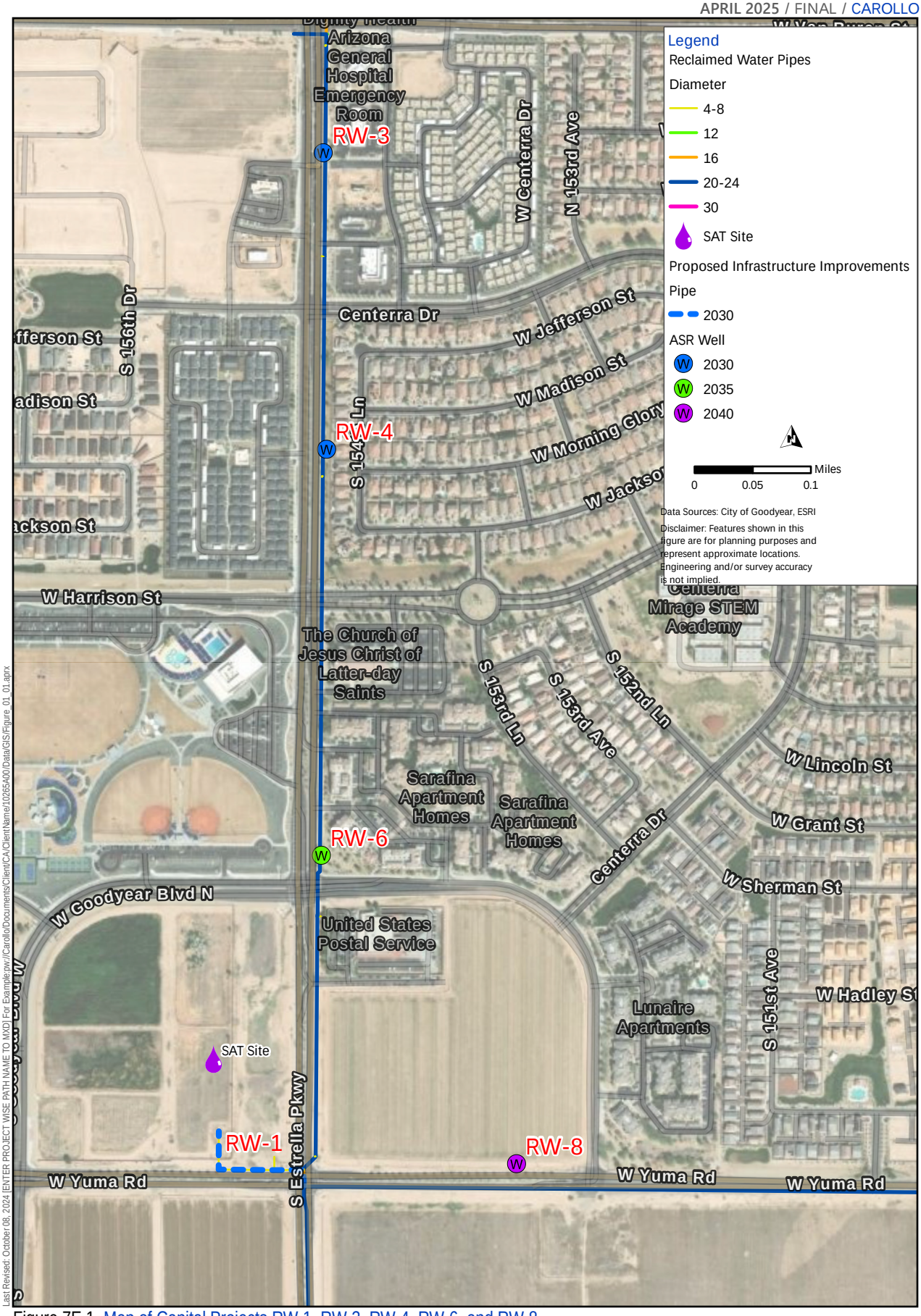


Figure 7E.1 Map of Capital Projects RW-1, RW-3, RW-4, RW-6, and RW-8

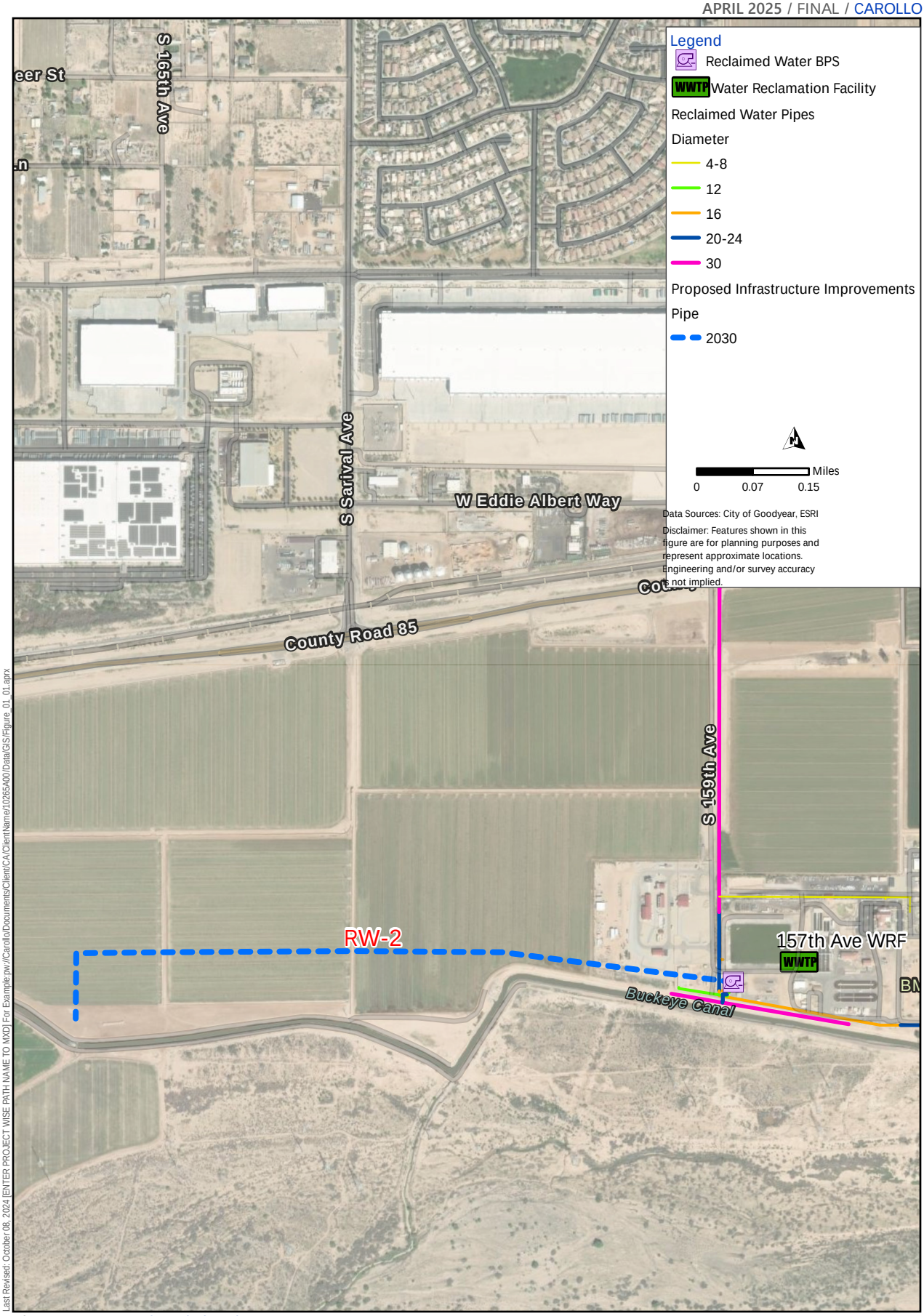


Figure 7E.2 Map of Capital Project RW-2

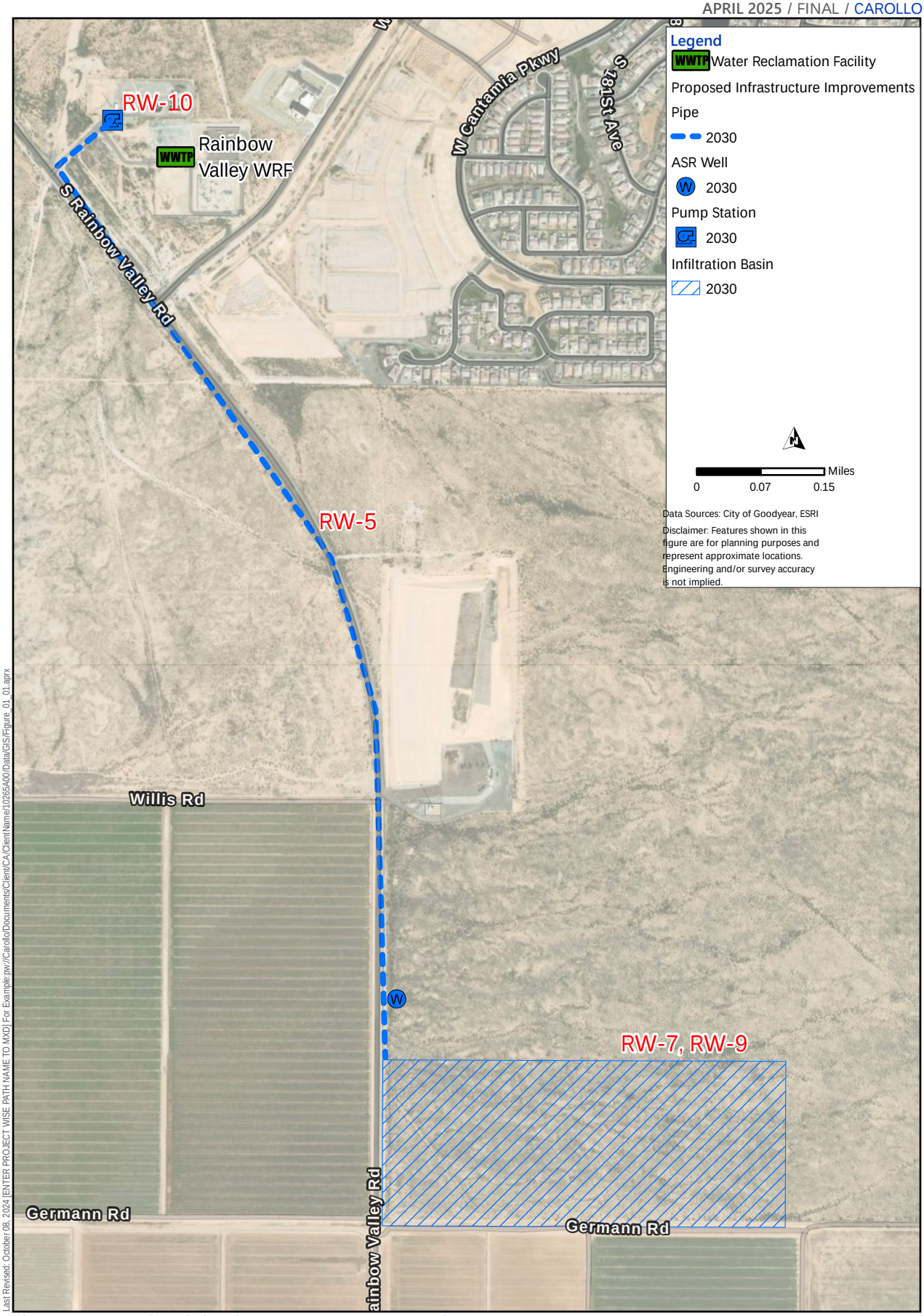


Figure 7E.3 Map of Capital Projects RW-5, RW-7, RW-9, and RW-10

ITEM #: 7.
DATE: 04/28/2025
AI #:2602

CITY COUNCIL ACTION REPORT

SUBJECT: VACATE AND ABANDON CERTAIN RIGHT OF WAY LOCATED NORTH OF INDIAN SCHOOL ROAD AND EAST OF SOUTH CITRUS ROAD

STAFF PRESENTER(S): Colton Blyle, Real Estate Specialist

OTHER PRESENTER(S):

Gerardo Villarraga, Civil Engineer

SUMMARY

The current landowner has requested the City to vacate and abandon a portion of unimproved right of way located along the mid-section line within section 23, township 2 north, range 2 west. City staff supports the abandonment.

STRATEGIC PLAN ALIGNMENT



RECOMMENDATION

ADOPT RESOLUTION NO. 2025-2461 VACATING AND ABANDONING A PORTION OF RIGHT-OF-WAY LOCATED ALONG THE MID SECTION LINE WITHIN SECTION 23, TOWNSHIP 2 NORTH, RANGE 2 WEST. (Colton Blyle, Real Estate Specialist)

FISCAL IMPACT

There is no direct fiscal impact from vacating and abandoning the requested portion of unimproved right-of-way located along the mid-section line within section 23, township 2 north, range 2 west being vacated. There are, however, indirect fiscal impacts that benefit the City in the form of the elimination of responsibility for the right-of-way being vacated, and tax revenues gained by the continued development of the adjacent property, which is being facilitated by the abandonment of the right-of-way.

BACKGROUND AND PREVIOUS ACTIONS

On November 5, 1927 by that certain document titled “Unit No. 52 of Romola of Arizona Grape Fruit Unit” recorded in the official records of the Maricopa County, Arizona Recorder at book 17 page 28, certain right-of-way located within Section 23, Township 2 North Range 2 West, was dedicated to Maricopa County for public highways. (Section 23, Township 2 North Range 2 West is the section located on the northeast corner of W. Indian School Road and N. Citrus Road.) The right-of-way was annexed into the city of Goodyear by Ordinance 89-284 adopted by the Goodyear City Council on April 8, 1989, recorded in the official records of the Maricopa County, Arizona Recorder as Instrument 89-389274. Gehan Homes of Arizona LLC, which owns the land adjacent to and surrounding this section of right-of-way has asked the City to abandon the right-of-way legally described in Attachment A, as Exhibits “A” and "B" to Resolution 2025-XXXX (the “Abandonment Area”) to facilitate its plans for the development of the property.

STAFF ANALYSIS

The Abandonment Area has not been improved and has not been used by the public as a roadway. Staff have determined that the Abandonment Area will not be developed as a public street when the adjacent property develops and is not needed for public right-of-way. City real-estate staff contacted all utility and telecommunication providers who have agreements that would allow them to install facilities within City right-of-way regarding the request to vacate and abandon the Abandonment Area asking whether they had facilities in the area. The utility and telecommunication providers were told the City would treat their failure to respond within the deadline provided as confirmation that the provider had no facilities within the Abandonment Area. Staff received confirmations from certain utility and telecommunication providers that the providers have no facilities within the Abandonment Areas, and staff is treating the non-response from other providers as confirmation that those providers have no existing facilities within the Abandonment Area.

Accordingly, staff is recommending that Council approve and adopt Resolution 2025-XXXX (included as Attachment A), which finds the right-of-way Abandonment Area as being unnecessary for public roadway purposes and vacates the right-of-way Abandonment Area.

Attachments

Attachment A - Resolution 2025-2461 with Exhibit A and B

RESOLUTION NO. 2025-2461

A RESOLUTION OF THE MAYOR AND COUNCIL OF THE CITY OF GOODYEAR, MARICOPA COUNTY, ARIZONA, VACATING AND ABANDONING A PORTION OF RIGHT-OF-WAY LOCATED ALONG THE MID SECTION LINE WITHIN SECTION 23, TOWNSHIP 2 NORTH, RANGE 2 WEST.

WHEREAS, on November 5, 1927 by that certain document titled "Unit No. 52 of Romola of Arizona Grape Fruit Unit" recorded in the official records of the Maricopa County, Arizona Recorder at book 17 page 28, certain right-of-way was dedicated to Maricopa County for public highways; and

WHEREAS, the right-of-way was annexed into the city of Goodyear by Ordinance 89-284 adopted by the Goodyear City Council on April 8, 1989 recorded in the official records of the Maricopa County, Arizona Recorder as Instrument 89-389274; and

WHEREAS, the city has been asked by the owner of the adjacent and surrounding property to vacate and abandon a portion of the existing right of way alignment across the section of the property described and depicted in Exhibit "A" and Exhibit "B" attached hereto and incorporated herein by this reference (the "Abandonment Area"); and

WHEREAS, pursuant to A. R. S. § 28-7202, the Goodyear City Council is vested with the power to dispose of streets owned by the city that are not necessary for public use as roadway; and

WHEREAS, the Abandonment Area has not been improved and has not been used by the public as a roadway, and staff has determined that the Abandonment Area will not be developed as a public street when the adjacent property develops and is not needed for public use as a roadway; and

WHEREAS, after concluding the Abandonment Area is not necessary for public use as roadway, city staff contacted all utility and telecommunication providers who have agreements that would allow them to install facilities within city right-of-way regarding the request to vacate and abandon the Abandonment Area asking whether they had facilities in the area; and

WHEREAS, the utility and telecommunication providers were told that the city would treat their failure to respond within the deadline provided as confirmation that the provider had no facilities within the Abandonment Area; and

WHEREAS, city staff has received confirmations from certain utility and telecommunication providers that the providers have no facilities within the Abandonment Areas, and staff is treating the non-response from other providers as confirmation that those providers have no existing facilities within the Abandonment Area.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND COUNCIL OF THE CITY OF GOODYEAR, MARICOPA COUNTY, ARIZONA, AS FOLLOWS:

SECTION 1. FINDINGS

The Goodyear City Council finds that the property legally described and depicted in Exhibit "A" and Exhibit "B" attached hereto and incorporated herein

by this reference (the "Abandonment Area") is not necessary for public use as a roadway.

The Goodyear City Council further finds, that pursuant to A. R. S. § 28-7208, and having given due consideration of the degree of fragmentation and marketability of the real property interests being relinquished (i.e. fee interest rights within the Abandonment Area), that the market value of the city's real property interests in the Abandonment Area is nominal and is off-set by other public benefits the city will receive in the form of tax revenues gained by the development of Citrus Farms, the elimination of the city's responsibility for maintaining roadway improvements within the Abandonment Area, and relief from potential liability for property damages, injury or death that may occur within the Abandonment Area.

SECTION 2. VACATING OF RIGHT-OF-WAY

Subject to the terms and conditions set forth below, the Mayor and Council of the city of Goodyear vacate and abandon the right-of-way legally described and depicted in Exhibit "A" and Exhibit "B" attached hereto and incorporated herein by this reference (the "Abandonment Area"). Title to the vacated and abandoned right-of-way shall vest in the owners of abutting land pursuant to A. R. S. § 28-7205 subject to the same encumbrances, liens, limitations, restrictions, and estates as exist on the vacated and abandoned right-of-way prior to it being vacated and abandoned.

SECTION 3. RECORDATION AND EFFECTIVE DATE FOR VACATING ROADWAY

Following its effective date, the City Clerk is directed to record Resolution 2025-2461 and its exhibits with the office of the County Recorder of Maricopa County, Arizona at which time the vacating and abandonment of the Abandonment Area described in Section 2 above shall become effective.

SECTION 4. EFFECTIVE DATE OF RESOLUTION

This Resolution 2025-2461 shall be effective upon the date of its adoption by the Mayor and Council of the city of Goodyear, Maricopa County, Arizona.

PASSED AND ADOPTED by the Mayor and Council of the City of Goodyear, Maricopa County, Arizona, by a _____ vote, this 28 day of April, 2025.

_____
Joe Pizzillo, Mayor

Date: _____

ATTEST:

_____
Jasmine Pernicano, City Clerk

APPROVED AS TO FORM:

_____
Roric Massey, City Attorney

Exhibit “A” and “B”
Abandonment Area

EXHIBIT "A"

LOCATED WITHIN A PORTION OF THE WEST HALF OF SECTION 23, TOWNSHIP 2 NORTH, RANGE 2 WEST, OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.

MORE PARTICULARLY DESCRIBED AS FOLLOWS:

A 40 FOOT WIDE ROADWAY ABANDONMENT BEING 20 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE WHICH SHALL BE LENGTHENED OR SHORTED TO THE WEST BOUNDARY LINE OF THE FINAL PLAT RECORDED AS ABEL RANCH PHASE 2, BOOK 1774, PAGE 31, RECORDS OF MARICOPA COUNTY:

SAID CENTERLINE DESCRIBED AS FOLLOWS;

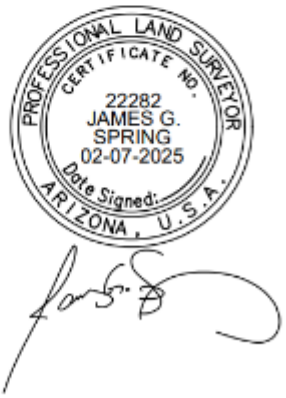
COMMENCING AT A FOUND 3" BRASS CAP IN HANDHOLE ACCEPTED AS THE WEST QUARTER CORNER OF SECTION 23, TOWNSHIP 2 NORTH, RANGE 2 WEST, FROM WHICH A FOUND BRASS CAP IN HANDHOLE ACCEPTED AS THE NORTHWEST QUARTER CORNER OF SECTION 23, TOWNSHIP 2 NORTH, RANGE 2 WEST, THEREOF BEARS N00°18'20"E A DISTANCE OF 2641.82 FEET;

THENCE, ALONG THE WEST–EAST MID SECTION LINE OF SAID SECTION 23, S89°34'36"E A DISTANCE OF 33.00 FEET TO THE EASTERLY RIGHT OF WAY LINE OF CITRUS ROAD AND ALSO BEING THE POINT OF BEGINNING;

THENCE, CONTINUING ALONG SAID MID–SECTION LINE, S89°34'36"E A DISTANCE OF 1558.96 FEET TO A POINT ENDING ON THE ABOVE DESCRIBED WESTERLY LINE OF SAID RECORDED FINAL PLAT OF ABEL RANCH PHASE 2;

THE ABOVE DESCRIBED ABANDONMENT CONTAINS A COMPUTED AREA OF 62,358 SQUARE FEET OR 1.43 ACRES, MORE OR LESS AND IS SUBJECT TO ANY EASEMENTS, RESTRICTIONS, OR RIGHTS OF WAY OF RECORD OR OTHERWISE.

THE DESCRIPTION SHOWN HEREON IS NOT TO BE USED TO VIOLATE ANY SUBDIVISION REGULATIONS OF THE STATE, COUNTY AND/OR MUNICIPALITY OR ANY OTHER LAND DIVISION RESTRICTIONS.

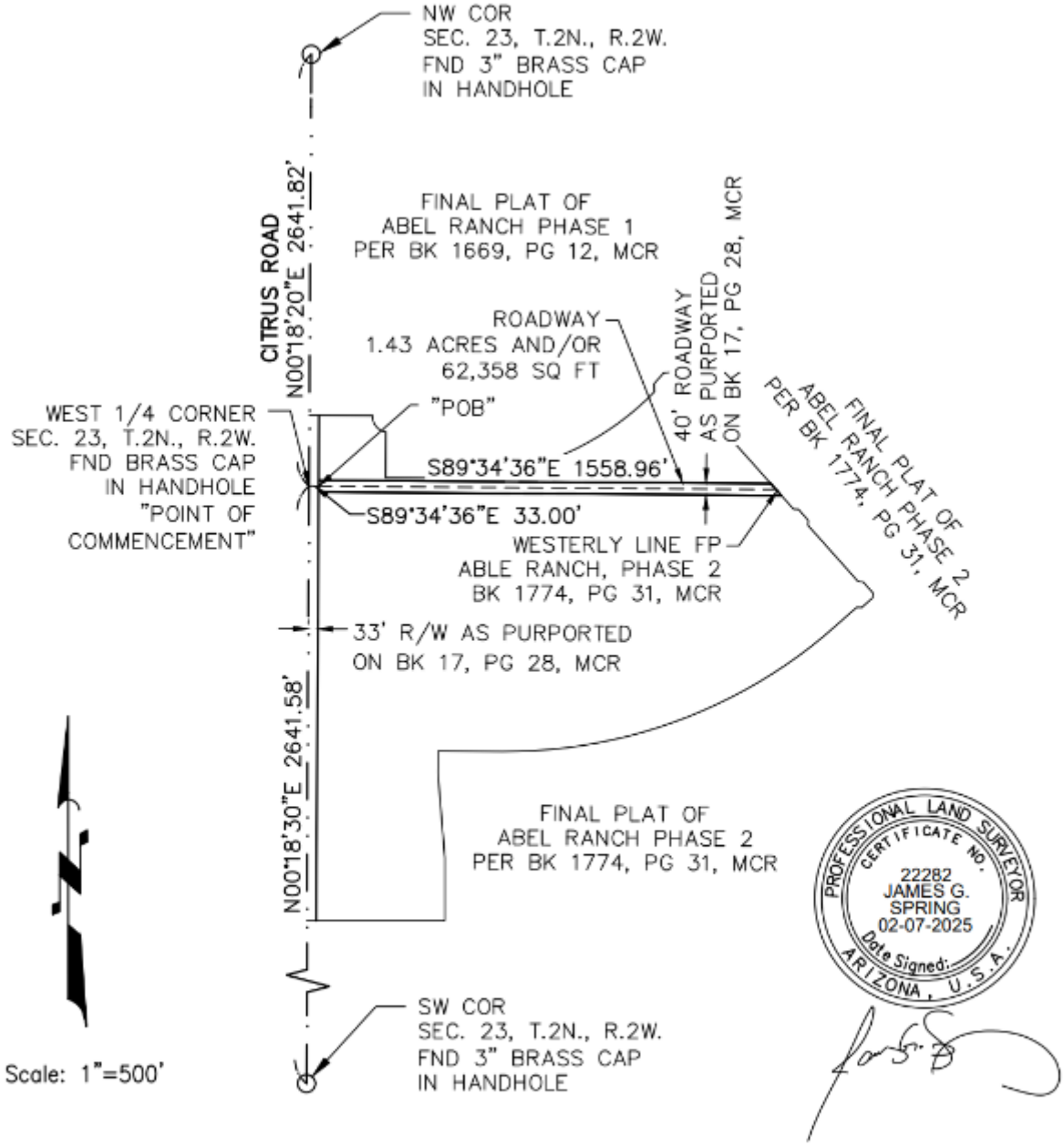


ATWELL
888.850.4200 www.atwell-group.com
4700 E. SOUTHERN AVENUE
MESA, AZ 85206
480.218.8831

JOB NO. 21000351 DATE: 02–07–2024 SHEET 1 OF 2

EXHIBIT "A"
40' ROADWAY ABANDONMENT
CITRUS FARMS
APN 502–31–010C
MARICOPA COUNTY, ARIZONA

EXHIBIT "B"



ATWELL
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JOB NO. 21000351 DATE: 02-07-2024 SHEET 2 OF 2

EXHIBIT "B"
40' ROADWAY ABANDONMENT
CITRUS FARMS
APN 502-31-010C
MARICOPA COUNTY, ARIZONA

ITEM #: 8.
DATE: 04/28/2025
AI #:2494

CITY COUNCIL ACTION REPORT

SUBJECT: AMENDMENT TO ARTICLES 3-4, 3-5, AND 3-6 OF GOODYEAR CITY CODE RELATED TO PROCUREMENT PROVISIONS

STAFF PRESENTER(S): Jared Askelson, Finance Director; Kevin Custer, Deputy Finance Director

SUMMARY

Council will take action on the recommended revisions of the procurement code to address inconsistencies, improve clarity, and align the code with recognized best practices in public procurement. The city's procurement code is outlined in Articles 3-4, 3-5, and 3-6 of the Goodyear City Code, which govern purchasing procedures, contract management, and related financial policies. These revisions aim to enhance transparency, efficiency, and compliance with applicable regulations.

STRATEGIC PLAN ALIGNMENT





RECOMMENDATION

ADOPT ORDINANCE NO. 2025-1630 AMENDING ARTICLES 3-4, 3-5, AND 3-6, OF GOODYEAR CITY CODE RELATED TO PROCUREMENT PROVISIONS. (Jared Askelson, Finance Director)

FISCAL IMPACT

There is no fiscal impact for this item.

BACKGROUND AND PREVIOUS ACTIONS

The procurement code is comprised of Articles 3-4, 3-5, and 3-6 of the Goodyear city code. It provides oversight, transparency, accountability, and stewardship in the use of city resources and governs the purchase of any goods or services within the City. It establishes the requirements of public procurement, including authority to enter into, approve, execute, or administer contracts and thresholds of procurement authority for city staff. The code was last updated on September 22, 2008, which included a resolution establishing the threshold for the

City Manager to approve unbudgeted items less than $75,000 and the requirement for City Council approval for budgeted expenditures exceeding $500,000. On April 7, 2025, the City Council received a presentation on the recommended updates as part of a work session. The proposed Ordinance, including the updated procurement code, is provided as Attachment A. A redline version showing the proposed changes is included as Attachment B.

STAFF ANALYSIS

Since 2008, several Phoenix-Metro cities have increased the threshold for formal procurement. In benchmarking with these cities, Finance staff, along with the procurement manager, recommend several corrections, clarifications and revisions to the city procurement code, including, but not limited to:

- Increasing the formal procurement threshold from $50,000 to $100,000, streamlining the competitive procurement process;
- Establishing a maximum threshold at $5,000,000 for job orders issued under Job-Order-Contracts;
- Adding the authorization of expenditures in line with the budget adoption; and
- Aligning the disposition of surplus property with other portions of the City Code.

Attachments

Attachment A - Ordinance 2025-1630 with Exhibit A

Attachment B - Redlines

ORDINANCE NO. 2025-1630

AN ORDINANCE OF THE MAYOR AND COUNCIL OF THE CITY OF GOODYEAR, MARICOPA COUNTY, ARIZONA, AMENDING ARTICLES 3-4, 3-5, AND 3-6, OF GOODYEAR CITY CODE RELATED TO PROCUREMENT PROVISIONS.

WHEREAS, Articles 3-4, 3-5, and 3-6 of City of Goodyear city code comprise the City's procurement code; and

WHEREAS, the procurement code was last revised in September 2008; and

WHEREAS, it has been determined that certain sections of procurement code require corrections, clarification, or revisions to facilitate efficiency and oversight in the procurement process; and

WHEREAS, the corrections, clarifications, and revisions were presented at the City Council Work Session on April 7, 2025; and

NOW, THEREFORE, BE IT ORDAINED BY THE MAYOR AND COUNCIL OF THE CITY OF GOODYEAR, MARICOPA COUNTY, ARIZONA, AS FOLLOWS:

SECTION 1. AMENDING AND REPLACING ARTICLES 3-4, 3-5, AND 3-6 OF GOODYEAR CITY CODE

Article 3-4 entitled General Procurement Provisions, Article 3-5 entitled Source Selection, and Article 3-6 entitled Material Management, are hereby amended by deleting and replacing in their entirety all sections and subsections, as set forth in that certain document titled, "Amendment to Articles 3-4, 3-5 and 3-6 of Goodyear City Code," attached as Exhibit A to this Ordinance No. 2025-1630 which is referred to, adopted, and made a part hereof as if fully set forth in this Ordinance.

SECTION 2. CORRECTIONS

The City Clerk and the codifiers of this Ordinance are authorized to make necessary clerical corrections to this Ordinance, including, but not limited to, the correction of scrivener's/clerical errors, references, ordinance numbering, section/subsection numbers, and any references thereto.

SECTION 3. SEVERABILITY

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, such portion shall be deemed a separate, distinct, and independent provision and such holding shall not affect the validity of the remaining portions thereof.

SECTION 4. PENALTIES

Any person who violates any provision of Articles 3-4, 3-5, and 3-6 being adopted herein shall be subject to penalties as set forth in Article 1-8 of the City of

Goodyear Code of Ordinances as it may be amended from time to time, and which currently provides:

§ 1-8-1 Penalty.

(A) Any person found guilty of violating any provisions of this code, except as otherwise provided in this code, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not to exceed $2,500 for an individual and not more than $20,000 for an enterprise or by imprisonment for a period of not to exceed six months, or by both such fine and imprisonment. Each day that a violation continues shall be a separate offense punishable as hereinabove described. The term ENTERPRISE as used in this subsection shall mean any corporation, partnership, association, labor union or other entity or any group of persons associated in part although not a legal entity.

(B) Any violation of or failure or refusal to do or perform any act required by Chapter 13 of this code constitutes a civil traffic violation. Civil traffic violations are subject to the provisions of A.R.S. Title 28, Chapter 6, Arts. 20 and 21 and amendments thereto.

(C) Notwithstanding any provisions to the contrary in this code providing for enforcement of violations of this code as misdemeanors or petty offenses, violations of any provision of this code and violations of any proscription, requirement or duty set forth in any ordinance incorporated into this code or any other ordinance of the City are declared to be civil code violations which may be adjudicated and enforced by the City court pursuant to Chapter 18 of this code, as an additional enforcement alternative to other remedies provided in this section or remedies and procedures provided for specifically in this code or other ordinance. Use of this civil code enforcement alternative is not mandatory and shall be at the discretion of the City official undertaking enforcement action on an alleged violation of this code or other ordinance.

Any person who violates any provisions in section 3-4-20 being adopted herein shall be subject to a civil penalty up to $5,000 in addition to any other penalty available pursuant to Article 1-8 of the City of Goodyear Code of Ordinances as it may be amended from time to time. This Ordinance shall be recorded with the Maricopa County Recorder’s Office.

SECTION 5. EFFECTIVE DATE

This Ordinance shall become effective at the time and in the manner prescribed by law.

PASSED AND ADOPTED by the Mayor and Council of the City of Goodyear, Maricopa County, Arizona, by a _____ vote, this 28 day of April, 2025.

_____
Joe Pizzillo, Mayor

Date: _____

ATTEST:

_____
Jasmine Pernicano, City Clerk

APPROVED AS TO FORM:

_____
Roric Massey, City Attorney

Exhibit A
AMENDMENT TO Articles 3-4, 3-5 and 3-6
OF GOODYEAR CITY CODE

Pursuant to City of Goodyear Ordinance No. 2025-1630 Article 3-4, entitled General Procurement Provisions, Article 3-5, entitled Source Selection, and Article 3-6, entitled Material Management, are hereby amended by deleting and replacing in their entirety all sections and subsections, as set forth below.

Article 3-4
GENERAL PROCUREMENT PROVISIONS

Sections:

3-4-1 Applicability.
3-4-2 Supplementary general principles of law applicable.
3-4-3 Definitions.
3-4-4 Definitions – Electronic bidding.
3-4-5 Authority of the procurement manager.
3-4-6 Delegation of authority by the procurement manager.
3-4-7 Authority to contract for certain professional services; Continuity of services.
3-4-8 Procurements involving a prescribed amount.
3-4-9 Cooperative procurement.
3-4-10 Compliance with federal requirements.
3-4-11 Online solicitations.
3-4-12 Contract clauses.
3-4-13 Change order.
3-4-14 Contracts in the best interest of the City.
3-4-15 Term of contracts.
3-4-16 Rules for protesting solicitations and contract awards.
3-4-17 Rules for suspension and debarment of contractors.
3-4-18 Debarment and suspension of contractors.
3-4-19 Appeal.
3-4-20 Violation; Penalty; Enforcement authority.

§ 3-4-1 Applicability.

(A) Articles 3-4, 3-5, and 3-6 comprise the City's procurement code, and the use of the term "Article" in the City's procurement code will include Articles 3-4, 3-5, and 3-6.

(B) The purpose of this article is to provide for oversight, transparency, accountability, and good stewardship in the use of city resources. This article shall govern the purchase of any goods or services for or on behalf of the City, including, but not limited to, the purchase of equipment, material, supplies, services, and public improvements.

(C) Except as otherwise provided, this article applies to all expenditures of public monies irrespective of their source, including federal assistance monies to this City, for the purchase of materials, goods, and services, under any contract. All expenditures shall be made with prior

City Council approval. Prior Council approval exists when the expenditure has been provided for in the current budget as adopted and the funds are available without limitation or restriction, or Council may designate prior approval by way of resolution as provided for in § 3-4-8. This article also applies to the disposal of city materials.

(D) This article does not apply to:

(1) Grants, as defined in this article;

(2) Contracts or payments between the City and other governments, except as provided in § 3-4-9;

(3) Public utility purchases, including, but not limited to, water, power, and related services;

(4) Development agreements, as defined in Arizona Revised Statutes (A.R.S.) Section 9-500.05, as amended;

(5) Contracts or arrangements for testimony relating to an existing or probable judicial proceeding in which the City is or may become a party;

(6) Agreements negotiated by legal counsel representing the City in settlement of litigation or threatened litigation are exempt from the provisions of this article, except as may be provided in § 3-4-7;

(7) Contracts for special investigative services for law enforcement purposes;

(8) Contracts for the purchase or sale of real property and ancillary services related thereto, such as title insurance, appraisals, or environmental assessments to the extent that they are negotiated in connection with a contract for purchase or sale of real property;

(9) Debt repayment obligations previously approved by City Council.

(10) Contracts for professional services as defined in § 3-4-3, except as may be provided in § 3-4-7.

(E) Nothing in this article shall prevent the City from complying with the terms and conditions of any grant, gift, bequest, or cooperative agreement. (Ord. 08-1137, passed 9-22-2008)

§ 3-4-2 Supplementary general principles of law applicable.

Unless displaced by the particular provisions of this article, the principles of law and equity, the common law of contracts as applied in the City and law relative to agency, fraud, misrepresentation, duress, coercion and mistake supplement the provisions of this article. (Ord. 08-1137, passed 9-22-2008)

§ 3-4-3 Definitions.

In this article, unless the context otherwise requires:

AFFILIATE. Any person effectively controlling or controlled by another or associated with others under common ownership or control.

AGGREGATE DOLLAR AMOUNT. Purchase price, including taxes and delivery charges, for the term of the contract and accounting for all allowable extensions and options.

ALTERNATE PROJECT DELIVERY METHODS. Design build, construction management at-risk, and job-order-contracting construction services.

AMENDMENT. Any written alteration to the contract, accomplished by mutual action of the parties and signed by the Procurement Manager or by unilateral action as permitted by the

terms of the contract, that authorizes a change in scope, quantities, items, pricing, schedule, or term.

ARCHITECT SERVICES. Those professional architect services that are within the scope of architectural practice as provided in A.R.S. Title 32, Chapter 1.

AWARD. A determination by the City that it is entering into a contract with one or more offerors.

BID. The response submitted by a bidder to an Invitation for Bids (IFB).

BIDDER. A supplier who submits a bid in response to an Invitation for Bids (IFB) or other formal solicitation type in which price is the primary factor in the evaluation process for award determination.

BRAND NAME. A name, term, symbol, design, or any combination thereof used in specifications to describe a product by a unique identifier specific to a particular seller or manufacturer that distinguishes it from its competition.

BRAND NAME OR EQUIVALENT. One or more manufacturers' brand names, with identifying model numbers, used in a specification to invoke certain quality, performance, and other salient characteristics needed to meet solicitation requirements.

BUSINESS. Any corporation, partnership, individual, sole proprietorship, joint stock company, joint venture, or other private legal entity.

CHANGE ORDER. A written modification or amendment to a contract, which is signed by the Procurement Manager.

CITY. The City of Goodyear.

COMPETITIVE RANGE. The group of responsible proposers chosen for additional discussions and negotiations based on an evaluation of their proposals, which are determined to be responsive and have a reasonable chance of being selected for an award.

CONSTRUCTION.

(1) The process of building, altering, repairing, improving, or demolishing any public structure or building or other public improvements of any kind to any public real property.

(2) Does not include:

(a) The routine operation, routine repair or routine maintenance of existing facilities, structures, buildings, or real property.

(b) The investigation, characterization, restoration, or remediation due to an environmental issue of existing facilities, structures, buildings, or real property.

CONSTRUCTION-MANAGER-AT-RISK. A project delivery method in which:

(1) There is a separate contract for design services and a separate contract for construction services, except that instead of a single contract for construction services, the City may elect separate contracts for preconstruction services during the design phase, for construction during the construction phase, and for any other construction services.

(2) The contract for construction services may be entered into at the same time as the contract for design services or at a later time.

(3) Design and construction of the project may be in sequential phases or concurrent phases and construction of some phases commencing before the entire design is complete.

(4) Finance services, maintenance services, operations services, preconstruction services and other related services may be included.

CONSTRUCTION SERVICES. Either of the following for construction-manager-at-risk, design build and job-order-contracting project delivery methods:

(1) Construction, excluding services, through the construction-manager-at-risk or job-order-contracting project delivery methods.

(2) A combination of construction and, as elected by the City, one or more related services, such as finance services, maintenance services, operations services, design services and preconstruction services, as those services are authorized in the definitions of construction-manager-at-risk, design build or job-order-contracting in this section.

CONTRACT. All types of city agreements, regardless of what they may be called, for the procurement of materials, services, construction, or the disposal of materials.

CONTRACT MODIFICATION. Any written alteration in the specifications, delivery point, frequency of delivery, period of performance, price, quantity, terms, and conditions, or other provisions of any contract, accomplished by mutual action of the parties to the contract.

CONTRACTOR. Any individual or business having a contract with the City.

COOPERATIVE (PROCUREMENT) PURCHASING.

(1)The action taken when two or more entities combine their requirements to obtain the advantages of volume purchases, including administrative savings and other benefits.

(2)A variety of arrangements, whereby two or more public procurement entities purchase from the same supplier or multiple suppliers using a single solicitation. Cooperative procurement efforts may result in contracts that other entities may “piggyback”.

COST OR PRICING DATA. Factual information about the actual or estimated cost of labor, material, overhead, and other cost elements that have been incurred or will be incurred by the contractor or offeror in performing the contract.

COST PLUS A PERCENTAGE OF COST CONTRACT. An agreement in which the contractor is provided a specified percentage profit over and above the actual costs. This pricing method is generally prohibited, or at least discouraged, because it provides an incentive for the contractor to increase, rather than decrease, costs.

COST REIMBURSEMENT CONTRACT. A contract under which a contractor is reimbursed for costs which are reasonable, allowable, and allocable in accordance with the contract terms and the provisions of this article, and paid a fee, if provided for in the contract.

DATA. Documented information, regardless of form or characteristic.

DAY. A calendar day, unless otherwise specified in the solicitation or contract.

DEBARMENT. An action taken by the Procurement Manager that prohibits a person from participating in the City’s procurement process.

DELIVERABLES. The actual contractual work product as defined in the statement of work; the desired goods or services described in a statement of requirement, specifications, scope of work, or other similar solicitation component to be provided under the contract.

DEPARTMENT. A subdivision or unit within the City as set forth in its organizational chart.

DESIGN BID BUILD. A project delivery method in which:

(1) There is a sequential award of two separate contracts.

(2) The first contract is for design services.

(3) The second contract is for construction.

(4) Design and construction of the project are in sequential phases.

(5) Finance services, maintenance services and operations services are not included.

DESIGN BUILD. A project delivery method in which:

(1) There is a single contract for design services and construction services, except that instead of a single contract for design services and construction services, the City may elect separate contracts for preconstruction services and design services during the design phase, for construction and design services during the construction phase and for any other construction services.

(2) Design and construction of the project may be in sequential phases or concurrent phases and construction of some phases commencing before the entire design is complete.

(3) Finance services, maintenance services, operations services, preconstruction services and other related services may be included.

DESIGN REQUIREMENTS.

(1) Means at a minimum the City's written description of the project or service to be procured, including:

(a) The required features, functions, characteristics, qualities, and properties.

(b) The anticipated schedule, including start, duration, and completion.

(c) The estimated budgets applicable to the specific procurement for design and construction and, if applicable, for operation and maintenance.

(2) May include:

(a) Drawings and other documents illustrating the scale and relationship of the features, functions and characteristics of the project, which shall all be prepared by an architect or engineer, as appropriate, who is registered pursuant to A.R.S. § 32-121.

(b) Additional design information or documents that the City elects to include.

DESIGN SERVICES. Architect services, engineer services or landscape architect services.

DESIGN PROFESSIONAL. An individual or firm that is registered by the state board of technical registration pursuant to A.R.S. § 32-121 to practice architecture, engineering, geology, landscape architecture or land surveying or any combination of those professions and persons employed by the registered individual or firm.

DESIGNEE. A duly authorized representative of the Procurement Manager.

ELIGIBLE PROCUREMENT UNIT. A local public procurement unit, any other state, any agency of the United States, or a nonprofit educational or public health institution that is eligible under a cooperative agreement to use City contracts.

E-PROCUREMENT SYSTEM. The City's official electronic procurement system as authorized by the Procurement Manager.

ENGINEER SERVICES. Those professional engineer services that are within the scope of engineering practice as provided in A.R.S. Title 32, Chapter 1.

FINANCE SERVICES. Financing for a construction services project.

GENERAL SERVICES ADMINISTRATION CONTRACT. Contracts awarded by the United States government general services administration.

GRANT.

(1) A transfer of federal government funds to state or local governments to support or stimulate programs authorized by federal or state laws in order to accomplish objectives that are locally defined and managed under a broad federal or state program.

(2) The furnishing of assistance by a federal, state, county, or city governmental jurisdiction, whether financial or otherwise, to any person to support a program authorized by law; does not include an award whose primary purpose is to procure supplies, services, or construction.

INTERESTED PARTY. An offeror or prospective offeror whose economic interest is affected substantially and directly by issuance of a solicitation, an award or loss of an award. Whether an offeror or prospective offeror has an economic interest depends upon the circumstances of each case.

JOB-ORDER-CONTRACTING. A project delivery method in which:

(1) The contract is a requirements contract for indefinite quantities of construction.

(2) The construction to be performed is specified in job orders issued during the contract.

(3) Finance services, maintenance services, operations services, preconstruction services, design services and other related services may be included.

LANDSCAPE ARCHITECT SERVICES. Those professional landscape architect services that are within the scope of landscape architectural practice as provided in A.R.S. Title 32, Chapter 1.

LOCAL PUBLIC PROCUREMENT UNIT. Any political subdivision, any agency, board, department or other instrumentality of such political subdivision and any nonprofit corporation created solely for the purpose of administering a cooperative purchase, as defined in A.R.S. §41-2631.

MAINTENANCE SERVICES. Routine maintenance, repair, and replacement of existing facilities, structures, buildings, or real property.

MATERIALS.

(1) All property, including equipment, supplies, printing, and insurance.

(2) Does not include land, a permanent interest in land or real property, or leases of property.

MAY. Denotes the permissive in a contract clause or specification.

MINOR IRREGULARITY OR INFORMALITY. A variation from the solicitation that does not affect the price of the contract or does not give an offeror an advantage or benefit not enjoyed by the other offerors or does not adversely impact the interests of the contracting party.

MUST. Denotes the imperative in contract clauses or specifications/statements of work. Also indicates a legal condition required to occur before a prescribed consequence will happen.

MULTIPLE AWARD. Contracts awarded to more than one supplier for comparable supplies and services.

NEGOTIATION. An exchange or series of exchanges between the City and an offeror or contractor in which both parties intend to revise, in writing, an offer or contract, unless revision is specifically prohibited by these rules or statutes.

NOTICE OF INTENT TO AWARD. A written notice publicly posted prior to announcing the award of a contract to notify interested parties of the intended award.

OFFER. A response to a solicitation that, if accepted, would bind the offeror to honor what was submitted.

OFFEROR. A generic term that refers to an individual or business that submits an offer in response to a solicitation.

OPERATIONS SERVICES. Routine operation of existing facilities, structures, buildings, or real property.

OWNER. The City of Goodyear.

PERSON. Any corporation, business, individual, union, committee, club, other organization, or group of individuals.

PIGGYBACK (PIGGYBACK COOPERATIVES). Form of intergovernmental cooperative purchasing in which an entity will be given the pricing and terms of a contract entered into by another entity. Generally, the other entity will competitively award a contract that will include language allowing for other entities to use the contract to their advantage in terms of pricing, thereby gaining economies of scale that they normally would not receive if they competed on their own.

PRECONSTRUCTION SERVICES. Services and other activities during the design phase.

PROCUREMENT.

(1) Buying, purchasing, renting, leasing or otherwise acquiring any materials, goods, services, construction, or construction services.

(2) Includes all functions that pertain to obtaining any material, services, construction, or construction services, including description of requirements, selection and solicitation of sources, preparation and award of contract, and all phases of contract administration.

PROCUREMENT CARD. A credit card issued to an authorized city employee that enables and facilitates online or electronic purchases directly from suppliers within pre-approved authority levels and spending limits.

PROCUREMENT FILE. A file containing documents relating to the acquisition and purchase of materials, supplies, services, construction, or construction services.

PROCUREMENT MANAGER. The individual designated by the City Manager for the City who is thereby duly authorized as directed to enter into, approve, execute, or administer contracts; make written determinations on contracts, bids, or purchases; and to serve as the property administrator. Written determinations required by this article shall be retained in the appropriate official records file of the Procurement Manager.

PROFESSIONAL SERVICES. Those services that require specialized knowledge, education, or skill, and where the qualifications of the person(s) rendering services are of primary importance. Professional services include, but are not limited to, appraisers, land surveyors, attorneys, architects, engineers, psychologists, physicians, health practitioners, auditors, financial advisors, systems and software analysts, consultants, and other technical registrants as defined in A.R.S. Title 32.

PROPERTY. Assets with a useful life of more than one year.

PROPERTY TRANSFER FORM. A form submitted by the department requesting transfer of fixed assets between departments or transfer of property to or from the surplus property program.

PROPOSAL. An offer to provide goods or services.

PROSPECTIVE OFFEROR. A person that expresses an interest in a specific solicitation.

PUBLIC PROCUREMENT UNIT. The City, a state or an agency of the United States, or any local public procurement unit such as a city or county government.

PURCHASE ORDER. A purchaser's written document to a supplier, authorized by the Procurement Manager, formalizing all the terms and conditions of a proposed transaction, such as a description of the requested items, cost of items being purchased, delivery schedule, terms of payment, and transportation.

PURCHASE REQUISITION. A written request authorizing the commencement of a purchasing transaction; typically, will include a description of the need and other information relative to the transaction. Submitted via eProcurement software.

QUOTATION. A statement of price, terms of sale, and description of goods or services offered by a supplier to a prospective purchaser; may be non-binding if solicited to obtain market information for planning purposes.

RESPONSIBLE BIDDER OR OFFEROR. A bidder or offeror who has (i) the capability to fully perform the contract requirements and (ii) the reliability that will ensure good faith performance.

RESPONSIVE BIDDER OR OFFEROR. A bidder or offeror who has submitted a bid or offer that fully conforms in all material respects to the solicitation and all of its requirements, including all form and substance.

RULES. A directive for conduct that is intended to provide regulations for implementing the requirements of this procurement code. In the event of a conflict, the code shall control over the rules, regulations, policies, or procedures.

SERVICES.

(1) The furnishing of labor, time or effort by a contractor or subcontractor which does not involve the delivery of a specific end product other than required reports and performance.

(2) Does not include employment agreements or collective bargaining agreements.

SHALL. Something is mandatory.

SINGLE-SOURCE. A procurement whereby a purchase is directed to one source because of standardization, warranty, or other factors even though other competitive sources may be available.

SITE. The land or premises on which the project is located.

SOLE-SOURCE. A non-competitive method of procurement used when only one supplier possesses the unique ability or capability to meet the particular requirements of the entity or when only one supplier is practicably available.

SOLICITATION. A Request for Quotations, an Invitation for Bids, a Request for Proposals, a Request for Qualifications, or any other invitation or request issued by the City to invite a person to submit an offer.

SOURCE SELECTION METHOD. A purchasing method, approved by the Procurement Manager, by which goods, services, or construction may be obtained. Such methods may include emergency purchases, competitive bidding, competitive negotiation, intergovernmental cooperative agreements, or purchases via credit card.

SPLIT PURCHASE. Separating a requirement that exceeds a single purchase limit or threshold into two or more buys as a means of circumventing a purchase limit or threshold. Split purchases are prohibited.

STATEMENT OF QUALIFICATIONS (SOQ). All documents submitted by a potential offeror in response to a request for qualifications.

SUBCONTRACTOR. A person who contracts to perform work or render service to a contractor or to another subcontractor as a part of a contract with the City.

SUPPLIER. A manufacturer, fabricator, distributor, or vendor having a direct contract with a contractor or subcontractor to furnish materials or equipment to be incorporated in the construction phase work by a contractor or subcontractor.

SURPLUS PROPERTY. Property no longer needed by City departments for their operations, obsolete property, property in poor or non-working condition, or property that is a by-product (e.g. scrap metal, used tires and oil, etc.). It does not include real property, which is governed by § 3-6-4.

SUSPENSION. An action taken by the Procurement Manager that temporarily disqualifies a person from participating in a city procurement process.

TRADE SECRET. Information, including a formula, pattern, device, compilation, program, method, technique, or process, that is the subject of reasonable efforts to maintain its secrecy and that derives independent economic value, actual or potential, as a result of not being generally known and not being readily ascertainable by public means. (Ord. 08-1137, passed 9-22-2008)

§ 3-4-4 Definitions – Electronic bidding.

In this article, unless the context otherwise requires:

AUCTION. A public sale in which property or items are sold to the highest bidder. Online auctions are allowed as directed by the Procurement Manager.

INFORMATION SERVICES. Data processing, telecommunications and office systems technologies and services.

INTERNET. The international computer network of both federal and nonfederal interoperable packet switched data networks, including the graphical sub network called the world wide web.

ONLINE SOLICITATION. A procurement process in which the City receives vendors' bids or offers for goods, services, construction or information services electronically over the internet in a real time, competitive solicitation event.

REVERSE AUCTION. A procurement method in which offerors are invited to bid on specified goods or services through online bidding and real time electronic bidding. During an electronic bidding process, offerors' prices or relative ranking are available to competing offerors and offerors may modify their offer prices until the closing date and time. (Ord. 08-1137, passed 9-22-2008)

§ 3-4-5 Authority of the procurement manager.

(A) The Procurement Manager shall serve as the central procurement authority and the Property Administrator for the City. The Procurement Manager shall be designated by the City Manager and will be duly authorized as directed to enter into, approve, execute, or administer contracts, and to make written determinations on contracts, bids, or purchases.

(B) The Procurement Manager may adopt rules, consistent with this article, governing the procurement and management of all materials, specifications, services, and construction to be procured by this City and the disposal of materials. Any prior approval that Council may establish by resolution as permitted by § 3-4-8 is still subject to this article and the rules established thereunder.

(C) Except as otherwise provided in this article, the Procurement Manager, in accordance with rules adopted under this article shall:

(1) Procure or supervise the procurement of all goods, services, and construction services needed by the City.

(2) Establish guidelines for the management of all inventories of materials belonging to the City.

(3) Sell, trade, or otherwise dispose of surplus property belonging to the City.

(4) Establish and maintain programs for the inspection, testing and acceptance of materials, services, and construction.

(5) Establish forms and procedures for use in all procurements.

(D) The Procurement Manager has the sole authority to debar or suspend a person from participating in city procurements. (Ord. 08-1137, passed 9-22-2008)

§ 3-4-6 Delegation of authority by the procurement manager.

The Procurement Manager may designate and delegate authority to qualified individuals of any city department. (Ord. 08-1137, passed 9-22-2008)

§ 3-4-7 Authority to contract for certain professional services; Continuity of services.

(A) Contracts for professional services as defined in § 3-4-3 or for services listed in (B) of this section are not required to comply with the provisions of this article except as may be set forth in this section. Any contract for services that does not meet the definition of professional services under § 3-4-3, but for which services relate to a prior contractual relationship that permits a continuity of services for the City may be exempt from this article, subject to the written approval of the Procurement Manager.

(B) All contracts for the services of legal counsel, expert witnesses related to an existing or probable judicial proceeding in which the City is or may be a party, or for special investigative services, shall be approved by the City Attorney.

(C) Payment for any services, including those services described in (A), and (B) of this section, procured under this article shall not be made unless pursuant to a written contract. (Ord. 08-1137, passed 9-22-2008)

§ 3-4-8 Procurements involving a prescribed amount.

(A) All City expenditures must be approved by Council prior to purchase. Prior approval exists for items that are included in the current budget as adopted by Council, and Council may designate an amount, by way of resolution, authorizing the City Manager to approve non-budgeted expenditures. Council may also designate an amount, by way of resolution, above which a budgeted expenditure must be approved, or specifically identified in the adoption of the budget to be considered approved, by Council before a contract, purchase order, change order, or a notice to proceed may be issued. Prior approval of expenditures does not waive the application of the provisions of this article. The expenditure must still meet the requirements of this article, as applicable.

(B) Any procurement less than one hundred thousand dollars ($100,000.00) will be procured in accordance with the rules established by the Procurement Manager.

(C) Procurement requirements shall not be artificially divided or fragmented so as to constitute a purchase under this section and to circumvent the source selection procedures required under Article 3-5. (Ord. 08-1137, passed 9-22-2008)

§ 3-4-9 Cooperative procurement.

(A) Pursuant to this article the City Council hereby approves and authorizes the Procurement Manager to enter into cooperative purchasing agreements and piggyback cooperatives deemed by the Procurement Manager to be in the best interest of the City. The City Council reserves the right to revoke its approval and authorization for an individual agreement.

(B) The Procurement Manager on behalf of the City may participate in, sponsor, conduct, or administer a cooperative purchasing agreement for the procurement of any materials, services, or construction with one or more public procurement units in accordance with an agreement entered into between the participants. The Procurement Manager will make a written recommendation that such an agreement is allowable and in the best interest of the City. (Ord. 08-1137, passed 9-22-2008)

§ 3-4-10 Compliance with federal requirements.

If a procurement involves the expenditure of federal assistance or monies, the Procurement Manager shall comply with federal law and authorized regulations which are mandatory and which may not be reflected in this article. (Ord. 08-1137, passed 9-22-2008)

§ 3-4-11 Online solicitations.

(A) If the Procurement Manager determines that electronic, online solicitation is advantageous, the Procurement Manager may use online solicitations to obtain bids or offers electronically for the purchase of goods, services, construction, and information services.

(B) An online solicitation must designate an opening date and time.

(C) The closing date and time for an online solicitation may be fixed or remain open depending on the structure of the item being solicited online. Information regarding the closing date and time must be included in the solicitation. At the opening date and time, the City must begin accepting online bids or offers and must continue accepting bids or offers until the solicitation is officially closed. The online system must provide for security equal to competitive sealed solicitations.

(D) All online bids or offers must be posted electronically and updated on a real time basis.

(E) The Procurement Manager may:

(1) Require vendors to register before the opening date and time and, as part of that registration, require vendors to agree to any terms, conditions, or other requirements of the solicitation.

(2) Pre-qualify vendors and allow only those vendors who are pre-qualified to submit bids or offers online.

(F) Provisions regarding competitive sealed solicitations (§§ 3-5-9 and 3-5-10) apply to solicitations issued pursuant to this section, except for the means of advertising. (Ord. 08-1137, passed 9-22-2008)

§ 3-4-12 Contract clauses.

(A) The Procurement Manager may permit or require the inclusion of clauses providing for appropriate remedies, adjustments in prices, time of performance or other contract provisions.

(B) The Procurement Manager may modify clauses for inclusion in any City contract, provided that any variations are supported by a written determination that states the circumstances justifying the variation and provided that notice of any material variation is stated in the solicitation.

(C) All contract clauses shall be approved by the City Attorney's office and shall be consistent with the provisions of this article and the regulations issued pursuant to this article. (Ord. 08-1137, passed 9-22-2008)

§ 3-4-13 Change order.

A change order exceeding an amount or percentage established by regulation may be executed only after the Procurement Manager determines in writing that the change order is advantageous to the City. (Ord. 08-1137, passed 9-22-2008)

§ 3-4-14 Contracts in the best interest of the City.

Any type of contract which will promote the best interests of the City may be used with the following limitations. A cost plus a percentage of cost contract is prohibited. All determinations regarding the best interest of the City shall be deemed by the Procurement Manager. (Ord. 08-1137, passed 9-22-2008)

§ 3-4-15 Term of Contracts.

(A) Unless otherwise provided by law, a contract for goods, services, or job-order-contracting construction services may be entered into for a period of time up to five years, as deemed to be in the best interest of the City by the Procurement Manager, if the term of the contract and conditions of renewal or extension, if any, are included in the solicitation and monies are available for the first fiscal period at the time of contracting. A contract may be entered into for materials or services for a period of time exceeding five years if, under rules adopted pursuant to this article, the Procurement Manager determines in writing that such a contract would be advantageous to the City. Payment and performance obligations for succeeding fiscal periods are subject to the availability and appropriation of monies.

(B) Before the use of a multi-term contract, it shall be determined in writing that:

(1) Estimated requirements cover the period of the contract and are reasonable and continuing.

(2) Such a contract will serve the best interests of the City by encouraging effective competition or otherwise promoting economies in city procurement.

(C) If monies are not appropriated or otherwise made available to support continuation of performance in a subsequent fiscal period, the contract shall be canceled, and the contractor may only be reimbursed for the reasonable value of any nonrecurring costs incurred but not amortized in the price of the goods or services delivered under the contract or which are otherwise not recoverable. The cost of cancelation may be paid from any appropriations available for such purposes. (Ord. 08-1137, passed 9-22-2008)

§ 3-4-16 Rules for protesting solicitations and contract awards.

The Procurement Manager shall include in the rules authorized by § 3-4-5, procedures providing for the expeditious administrative review of all solicitation protests and contract award claims or controversies.

§ 3-4-17 Rules for suspension and debarment of contractors.

The rules adopted by the Procurement Manager pursuant to §§ 3-4-5 and 3-4-18 shall include hearing procedures for the suspension and debarment of contractors. (Ord. 08-1137, passed 9-22-2008)

§ 3-4-18 Debarment and suspension of contractors.

(A) All contracts for services involving minors shall require background checks for all employees, or that contractor shall be placed on a suspension list until such time as all employees successfully meet this requirement. If there are reasonable grounds for debarment, the rules of the Procurement Manager may provide for the suspension of any person. A debarment shall not exceed three years.

(B) The causes for debarment or suspension include the following:

(1) Conviction of any person or any subsidiary or affiliate of any person for commission of a criminal offense arising out of obtaining or attempting to obtain a public or private contract or subcontract, or in the performance of such contract or subcontract.

(2) Conviction of any person or any subsidiary or affiliate of any person under any statute of the federal, state, or local government for embezzlement, theft, fraudulent schemes and artifices, fraudulent schemes, and practices, bid rigging, perjury, forgery, bribery, falsification, or destruction of records, receiving stolen property or any other offense indicating a lack of business integrity or business honesty which affects responsibility as a city contractor.

(3) Conviction or civil judgment finding a violation by any person or any subsidiary or affiliate of any person under state or federal antitrust statutes.

(4) Violations of city contract provisions of a character which are deemed to be so serious as to justify debarment action.

(5) Any other cause deemed to affect responsibility as a city contractor, including suspension or debarment of such person or any subsidiary or affiliate of such person by another governmental entity for any cause listed in rules of the Procurement Manager.

(C) A written determination to debar or suspend shall be issued pursuant to the rules of the Procurement Manager which shall:

(1) State the reasons for the action taken.

(2) Inform any debarred or suspended person involved of the right to administrative review as provided in this article.

(D) A copy of the decision under (C) of this section shall be furnished to any debarred or suspended person and to any intervening party, and a copy retained in the records of the City Clerk. (Ord. 08-1137, passed 9-22-2008)

§ 3-4-19 Appeal.

Any final decision on a protest, suspension, or debarment by the Procurement Manager under this article may be appealed. A copy of the appeal must be provided to the Procurement Manager and the City Attorney. (Ord. 08-1137, passed 9-22-2008)

§ 3-4-20 Violation; Penalty; Enforcement authority.

A person who evaluates bids or proposals shall sign a statement before reviewing bids or proposals that the person has no interest in the procurement other than that disclosed and will have no contact with any representative of any vendor related to the procurement during evaluation of bids or proposals. The person shall disclose on the statement any contact unrelated to the pending procurement that the person may need to have with a representative of a competing vendor and any contact with a representative of a competing vendor during evaluation of bids or proposals. A person who evaluates bids or proposals who fails to disclose contact with a representative of a competing vendor or who fails to provide accurate information on the statement is subject to a civil penalty up to $5,000, in addition to any other penalty available pursuant to § 1-8-1 of this Code. The Procurement Manager is authorized to initiate enforcement actions pursuant to the provisions of this section. (Ord. 08-1137, passed 9-22-2008)

Article 3-5
SOURCE SELECTION

Sections:

3-5-1 Definitions.
3-5-2 Methods of source selection.
3-5-3 Pre-qualification of contractors.
3-5-4 Bid and contract security.
3-5-5 Right to inspect plant.
3-5-6 Right to audit records.
3-5-7 Reporting of anti-competitive practices.
3-5-8 Retention of procurement records.
3-5-9 Competitive sealed bidding.
3-5-10 Competitive sealed proposals.
3-5-11 Cancellation of invitation for bids or requests for proposals.
3-5-12 Responsibility of bidders and offerors.
3-5-13 Sole-source and single-source procurement.
3-5-14 Emergency procurements.
3-5-15 Competition impracticable procurement.
3-5-16 Request for information.
3-5-17 Demonstration projects.
3-5-18 Unsolicited proposals.
3-5-19 General services administration (gsa) contracts.
3-5-20 Procurement of construction and specified professional services.
3-5-21 Cost principles rules.
3-5-22 Cost or pricing data.

§ 3-5-1 Definitions.

In this article, unless the context otherwise requires:

BIDDER PREQUALIFICATION. Determining in accordance with rules adopted pursuant to this article that a prospective bidder or offeror satisfies the criteria for being included on the bidder's list.

DEMONSTRATION PROJECT. A project in which a vendor supplies a service or material to the City for which the City does not pay but for which the City may be obligated to provide routine support such as utility cost and operating personnel.

ESTABLISHED CATALOG PRICE. The price included in a catalog, price list, schedule or other form that:

(1) Is regularly maintained by a manufacturer, distributor or contractor.

(2) Is either published or otherwise available for inspection by customers.

(3) States prices at which sales are currently or were last made to a significant number of any category of buyers or buyers constituting the general buying public for the materials or services involved.

INVITATION FOR BIDS (IFB). A procurement method used to solicit competitive sealed bid responses, sometimes called formal bids, when price is the basis for award, in accordance with the procedures prescribed in § 3-5-9.

MULTI-STEP SEALED BIDDING. A method of source selection involving two competitive steps that combine the elements of both Invitation for Bids and Request for Proposals. The first step may require the submission of technical and price proposals, with only the technical proposals being evaluated and scored. The second step involves opening the price proposals of those firms that have achieved the highest technical scores and are in competitive range.

PURCHASE DESCRIPTION. The words used in a solicitation to describe the materials, services or construction for purchase and includes specifications attached to, or made a part of, the solicitation.

REQUEST FOR INFORMATION. A non-binding method whereby a jurisdiction publishes via newspaper, internet, or direct mail its need for information about the availability in the commercial marketplace of materials or services from interested parties for an upcoming solicitation.

REQUEST FOR PROPOSALS. All documents, whether attached or incorporated by reference, which are used for soliciting proposals in accordance with procedures prescribed in § 3-5-10.

REQUEST FOR PROPOSALS (RFP). All documents, whether attached or incorporated by reference, which are issued by a procurement entity to solicit proposals from potential providers (proposers) for goods and services in accordance with procedures prescribed in § 3-5-10. Price is usually not a primary evaluation factor. An RFP provides for the negotiation of all terms, including price, prior to contract award. May include a provision for the negotiation of best and final offers. May be a single-step or multistep process.

REQUEST FOR QUALIFICATIONS (RFQu). All documents, whether attached or incorporated by reference, which are issued by a procurement entity to solicit statements of the qualifications of potential submitters for professional or construction services that will be evaluated solely upon the basis of the qualifications of the submitters.

REQUEST FOR QUOTATIONS (RFQ). All documents, whether attached or incorporated by reference, which are issued by a procurement entity to solicit quotations in accordance with procedures prescribed in § 3-4-8.

SPECIFICATION. Any description of the physical or functional characteristics, or of the nature of a material, service or construction item. Specification may include a description of any requirement for inspecting, testing or preparing a material, service or construction item for delivery. All specifications, including those prepared by architects, engineers, consultants and others for public contracts, shall seek to promote overall economy for the purposes intended and encourage competition in satisfying this City's needs and shall not be unduly restrictive.

UNSOLICITED PROPOSAL. A written proposal that is submitted on the initiative of the offeror or for the purposes of obtaining a contract with the City and that is not in response to a formal or informal request from the City. (Ord. 08-1137, passed 9-22-2008)

§ 3-5-2 Methods of source selection.

All city contracts shall be awarded by competitive sealed solicitations, including online solicitations, as provided in §§ 3-5-9 or 3-5-10, or as otherwise provided in this procurement code. (Ord. 08-1137, passed 9-22-2008)

§ 3-5-3 Pre-qualification of contractors.

Prospective contractors may be pre-qualified for particular types of materials, goods, services, and construction. Prospective contractors have a continuing duty to provide the Procurement Manager with information on any material change affecting the basis of pre-qualification. Solicitation mailing lists of potential contractors shall include the pre-qualified contractors. (Ord. 08-1137, passed 9-22-2008)

§ 3-5-4 Bid and contract security.

The Procurement Manager may require, in accordance with rules adopted by the Procurement Manager, the submission of security to guarantee faithful bid and contract performance. In determining the amount and type of security required for each contract, the Procurement Manager shall consider the nature of the performance and the need for future protection to the City. The requirement for security must be included in the invitation for bids or request for proposals. (Ord. 08-1137, passed 9-22-2008)

§ 3-5-5 Right to inspect plant.

The City may, at reasonable times, inspect the part of the plant or place of business of a contractor or any subcontractor which is related to the performance of any contract awarded, or to be awarded, by the City. (Ord. 08-1137, passed 9-22-2008)

§ 3-5-6 Right to audit records.

(A) The City may, at reasonable times and places, audit the books and records of any person who submits cost or pricing data as provided in § 3-5-23 to the extent that the books and records relate to the cost or pricing data. Any person who receives a contract, change order or contract modification for which cost, or pricing data is required shall maintain the books and records that relate to the cost or pricing data for five years after the completion of the contract.

(B) The City is entitled to audit the books and records of a contractor or any subcontractor conducting business with the City to the extent that the books and records relate to the performance of the contract or subcontract. The books and records shall be maintained by the contractor for a period of five years after the completion of the prime contract. (Ord. 08-1137, passed 9-22-2008)

§ 3-5-7 Reporting of anti-competitive practices.

If for any reason collusion or other anti-competitive practices are suspected among any bidders or offeror, a written summary of the relevant facts shall be transmitted to the Procurement Manager and the City Attorney. Anonymous reports may be considered if supported by verifiable facts. This section does not require an investigation by a law enforcement agency. The Procurement Manager or City Attorney may conduct such investigation as may be warranted. (Ord. 08-1137, passed 9-22-2008)

§ 3-5-8 Retention of procurement records.

All procurement records shall be retained and disposed of in accordance with records retention guidelines and schedules approved by the City Clerk's Office. (Ord. 08-1137, passed 9-22-2008)

§ 3-5-9 Competitive sealed bidding.

(A) An invitation for bids shall be issued and shall include a purchase description and all contractual terms and conditions applicable to the procurement.

(B) Adequate public notice of the invitation for bids shall be given a reasonable time before the date set forth in the invitation for the opening of bids, but not less than two weeks before bid opening date and time. The notice should include publication one or more times in a newspaper of general circulation, including circulation within the City. The notice may also be posted at a city approved site on a public network or by electronic notification to registered vendors.

(C) Bids shall be opened publicly at the time and place designated in the invitation for bids. The amount of each bid together with the name of each bidder shall be read, recorded, and published. The bid documents shall not be open for public inspection until after a contract is awarded. To the extent the bidder designates, and the City concurs, trade secrets or other proprietary data contained in the bid documents shall remain confidential in accordance with rules adopted by the Procurement Manager.

(D) Bids shall be received without alteration or correction, except as authorized in this article. Bids shall be evaluated based on the requirements set forth in the invitation for bids, including criteria to determine acceptability such as inspection, testing, quality, workmanship, delivery, and suitability for a particular purpose, as may be prescribed in rules adopted by the Procurement Manager. The invitation for bids shall set forth the evaluation criteria to be used, including the weighting of identified criteria. Evaluation criteria shall not be used for construction and no criteria may be used in bid evaluation that is not set forth in the invitation for bids.

(E) The correction or withdrawal of erroneous bids before or after bid opening, based on bid mistakes, may be permitted in accordance with rules adopted by the Procurement Manager. After bid opening, no corrections in bid prices or other provisions of bids prejudicial to the interest of the City or fair competition shall be permitted. Except as otherwise provided by rule, all decisions to permit the correction or withdrawal of bids, or to cancel awards or contracts based on bid mistakes, shall be supported by a written determination made by the Procurement Manager.

(F) The contract shall be awarded to the lowest responsible and responsive bidder whose bid conforms in all material respects to the requirements and criteria set forth in the invitation for bids. Except for procurement of construction, for purposes of determining the low bidder the Procurement Manager may consider the amount of applicable city business privilege tax and exclude that amount from the evaluation unless otherwise precluded by applicable law. If all bids for a construction project exceed available monies as certified by the appropriate fiscal officer, and the low responsive and responsible bid does not exceed such monies by more than 5%, the Procurement Manager may, in situations in which time or economic considerations preclude re-solicitation of work of a reduced scope, negotiate an adjustment of the bid price, including changes in the bid requirements, with the low responsive and responsible bidder, to bring the bid within the amount of available monies.

(G) The multi-step sealed bidding method may be used if the Procurement Manager determines in writing that it is not practical to initially prepare a definitive purchase description which is suitable to permit an award based on competitive sealed bidding. An invitation for bids

may be issued requesting the submission of technical offers to be followed by an invitation for bids limited to those bidders whose offers are determined to be technically acceptable under the criteria set forth in the first solicitation, except that the multi-step sealed bidding method may not be used for construction contracts. (Ord. 08-1137, passed 9-22-2008)

§ 3-5-10 Competitive sealed proposals.

(A) If the Procurement Manager determines in writing that the use of competitive sealed bidding is either not practicable or not advantageous to the City, a contract for materials or services may be entered into by competitive sealed proposals. This section does not apply to procurement of construction, construction services or specified professional services pursuant to § 3-5-20. Construction services shall be procured pursuant to §§ 3-5-14 or 3-5-20.

(B) Proposals shall be solicited through a request for proposals.

(C) Adequate public notice of the request for proposals shall be given a reasonable time before the date set forth in the request for proposals for the opening of proposals, but not less than two weeks before the solicitation opening date and time. The notice should include publication one or more times in a newspaper of general circulation, including circulation within the City. The notice may also be posted at a city approved site on a public network or by electronic notification to registered vendors.

(D) Proposals shall be opened publicly at the time and place designated in the request for proposals. The name of each offeror and such other relevant information shall be publicly read and recorded in accordance with rules adopted by the Procurement Manager. All other information contained in the proposals shall be confidential until after contract award. Any trade secrets or other proprietary data designated by the offeror may or may not remain confidential in accordance with rules adopted by the Procurement Manager.

(E) The request for proposals shall state the relative importance of price and other evaluation factors. Specific numerical weighting is not required.

(F) As provided in the request for proposals, and under rules adopted by the Procurement Manager, discussions may be conducted with responsible offerors who submit proposals determined to be reasonably susceptible to being selected for award for the purpose of clarification to assure full understanding of the solicitation requirements and to permit revision of offers. Offerors shall be accorded fair treatment with respect to any opportunity for discussion. Revisions may be permitted after submission and before award. If discussions are conducted, all offerors who have submitted proposals that are determined by the Procurement Manager to be in the competitive range shall be invited to submit a final proposal revision. In conducting discussions, there shall be no disclosure of any information derived from proposals submitted by competing offerors.

(G) The award shall be made to the responsible and responsive offeror whose proposal is determined in writing to be the most advantageous to the City, taking into consideration the evaluation factors set forth in the request for proposals. No other factors or criteria may be used in the evaluation. The amount of any applicable transaction privilege or use tax of the City, except as allowed by § 3-5-9(F) and applied to proposals, is not a factor in determining the most advantageous proposal. The contract file shall contain the basis on which the award is made. (Ord. 08-1137, passed 9-22-2008)

§ 3-5-11 Cancelation of invitation for bids or requests for proposals.

An invitation for bids, a request for proposals or other solicitation may be canceled or any or all bids or proposals may be rejected in whole or in part as may be specified in the solicitation if it is

in the best interests of the City as determined by the Procurement Manager. The reasons for the cancelation or rejection shall be made part of the contract file. The City Council may reject any bid that exceeds the prescribed amounts in § 3-4-8. (Ord. 08-1137, passed 9-22-2008)

§ 3-5-12 Responsibility of bidders and offerors.

(A) A written determination of non-responsibility of a bidder or offeror shall be made in accordance with rules adopted by the Procurement Manager. The unreasonable failure of a bidder or offeror to promptly supply information in connection with an inquiry with respect to responsibility shall be grounds for a determination of non-responsibility with respect to the bidder or offerors. A finding of non-responsibility shall not be construed as a violation of the rights of any person.

(B) Information furnished by a bidder or offeror pursuant to this section shall not be disclosed outside of the office of the Procurement Manager without prior written consent by the bidder or offeror except to law enforcement agencies or as otherwise required by applicable law. (Ord. 08-1137, passed 9-22-2008)

§ 3-5-13 Sole-source and single-source procurement.

A contract may be awarded for a material, good, service, or construction item without competition if the Procurement Manager determines in writing that there is a sole or single source for the required material, good, service, or construction item. The Procurement Manager may require the submission of cost or pricing data in connection with an award under this section. Sole-source or single-source procurement shall be avoided, except when no reasonable alternative sources exist. A written determination of the basis for the sole-source or single-source procurement shall be included in the procurement file. (Ord. 08-1137, passed 9-22-2008)

§ 3-5-14 Emergency procurements.

Notwithstanding any other provision of this article, the Procurement Manager may make or authorize others to make emergency procurements if there exists a threat to public health, welfare, or safety or if a situation exists which makes compliance with §§ 3-5-9, 3-5-10, or 3-5-20 impracticable, unnecessary, or contrary to the public interest as defined in rules adopted by the Procurement Manager, except that such emergency procurements shall be made with such competition as is practicable under the circumstances. A written determination of the basis for the emergency and for the selection of the particular contractor shall be included in the contract file. Materials, goods, or services obtained in an emergency procurement that exceed the amount prescribed in §3-4-8 shall be reported to the Council at its next regular meeting. (Ord. 08-1137, passed 9-22-2008)

§ 3-5-15 Competition impracticable procurement.

Notwithstanding any other provision of this article, the Procurement Manager may make, or authorize others to make, competition impracticable procurements if a situation exists which makes compliance with §§ 3-5-9, 3-5-10, or 3-5-20 impracticable, unnecessary, or disadvantageous to the City's interest, except that such procurements shall be made with such competition as is practicable under the circumstances. A written determination of the basis for the procurement and for the selection of the particular contractor shall be included in the contract file. (Ord. 08-1137, passed 9-22-2008)

§ 3-5-16 Request for information.

The Procurement Manager may issue a request for information to obtain data about services or materials available to meet a specific need. Adequate public notice as specified in § 3-5-9 shall be provided. (Ord. 08-1137, passed 9-22-2008)

§ 3-5-17 Demonstration projects.

(A) A demonstration project may be undertaken if the Procurement Manager determines in writing that the project is innovative, unique, and in the best interests of the City. The City shall not be obligated to pay the contractor during the demonstration period, or to procure or lease the services or materials supplied by the contractor. However, on the written request and justification by a department director and written determination by the Procurement Manager, the City may pay the contractor all or part of the expendable costs incurred during the demonstration period. The term of the demonstration shall not exceed two years.

(B) A subsequent contract to procure or lease services or materials previously supplied during a demonstration project may be procured under this section, subject to the Procurement Manager's approval, or it may be procured as otherwise provided in this article.

(C) Except as otherwise provided by law, a contractor for a demonstration project shall not be precluded from participating as a bidder or offeror in a procurement for the services or materials supplied during a demonstration project. (Ord. 08-1137, passed 9-22-2008)

§ 3-5-18 Unsolicited proposals.

A contract may be awarded based on an unsolicited proposal only if the Procurement Manager determines in writing that §§ 3-5-13 or 3-5-15 applies. The determination shall also include the following findings:

(A) The proposal is innovative and unique.

(B) The proposal is not available without restrictions from another source and does not closely resemble a similar product which is either available or pending in the industry.

(C) The City department receiving the proposal has sufficiently supported its recommendations with facts and circumstances that preclude competition.

(D) The Procurement Manager has approved, in writing, the award of a contract based on the unsolicited proposal. (Ord. 08-1137, passed 9-22-2008)

§ 3-5-19 General Services Administration (GSA) contracts.

Notwithstanding §§ 3-5-9 and 3-5-10, the Procurement Manager or the Procurement Manager's designee may use the pricing and cost schedules of General Services Administration (GSA) contracts for materials and services. The Procurement Manager or the Procurement Manager's designee may authorize a city department to make purchases under a GSA contract approved by the Procurement Manager or the Procurement Manager's designee without complying with the requirements prescribed in §§ 3-5-9 or 3-5-10 if the Procurement Manager or the Procurement Manager's designee determines that it meets the requirements established by the rules adopted by the Procurement Manager. (Ord. 08-1137, passed 9-22-2008)

§ 3-5-20 Procurement of construction and specified professional services.

Professional services contracts with technical registrants, as defined in A.R.S. Title 32, and construction services contracts will be governed by the provisions of A.R.S. Title 34, except that for Job-Order-Contracting construction services only, the maximum dollar amount of an

individual job order shall be five million dollars ($5,000,000.00). (Ord. 08-1137, passed 9-22-2008)

§ 3-5-21 Cost principles rules.

The Procurement Manager may adopt rules setting forth cost principles which shall be used to determine the allowability of incurred costs under contract provisions which provide for the reimbursement of costs. (Ord. 08-1137, passed 9-22-2008)

§ 3-5-23 Cost or pricing data.

The submission of current cost or pricing data may be required in connection with an award in situations in which analysis of the proposed price is essential to determine that the price is fair and reasonable. The Procurement Manager may establish by rules what constitutes a fair and reasonable price. (Ord. 08-1137, passed 9-22-2008)

Article 3-6
MATERIAL MANAGEMENT

Sections:

3-6-1 Definitions.

3-6-2 Property administrator.

3-6-3 Surplus property management rules.

3-6-4 Disposition of real or personal property.

3-6-5 Disposition of abandoned or unclaimed property.

§ 3-6-1 Definitions.

In this article, unless the context otherwise requires:

PROPERTY. Assets with a useful life of more than one year.

PROPERTY TRANSFER FORM. A form submitted by the department requesting transfer of fixed assets between departments or transfer of property to or from the Surplus Property Program.

SURPLUS PROPERTY. Property no longer needed by city departments for their operations, obsolete property, property in poor or non-working condition, or property that is a byproduct (e.g. scrap metal, used tires and oil, etc.). It does not include real property, which is governed by § 3-6-4.

UNCLAIMED, LOST AND CONFISCATED PROPERTY. All property used as evidence in the courts and remaining unclaimed after final disposition, property seized by a peace officer as being used unlawfully, and all property coming into the hands of any city officer or employee as lost or unclaimed. (Ord. 08-1137, passed 9-22-2008)

§ 3-6-2 Property administrator.

The Procurement Manager, as appointed by the City Manager, shall serve as the Property Administrator for the City and shall be primarily responsible for all property, real or personal, belonging to the City. The Procurement Manager may designate another employee, or employees, of the City as Property Administrator. The real estate coordinator, and other real estate staff, will coordinate and advise the Property Administrator of all real estate transactions for the City. (Ord. 08-1137, passed 9-22-2008)

§ 3-6-3 Surplus property management rules.

The Procurement Manager shall adopt rules governing:

(A) The transfer of surplus property and operation of the surplus property program.

(B) The sale or disposal of surplus, unclaimed, and seized property by public auction, competitive formal and informal bid, electronic, or other appropriate method.

(C) The trade-in of surplus property for purchase of new equipment. (Ord. 08-1137, passed 9-22-2008)

§ 3-6-4 Disposition of real or personal property.

Any disposition of real or personal property or improvements thereto may be made in accordance with rules adopted by the Procurement Manager, or otherwise in accordance with an approved method as determined by City Council, except that firearms and police canines shall be disposed of in accordance with Article 4-4. (Ord. 08-1137, passed 9-22-2008)

§ 3-6-5 Disposition of abandoned or unclaimed property.

The disposition of all property coming into the possession of the Police Department, not purchased with city funds, shall be disposed of in accordance with Article 4-4, including but not limited to evidence, seized, lost, confiscated, abandoned, and unclaimed property.

Exhibit B
AMENDMENT TO Articles 3-4, 3-5 and 3-6
OF GOODYEAR CITY CODE
(Redlined Version)

Article 3-4
GENERAL PROCUREMENT PROVISIONS

Sections:

3-4-1	**Applicability.**
3-4-2	**Supplementary general principles of law applicable.**
3-4-3	**Definitions.**
3-4-4	**Definitions – Electronic bidding.**
3-4-5	**Authority of the procurement manager.**
3-4-6	**Delegation of authority by the procurement manager.**
3-4-7	**Authority to contract for certain professional services; Continuity of services.**
3-4-8	**Procurements involving a prescribed amount.**
3-4-9	**Cooperative procurement.**
3-4-10	**Compliance with federal requirements.**
3-4-11	**On-line solicitations.**
3-4-12	**Contract clauses.**
3-4-13	**Change order.**
3-4-14	**Contracts in the best interest of the City.**
3-4-15	**~~Long~~ Tterm of contracts.**
3-4-16	**Rules for protesting solicitations and contract awards.**
3-4-17	**Rules for suspension and debarment of contractors.**
3-4-18	**Debarment and suspension of contractors.**
3-4-19	**Appeal.**
3-4-20	**Violation; Penalty; Enforcement authority.**

§ 3-4-1 Applicability.

(A) Articles 3-4, 3-5, and 3-6 comprise the City's procurement code, and the use of the term "Article" in the City's procurement code will include Articles 3-4, 3-5, and 3-6.

(B) The purpose of this article is to provide for oversight, transparency, accountability, and good stewardship in the use of city resources. This article shall govern the purchase of any goods or services for or on behalf of the City, including, but not limited to, the purchase of equipment, material, supplies, services, and public improvements.

(C) Except as otherwise provided, t~~T~~his article applies to all expenditures of public monies irrespective of their source, including federal assistance monies to this City, for the purchase of materials, goods, and services, under any contract. A~~by the City, and a~~ll expenditures shall be made with prior City Council approval. Prior Council approval exists when the expenditure has been provided for in the current budget as adopted and the funds are available without limitation or restriction, or Council may designate prior approval by way of resolution as provided for in § 3-4-8. This article also applies to the disposal of city materials.

(D) This article does not apply to:

(1) Grants, as defined in this article;

(2) Contracts or payments between the City and other governments, except as provided in § 3-4-9;

(3) Public utility purchases, including, but not limited to water, power, and related services;

(4) Development agreements, as defined in Arizona Revised Statutes (A.R.S.) Section 9-500.05, as amended;

(5) Contracts or arrangements for testimony relating to an existing or probable judicial proceeding in which the City is or may become a party;

(6) Agreements negotiated by legal counsel representing the City in settlement of litigation or threatened litigation are exempt from the provisions of this article, except as may be provided in § 3-4-7;

(7) Contracts for special investigative services for law enforcement purposes;

(8) Contracts for the purchase or sale of real property and ancillary services related thereto, such as title insurance, appraisals, or environmental assessments to the extent that they are negotiated in connection with a contract for purchase or sale of real property;

(9) Debt repayment obligations previously approved by City Council.

(10) Contracts for professional services as defined in § 3-4-3, except as may be provided in § 3-4-7.

(E) Nothing in this article shall prevent the City from complying with the terms and conditions of any grant, gift, bequest, or cooperative agreement. ~~either grants as defined in this article, or contracts between the City and other governments, except as provided in § 3-4-9.~~

~~(E) The provisions of this article are not applicable to contracts or arrangements for testimony relating to an existing or probable judicial proceeding in which the City is or may become a party; to contracts for special investigative services for law enforcement purposes; or to contracts for professional services as defined in § 3-4-3, except as may be provided in § 3-4-7.~~

~~(F) Agreements negotiated by legal counsel representing the City in settlement of litigation or threatened litigation are exempt from the provisions of this chapter, except as may be provided in § 3-4-7.~~ (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2501 with changes~~

§ 3-4-2 Supplementary general principles of law applicable.

Unless displaced by the particular provisions of this article, the principles of law and equity, the common law of contracts as applied in the City and law relative to agency, fraud, misrepresentation, duress, coercion and mistake supplement the provisions of this article. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2504, with changes~~

§ 3-4-3 Definitions.

In t~~T~~his article, ~~includes these definitions, definitions for online bidding in § 3-4-4, and definitions for source selection under § 3-5-1. U~~unless the context otherwise requires:

AFFILIATE. Any person effectively controlling or controlled by another or associated with others under common ownership or control.

AGGREGATE DOLLAR AMOUNT. Purchase price, including taxes and delivery charges, for the term of the contract and accounting for all allowable extensions and options.

ALTERNATE PROJECT DELIVERY METHODS. Design build, construction management at-risk, and job-order-contracting construction services.

AMENDMENT. Any written alteration to the ~~in the terms and conditions of any~~ contract, accomplished by mutual action of the parties and signed by the Procurement Manager~~to the contract,~~ or by unilateral action as permitted by the terms of the contract, that authorizes a change in scope, quantities, items, pricing, schedule, or term.

ARCHITECT SERVICES. Those professional architect services that are within the scope of architectural practice as provided in A.R.S. Title 32, Chapter 1.

AWARD. A determination by the City that it is entering into a contract with one or more offerors.

BID. ~~An offer in~~ The response submitted by a bidder to an Invitation for Bids (IFB)~~solicitation~~.

BIDDER. A supplier who submits a bid in response to an Invitation for Bids (IFB) or other formal solicitation type in which price is the primary factor in the evaluation process for award determination.~~Has the same definition as that of OFFEROR.~~

BRAND NAME ~~OR EQUAL SPECIFICATION~~. A name, term, symbol, design, or any combination thereof used in specifications to describe a product by a unique identifier specific to a particular seller or manufacturer that distinguishes it from its competition.~~A written description that uses one or more manufacturers' product name or catalog item, to describe the standard of quality, performance, and other characteristics that meet state requirements and provides for submission of equivalent products or services.~~

BRAND NAME ~~SPECIFICATION~~OR EQUIVALENT. One or more manufacturers' brand names, with identifying model numbers, used in a specification to invoke certain quality, performance, and other salient characteristics needed to meet solicitation requirements~~A written description limited to a list of one or more items by manufacturers' product name or catalog item to~~

~~describe the standard of quality, performance, and other characteristics that meet state requirements~~.

BUSINESS. Any corporation, partnership, individual, sole proprietorship, joint stock company, joint venture, or other private legal entity.

CHANGE ORDER. A written ~~order~~ modification or amendment to a contract, which is signed by the Procurement Manager ~~and which directs the contractor to make changes that Procurement Manager determines is in the best interests of the City~~.

CITY. The City of Goodyear.

COMPETITIVE RANGE. The group of responsible proposers chosen for additional discussions and negotiations based on an evaluation of their proposals, which are determined to be responsive and ~~range determined on the basis of the criteria stated in the solicitation and shall include all offers that~~ have a reasonable chance of being selected for an award.

CONSTRUCTION.

(1) The process of building, altering, repairing, improving, or demolishing any public structure or building or other public improvements of any kind to any public real property.

(2) Does not include:

(a) The routine operation, routine repair or routine maintenance of existing facilities, structures, buildings, or real property.

(b) The investigation, characterization, restoration, or remediation due to an environmental issue of existing facilities, structures, buildings, or real property.

CONSTRUCTION-MANAGER-AT-RISK. A project delivery method in which:

(1) There is a separate contract for design services and a separate contract for construction services, except that instead of a single contract for construction services, the City may elect separate contracts for preconstruction services during the design phase, for construction during the construction phase, and for any other construction services.

(2) The contract for construction services may be entered into at the same time as the contract for design services or at a later time.

(3) Design and construction of the project may be in sequential phases or concurrent phases and construction of some phases commencing before the entire design is complete.

(4) Finance services, maintenance services, operations services, preconstruction services and other related services may be included.

CONSTRUCTION SERVICES. Either of the following for construction-manager-at-risk, design build and job-order-contracting project delivery methods:

(1) Construction, excluding services, through the construction-manager-at-risk or job-order-contracting project delivery methods.

(2) A combination of construction and, as elected by the City ~~department~~, one or more related services, such as finance services, maintenance services, operations services, design

services and preconstruction services, as those services are authorized in the definitions of construction-manager-at-risk, design build or job-order-contracting in this section.

CONTRACT. All types of city agreements, regardless of what they may be called, for the procurement of materials, services, construction, or the disposal of materials.

CONTRACT MODIFICATION. Any written alteration in the specifications, delivery point, frequency of delivery, period of performance, price, quantity, terms, and conditions~~,~~ or other provisions of any contract, accomplished by mutual action of the parties to the contract.

CONTRACTOR. Any individual or business having a contract with the City.

COOPERATIVE (PROCUREMENT) PURCHASING.

(1) The action taken when two or more entities combine their requirements to obtain the advantages of volume purchases, including administrative savings and other benefits.

~~(1)~~(2) A variety of arrangements, whereby two or more public procurement entities purchase from the same supplier or multiple suppliers using a single solicitation. Cooperative procurement efforts may result in contracts that other entities may "piggyback".

COST OR PRICING DATA. Factual information about the actual or estimated cost of labor, material, overhead, and other cost elements that have been incurred or will be incurred by the contractor or offeror in performing the contract.

COST PLUS A PERCENTAGE OF COST CONTRACT. An agreement in which the contractor is provided a specified percentage profit over and above the actual costs. This pricing method is generally prohibited, or at least discouraged, because it provides an incentive for the contractor to increase, rather than decrease, costs.~~The parties to a contract agree that the fee will be a predetermined percentage of the cost of work performed and the contract does not limit the cost and fee before authorization of performance.~~

COST REIMBURSEMENT CONTRACT. A contract under which a contractor is reimbursed for costs which are reasonable, allowable, and allocable in accordance with the contract terms and the provisions of this article, and paid a fee, if provided for in the contract.

DATA. Documented information, regardless of form or characteristic.

DAY. A calendar day, unless otherwise specified in the solicitation or contract.

DEBARMENT. An action taken by the Procurement Manager that prohibits a person from participating in the City's procurement process.

DELIVERABLES. The actual contractual work product as defined in the statement of work; the desired goods or services described in a statement of requirement, specifications, scope of work, or other similar solicitation component to be provided under the contract.

DEPARTMENT. A subdivision or unit within the City as set forth in its organizational chart.

DESIGN BID BUILD. A project delivery method in which:

(1) There is a sequential award of two separate contracts.

(2) The first contract is for design services.

(3) The second contract is for construction.

(4) Design and construction of the project are in sequential phases.

(5) Finance services, maintenance services and operations services are not included.

DESIGN BUILD. A project delivery method in which:

(1) There is a single contract for design services and construction services, ~~.~~except that instead of a single contract for design services and construction services, the City may elect separate contracts for preconstruction services and design services during the design phase, for construction and design services during the construction phase and for any other construction services.

(2) Design and construction of the project may be in sequential phases or concurrent phases~~.~~ and construction of some phases commencing before the entire design is complete.

(3) Finance services, maintenance services, operations services, preconstruction services and other related services may be included.

DESIGN REQUIREMENTS.

(1) Means at a minimum the City ~~department~~'s written description of the project or service to be procured, including:

(a) The required features, functions, characteristics, qualities, and properties.

(b) The anticipated schedule, including start, duration, and completion.

(c) The estimated budgets applicable to the specific procurement for design and construction and, if applicable, for operation and maintenance.

(2) May include:

(a) Drawings and other documents illustrating the scale and relationship of the features, functions and characteristics of the project, which shall all be prepared by an architect or engineer, as appropriate, who is registered pursuant to A.R.S. § 32-121.

(b) Additional design information or documents that the City elects to include.

DESIGN SERVICES. Architect services, engineer services or landscape architect services.

DESIGN PROFESSIONAL. An individual or firm that is registered by the state board of technical registration pursuant to A.R.S. § 32-121 to practice architecture, engineering, geology, landscape architecture or land surveying or any combination of those professions and persons employed by the registered individual or firm.

DESIGNEE. A duly authorized representative of the Procurement Manager.

ELIGIBLE PROCUREMENT UNIT. A local public procurement unit, any other state, any agency of the United States, or a nonprofit educational or public health institution that is eligible under a cooperative agreement to use City contracts.

E-PROCUREMENT SYSTEM. The City's official electronic procurement system as authorized by the Procurement Manager.

ENGINEER SERVICES. Those professional engineer services that are within the scope of engineering practice as provided in A.R.S. Title 32, Chapter 1.

FINANCE SERVICES. Financing for a construction services project.

GENERAL SERVICES ADMINISTRATION CONTRACT. Contracts awarded by the United States government general services administration.

GRANT.

(1) A transfer of federal government funds to state or local governments to support or stimulate programs authorized by federal or state laws in order to accomplish objectives that are locally defined and managed under a broad federal or state program.

(2) The furnishing of assistance by a federal, state, county, or city governmental jurisdiction, whether financial or otherwise, to any person to support a program authorized by law; does not include an award whose primary purpose is to procure supplies, services, or construction.

~~The furnishing of financial or other assistance, including state funds or federal grant funds, by any city department to any person for the purpose of supporting or stimulating educational, cultural, social or economic quality of life.~~

INTERESTED PARTY. An offeror or prospective offeror whose economic interest is affected substantially and directly by issuance of a solicitation, an award or loss of an award. Whether an offeror or prospective offeror has an economic interest depends upon the circumstances of each case.

JOB-ORDER-CONTRACTING. A project delivery method in which:

(1) The contract is a requirements contract for indefinite quantities of construction.

(2) The construction to be performed is specified in job orders issued during the contract.

(3) Finance services, maintenance services, operations services, preconstruction services, design services and other related services may be included.

LANDSCAPE ARCHITECT SERVICES. Those professional landscape architect services that are within the scope of landscape architectural practice as provided in A.R.S. Title 32, Chapter 1.

LOCAL PUBLIC PROCUREMENT UNIT. Any political subdivision, any agency, board, department or other instrumentality of such political subdivision and any nonprofit corporation created solely for the purpose of administering a cooperative purchase, as defined in A.R.S. §41-2631. ~~under this article.~~

MAINTENANCE SERVICES. Routine maintenance, repair, and replacement of existing facilities, structures, buildings, or real property.

MATERIALS.

(1) All property, including equipment, supplies, printing, and insurance.

(2) Does not include land, a permanent interest in land or real property, or leases of property.

MAY. Denotes the permissive in a contract clause or specification.

MINOR IRREGULARITY OR INFORMALITY. A variation from the solicitation that does not affect the price of the contract or does not give an offeror an advantage or benefit not enjoyed by the other offerors or does not adversely impact the interests of the contracting party.

MUST. Denotes the imperative in contract clauses or specifications/statements of work. Also indicates a legal condition required to occur before a prescribed consequence will happen.

MULTIPLE AWARD. Contracts awarded to more than one supplier for comparable supplies and services.

NEGOTIATION. An exchange or series of exchanges between the City and an offeror or contractor in which both parties intend to revise, in writing, an offer or contract, unless revision is specifically prohibited by these rules or statutes.

NOTICE OF INTENT TO AWARD. A written notice publicly posted prior to announcing the award of a contract to notify interested parties of the intended award.~~***NOT SUSCEPTIBLE FOR AWARD.*** An offer in response to a solicitation fails to meet one or more of the mandatory requirements of the solicitation, fails to comply with any required criteria specifically mentioned in the solicitation, or that the offer is not within the competitive range in comparison to other offers that meet the criteria set forth in the solicitation.~~

OFFER. A response to a solicitation that, if accepted, would bind the offeror to honor what was submitted.

OFFEROR. A generic term that refers to an individual or business that submits an offer in response~~A person that responds~~ to a solicitation.

OPERATIONS SERVICES. Routine operation of existing facilities, structures, buildings, or real property.

OWNER. The City of Goodyear.

PERSON. Any corporation, business, individual, union, committee, club, other organization, or group of individuals.

PIGGYBACK (PIGGYBACK COOPERATIVES). Form of intergovernmental cooperative purchasing in which an entity will be given the pricing and terms of a contract entered into by another entity. Generally, the other entity will competitively award a contract that will include language allowing for other entities to use the contract to their advantage in terms of pricing, thereby gaining economies of scale that they normally would not receive if they competed on their own.

PRECONSTRUCTION SERVICES. ~~Construction advice~~Services and other activities during the design phase.

~~***PRICE DATA***. Information concerning prices, including profit, for materials, services, or construction substantially similar to the materials, services, or construction to be procured under a contract or subcontract. In this definition, PRICES refers to offered selling prices, historical selling prices, or current selling prices of the items to be purchased.~~

PROCUREMENT.

(1) Buying, purchasing, renting, leasing or otherwise acquiring any materials, goods, services, construction, or construction services.

(2) Includes all functions that pertain to obtaining any material, services, construction, or construction services, including description of requirements, selection and solicitation of sources, preparation and award of contract, and all phases of contract administration.

PROCUREMENT CARD. A credit card ~~or debit card~~ issued to ~~the City~~an authorized city employee that enables and facilitates online or electronic purchases directly from suppliers within pre-approved authority levels and spending limits~~transactions made in accordance with this article~~.

PROCUREMENT FILE. A file containing documents relating to the acquisition and purchase of materials, supplies, services, construction, or construction services. ~~The official records file of the Procurement Manager.~~

PROCUREMENT MANAGER. The individual designated by the City Manager for the City who is thereby duly authorized as directed to enter into, approve, execute, or administer contracts; make written determinations on contracts, bids, or purchases; and to serve as the property administrator. Written determinations required by this article shall be retained in the appropriate official records file of the Procurement Manager.

~~***PROCUREMENT REQUEST***. The document that initiates a procurement.~~

PROFESSIONAL SERVICES. Those services~~, as determined by the Procurement Manager,~~ that require specialized knowledge, education, or skill, and where the qualifications of the person(s) rendering services are of primary importance. Professional services include, but are not limited to, appraisers, land surveyors, attorneys, architects, engineers, psychologist, physicians, health practitioners, auditors, financial advisors, systems and software analysts, consultants, and other technical registrants as defined in A.R.S. Title 32. ~~and training (often through long and intensive academic preparation) or in depth experience in a particular field or discipline, and may include licensing by a professional board. Professional services are professional, technical, or consultant services predominantly intellectual in nature. They may include analysis, evaluation, predicting, planning, or recommendation and usually result in the production of a report or completion of a task services.~~

PROPERTY. Assets with a useful life of more than one year.

PROPERTY TRANSFER FORM. A form submitted by the department requesting transfer of fixed assets between departments or transfer of property to or from the surplus property program.

PROPOSAL. An offer to provide goods or services.~~submitted in response to a solicitation.~~

PROSPECTIVE OFFEROR. A person that expresses an interest in a specific solicitation.

PUBLIC PROCUREMENT UNIT. The City, a state or an agency of the United States, or any local public procurement unit such as a city or county government.

PURCHASE ORDER. A purchaser's written document to a supplier, authorized by the Procurement Manager, formalizing all the terms and conditions of a proposed transaction, such

as a description of the requested items, cost of items being purchased, delivery schedule, terms of payment, and transportation.

PURCHASE REQUISITION. A written request authorizing the commencement of a purchasing transaction; typically, will include a description of the need and other information relative to the transaction. Submitted via eProcurement software.

QUOTATION. A statement of price, terms of sale, and description of goods or services offered by a supplier to a prospective purchaser; may be non-binding if solicited to obtain market information for planning purposes.

~~***RAW MATERIALS***. Goods, excluding equipment and machinery, purchased for use in manufacturing a product.~~

~~***RESPONSIBLE***. When used in connection with a bid or offer shall mean that the bidder or offeror is fully capable to meet all of the requirements of the solicitation and subsequent contract.~~

RESPONSIBLE BIDDER OR OFFEROR. A bidder or offeror who has (i) the capability to fully perform the contract requirements and (ii) the reliability that will ensure good faith performance.

~~***RESPONSIVE***. When used in connection with a bid or offer shall mean that the bid or offer fully conforms in all material respects to the solicitation and all of its requirements, including all form and substance.~~

RESPONSIVE BIDDER OR OFFEROR. A bidder or offeror who has submitted a bid or offer that fully conforms in all material respects to the solicitation and all of its requirements, including all form and substance.

RULES. A directive for conduct that is intended to provide regulations for implementing the requirements of this procurement code. In the event of a conflict, the code shall control over the rules, regulations, policies, or procedures.

SERVICES.

(1) The furnishing of labor, time or effort by a contractor or subcontractor which does not involve the delivery of a specific end product other than required reports and performance.

(2) Does not include employment agreements or collective bargaining agreements.

SHALL. Something is mandatory.

SINGLE-SOURCE. A procurement whereby a purchase is directed to one source because of standardization, warranty, or other factors even though other competitive sources may be available.

SITE. The land or premises on which the project is located.

SOLE-SOURCE. A non-competitive method of procurement used when ~~whereby~~ only one ~~vendor or~~ supplier possesses the unique ability or capability to meet the particular requirements of the entity or when only one supplier is practicably available.~~solicitation.~~

SOLICITATION. A~~n~~ Request for Quotations, an I~~i~~nvitation for B~~b~~ids, ~~a request for technical offers,~~ a R~~r~~equest for P~~p~~roposals, ~~a request for quotations,~~ a R~~r~~equest for Q~~q~~ualifications, or any other invitation or request issued by the City to invite a person to submit an offer.

SOURCE SELECTION METHOD. A purchasing method, ~~process that is~~ approved by the Procurement Manager, ~~-~~by which goods, services, or construction may be obtained. Such methods may include emergency purchases, competitive bidding, competitive negotiation, intergovernmental cooperative agreements, or purchases via credit card.~~and used to select a person to enter into a contract for procurement.~~

SPLIT PURCHASE. Separating a requirement that exceeds a single purchase limit or threshold into two or more buys as a means of circumventing a purchase limit or threshold. Split purchases are prohibited.

STATEMENT OF QUALIFICATIONS (SOQ). All documents submitted by a potential offeror in response to a request for qualifications.

SUBCONTRACTOR. A person who contracts to perform work or render service to a contractor or to another subcontractor as a part of a contract with the City.

SUPPLIER. A manufacturer, fabricator, distributor, or vendor having a direct contract with a contractor or subcontractor to furnish materials or equipment to be incorporated in the construction phase work by a contractor or subcontractor.

SURPLUS PROPERTY. Property no longer needed by City departments for their operations, obsolete property, property in poor or non-working condition, or property that is a by-product (e.g. scrap metal, used tires and oil, etc.). It does not include real property, which is governed by § 3-6-4.

SUSPENSION. An action taken by the Procurement Manager that temporarily disqualifies a person from participating in a city procurement process.

TRADE SECRET. Information, including a formula, pattern, device, compilation, program, method, technique, or process, that is the subject of reasonable efforts to maintain its secrecy and that derives independent economic value, actual or potential, as a result of not being generally known and not being readily ascertainable by public means. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. §§ 41-2503 and 41-2631 with changes.~~

§ 3-4-4 Definitions – Electronic bidding.

In this article, unless the context otherwise requires:

AUCTION. A public sale in which property or items are sold to the highest bidder. Online auctions are allowed as directed by the Procurement Manager.

INFORMATION SERVICES. Data processing, telecommunications and office systems technologies and services.

INTERNET. The international computer network of both federal and nonfederal interoperable packet switched data networks, including the graphical sub network called the world wide web.

ONLINE SOLICITATION. A procurement process in which the City receives vendors' bids or offers for goods, services, construction or information services electronically over the internet in a real time, competitive solicitation event.

REVERSE AUCTION. A procurement method in which offerors are invited to bid on specified goods or services through online bidding and real time electronic bidding. During an electronic bidding process, offerors' prices or relative ranking are available to competing offerors and offerors may modify their offer prices until the closing date and time. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-1671 with changes~~

§ 3-4-5 Authority of the procurement manager.

(A) The Procurement Manager shall serve as the central procurement authority and the Property Administrator for the City. The Procurement Manager shall be designated by the City Manager and will be duly authorized as directed to enter into, approve, execute, or administer contracts, and to make written determinations on contracts, bids, or purchases.

(B) The Procurement Manager may adopt rules, consistent with this article, governing the procurement and management of all materials, specifications, services, and construction to be procured by this City and the disposal of materials. Any prior approval that Council may establish by resolution as permitted by § 3-4-8 is still subject to this article and the rules established thereunder.

(C) Except as otherwise provided in this article, the Procurement Manager, in accordance with rules adopted under this article shall:

(1) Procure or supervise the procurement of all goods, services, and construction services needed by the City.

(2) Establish guidelines for the management of all inventories of materials belonging to the City.

(3) Sell, trade, or otherwise dispose of surplus property belonging to the City.

(4) Establish and maintain programs for the inspection, testing and acceptance of materials, services, and construction.

(5) Establish forms and procedures for use in all procurements.

(D) The Procurement Manager has the sole authority to debar or suspend a person from participating in city procurements. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2511 with changes~~

§ 3-4-6 Delegation of authority by the procurement manager.

The Procurement Manager may designate and delegate authority to qualified individuals of any city department. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2512 with changes~~

§ 3-4-7 Authority to contract for certain professional services; Continuity of services.

(A) Contracts for professional services as defined in § 3-4-3 or for services listed in ~~divisions~~ (B) ~~and (C)~~ of this section are not required to comply with the provisions of this article except as may be set forth in this section. Any contract for services that does not meet the definition of professional services under § 3-4-3, but for which services relate to a prior contractual relationship that permits a continuity of services for the City may be exempt from this article, subject to the written approval of the Procurement Manager.

(B) All contracts for the services of legal counsel, expert witnesses related to an existing or probable judicial proceeding in which the City is or may be a party, or for special investigative services shall be approved by the City Attorney ~~and the Procurement Manager~~.

(C) ~~The Finance Director shall approve city contracts for financial and compliance auditing services except if specific statutory authority is otherwise provided. The Finance Director shall ensure that these audits are conducted in accordance with generally accepted governmental auditing standards. An audit contract shall not be accepted until it has been approved by the Finance Director and the Procurement Manager.~~

~~(D)~~ Payment for any services, including those services described in ~~divisions~~ (A), and (B)~~, and (C)~~ of this section, procured under this article shall not be made unless pursuant to a written contract ~~for which a valid purchase order has been issued~~. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2513 with changes~~

§ 3-4-8 Procurements involving a prescribed amount.

(A) All City expenditures must be approved by Council prior to purchase. Prior approval exists for items that are included~~s items that are~~ in the current budget as adopted by Council, and Council may designate an amount, by way of resolution, authorizing the City Manager to approve non-budgeted expenditures. Council may also designate an amount, by way of resolution, ~~of an amount~~ above which ~~a contract for~~ a budgeted expenditure must be approved, or specifically identified in the adoption of the budget to be considered approved, by Council before a contract, purchase order, change order, or a notice to proceed may be issued. Prior approval of expenditures does not waive the application of the provisions of this article. The expenditure must still meet the requirements of this article, as applicable.

(B) Any procurement less than ~~$50,000~~ one hundred thousand dollars ($100,000.00) will be procured in accordance with the rules established by the Procurement Manager.

(C) Procurement requirements shall not be artificially divided or fragmented so as to constitute a purchase under this section and to circumvent the source selection procedures required ~~by~~ under Article 3-5~~§§ 3-5-9 or 3-5-10 or be artificially combined to circumvent this section~~. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2535 with changes~~

§ 3-4-9 Cooperative procurement.

(A) Pursuant to this article the City Council hereby approves and authorizes the Procurement Manager to enter into cooperative purchasing agreements and piggyback cooperatives deemed by the Procurement Manager to be in the best interest of the City. The City Council reserves the right to revoke its approval and authorization for an individual agreement.

(B) The Procurement Manager on behalf of the City may participate in, sponsor, conduct, or administer a cooperative purchasing agreement for the procurement of any materials, services, or construction with one or more public procurement units in accordance with an agreement entered into between the participants. The Procurement Manager will make a written recommendation that such an agreement is allowable and in the best interest of the City. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2632 with changes~~

§ 3-4-10 Compliance with federal requirements.

If a procurement involves the expenditure of federal assistance or monies, the Procurement Manager shall comply with federal law and authorized regulations which are mandatory and which may not be reflected in this article. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2637 with changes~~

§ 3-4-11 Online solicitations.

(A) If the Procurement Manager determines that electronic, online solicitation is advantageous, the Procurement Manager may use online solicitations to obtain bids or offers electronically for the purchase of goods, services, construction, and information services.

(B) An online solicitation must designate an opening date and time.

(C) The closing date and time for an online solicitation may be fixed or remain open depending on the structure of the item being solicited online. Information regarding the closing date and time must be included in the solicitation. At the opening date and time, the City must begin accepting online bids or offers and must continue accepting bids or offers until the solicitation is officially closed. The online system must provide for security equal to competitive sealed solicitations.

(D) All online bids or offers must be posted electronically and updated on a real time basis.

(E) The Procurement Manager may:

(1) Require vendors to register before the opening date and time and, as part of that registration, require vendors to agree to any terms, conditions, or other requirements of the solicitation.

(2) Pre-qualify vendors and allow only those vendors who are pre-qualified to submit bids or offers online.

(F) Provisions regarding competitive sealed solicitations (§§ 3-5-9 and 3-5-10) apply to solicitations issued pursuant to this section, except for the means of advertising. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2572 with changes~~

§ 3-4-12 Contract clauses.

(A) The Procurement Manager may permit or require the inclusion of clauses providing for appropriate remedies, adjustments in prices, time of performance or other contract provisions.

(B) The Procurement Manager may modify clauses for inclusion in any City contract, provided that any variations are supported by a written determination that states the circumstances justifying the variation and provided that notice of any material variation is stated in the solicitation.

(C) All contract clauses shall be approved by the City Attorney's office and shall be consistent with the provisions of this article and the regulations issued pursuant to this article. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2585 with changes~~

§ 3-4-13 Change order.

A change order exceeding an amount or percentage established by regulation may be executed only after the Procurement Manager determines in writing that the change order is advantageous to the City. ~~No change order shall exceed that amount established by § 3-4-8 without prior Council approval.~~ (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2552 with changes~~

§ 3-4-14 Contracts in the best interest of the City.

Any type of contract which will promote the best interests of the City may be used with the following limitations. A cost plus a percentage of cost contract is prohibited~~, and a cost reimbursement contract may be used only if a determination is made in writing that such contract is likely to be less costly to the City than any other type or that it is impracticable to obtain the materials, services or construction required except under such a contract.~~. All

determinations regarding the best interest of the City shall be deemed by the Procurement Manager. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2544 with changes~~

§ 3-4-15 ~~Long~~ Term of Contracts.

(A) Unless otherwise provided by law, a contract for ~~materials~~goods, ~~or~~ services, or job-order-contracting construction services may be entered into for a period of time up to five years ~~and a contract for job order contracting construction services may also be entered into for a period of time up to five years~~, as deemed to be in the best interest of the City by the Procurement Manager, if the term of the contract and conditions of renewal or extension, if any, are included in the solicitation and monies are available for the first fiscal period at the time of contracting. A contract may be entered into for materials or services for a period of time exceeding five years if, under rules adopted pursuant to this article, the Procurement Manager determines in writing that such a contract would be advantageous to the City. Payment and performance obligations for succeeding fiscal periods are subject to the availability and appropriation of monies.

(B) Before the use of a multi-term contract, it shall be determined in writing that:

(1) Estimated requirements cover the period of the contract and are reasonable and continuing.

(2) Such a contract will serve the best interests of the City by encouraging effective competition or otherwise promoting economies in city procurement.

(C) If monies are not appropriated or otherwise made available to support continuation of performance in a subsequent fiscal period, the contract shall be canceled, and the contractor may only be reimbursed for the reasonable value of any nonrecurring costs incurred but not amortized in the price of the goods or services delivered under the contract or which are otherwise not recoverable. The cost of cancelation may be paid from any appropriations available for such purposes. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2546 with changes~~

§ 3-4-16 Rules for protesting solicitations and contract awards.

The Procurement Manager shall include in the rules authorized by § 3-4-5, procedures providing for the expeditious administrative review of all solicitation protests and contract award claims or controversies.

§ 3-4-17 Rules for suspension and debarment of contractors.

The rules adopted by the Procurement Manager pursuant to §§ 3-4-5 and 3-4-18 shall include hearing procedures for the suspension and debarment of contractors. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2611 with changes~~

§ 3-4-18 Debarment and suspension of contractors.

(A) All contracts for services involving minors shall require background checks for all employees, or that contractor shall be placed on a suspension list until such time as all employees successfully meet this requirement. If there are reasonable grounds for debarment, the rules of the Procurement Manager may provide for the suspension of any person. A debarment shall not exceed three years.

(B) The causes for debarment or suspension include the following:

(1) Conviction of any person or any subsidiary or affiliate of any person for commission of a criminal offense arising out of obtaining or attempting to obtain a public or private contract or subcontract, or in the performance of such contract or subcontract.

(2) Conviction of any person or any subsidiary or affiliate of any person under any statute of the federal, state, or local government for embezzlement, theft, fraudulent schemes and artifices, fraudulent schemes, and practices, bid rigging, perjury, forgery, bribery, falsification, or destruction of records, receiving stolen property or any other offense indicating a lack of business integrity or business honesty which affects responsibility as a city contractor.

(3) Conviction or civil judgment finding a violation by any person or any subsidiary or affiliate of any person under state or federal antitrust statutes.

(4) Violations of city contract provisions of a character which are deemed to be so serious as to justify debarment action.

(5) Any other cause deemed to affect responsibility as a city contractor, including suspension or debarment of such person or any subsidiary or affiliate of such person by another governmental entity for any cause listed in rules of the Procurement Manager.

(C) A written determination to debar or suspend shall be issued pursuant to the rules of the Procurement Manager which shall:

(1) State the reasons for the action taken.

(2) Inform any debarred or suspended person involved of the right to administrative review as provided in this article.

(D) A copy of the decision under ~~division~~ (C) of this section shall be ~~mailed or otherwise~~ furnished to any debarred or suspended person and to any intervening party, and a copy retained in the records of the City Clerk. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2613 with changes~~

§ 3-4-19 Appeal.

Any final decision on a protest, suspension, or debarment by the Procurement Manager under this article may be appealed ~~to the City Manager or his designee~~. A copy of the appeal must be provided to the Procurement Manager and the City Attorney. (Ord. 08-1137, passed 9-22-2008)

~~Statutory reference:~~ ~~A.R.S. § 41-2614 with changes~~

§ 3-4-20 Violation; Penalty; Enforcement authority.

A person who evaluates bids or proposals shall sign a statement before reviewing bids or proposals that the person has no interest in the procurement other than that disclosed and will have no contact with any representative of any vendor related to the ~~particular~~ procurement during evaluation of bids or proposals. The person shall disclose on the statement any contact unrelated to the pending procurement that the person may need to have with a representative of a competing vendor and any contact with a representative of a competing vendor during evaluation of bids or proposals. A person who evaluates bids or proposals who fails to disclose contact with a representative of a competing vendor or who fails to provide accurate information on the statement is subject to a civil penalty up to $5,000, in addition to any other penalty available pursuant to § 1-8-1 of this Code. The Procurement Manager is authorized to initiate enforcement actions pursuant to the provisions of this section. (Ord. 08-1137, passed 9-22-2008)

~~Statutory reference:~~ ~~A.R.S. § 41-2616 with changes~~

Article 3-5
SOURCE SELECTION

Sections:

3-5-1 Definitions.
3-5-2 Methods of source selection.
3-5-3 Pre-qualification of contractors.
3-5-4 Bid and contract security.
3-5-5 Right to inspect plant.
3-5-6 Right to audit records.
3-5-7 Reporting of anti-competitive practices.
3-5-8 Retention of procurement records.
3-5-9 Competitive sealed bidding.
3-5-10 Competitive sealed proposals.
3-5-11 Cancellation of invitation for bids or requests for proposals.
3-5-12 Responsibility of bidders and offerors.
3-5-13 Sole-source and single-source procurement.
3-5-14 Emergency procurements.
3-5-15 Competition impracticable procurement.
3-5-16 Request for information.
3-5-17 Demonstration projects.
3-5-18 Unsolicited proposals.
3-5-19 General services administration (gsa) contracts.
3-5-20 Procurement of construction and specified professional services.
3-5-21 Cost principles rules.
~~**3-5-22 Approval of accounting system.**~~
3-5-2223 Cost or pricing data.

§ 3-5-1 Definitions.

In this article, unless the context otherwise requires:

BIDDER PREQUALIFICATION. Determining in accordance with rules adopted pursuant to this article that a prospective bidder or offeror satisfies the criteria for being included on the bidder's list.

DEMONSTRATION PROJECT. A project in which a vendor supplies a service or material to the City for which the City does not pay but for which the City may be obligated to provide routine support such as utility cost and operating personnel.

ESTABLISHED CATALOG PRICE. The price included in a catalog, price list, schedule or other form that:

(1) Is regularly maintained by a manufacturer, distributor or contractor.

(2) Is either published or otherwise available for inspection by customers.

(3) States prices at which sales are currently or were last made to a significant number of any category of buyers or buyers constituting the general buying public for the materials or services involved.

INVITATION FOR BIDS (IFB). A procurement method used to solicit competitive sealed bid responses, sometimes called formal bids, when price is the basis for award, in accordance with the procedures prescribed in § 3-5-9.

MULTI-STEP SEALED BIDDING. A method of source selection involving two competitive steps that combine the elements of both Invitation for Bids and Request for Proposals. The first step may require the submission of technical and price proposals, with only the technical proposals being evaluated and scored. The second step involves opening the price proposals of those firms that have achieved the highest technical scores and are in competitive range.~~two phase process consisting of a technical first phase composed of one or more steps in which bidders submit un priced technical offers to be evaluated by the City and a second phase in which those bidders whose technical offers are determined to be acceptable during the first phase have their price bids considered.~~

PURCHASE DESCRIPTION. The words used in a solicitation to describe the materials, services or construction for purchase and includes specifications attached to, or made a part of, the solicitation.

REQUEST FOR INFORMATION. A non-binding method whereby a jurisdiction publishes via newspaper, internet, or direct mail its need for information about the availability in the commercial marketplace of materials or services from interested parties for an upcoming solicitation.~~All documents issued to vendors for the sole purpose of seeking information about the availability in the commercial marketplace of materials or services.~~

REQUEST FOR PROPOSALS. All documents, whether attached or incorporated by reference, which are used for soliciting proposals in accordance with procedures prescribed in § 3-5-10.

REQUEST FOR PROPOSALS (RFP). All documents, whether attached or incorporated by reference, which are issued by a procurement entity to solicit proposals from potential providers (proposers) for goods and services in accordance with procedures prescribed in § 3-5-10. Price is usually not a primary evaluation factor. An RFP provides for the negotiation of all terms, including price, prior to contract award. May include a provision for the negotiation of best and final offers. May be a single-step or multistep process.

REQUEST FOR QUALIFICATIONS (RFQu). All documents, whether attached or incorporated by reference, which are issued by a procurement entity to solicit statements of the qualifications of potential submitters for professional or construction services that will be evaluated solely upon the basis of the qualifications of the submitters.

REQUEST FOR QUOTATIONS (RFQ). All documents, whether attached or incorporated by reference, which are issued by a procurement entity to solicit quotations in accordance with procedures prescribed in § 3-4-8.

~~***REQUEST FOR QUALIFICATIONS***. All documents which are used for obtaining statements of qualifications from bidders prior to issuing a solicitation.~~

~~***REQUEST FOR QUOTATIONS***. All documents which are used for soliciting price quotes for small amount purchases with procedures prescribed § 3-4-8.~~

SPECIFICATION. Any description of the physical or functional characteristics, or of the nature of a material, service or construction item. Specification may include a description of any requirement for inspecting, testing or preparing a material, service or construction item for delivery. All specifications, including those prepared by architects, engineers, consultants and others for public contracts, shall seek to promote overall economy for the purposes intended and encourage competition in satisfying this City's needs and shall not be unduly restrictive.

UNSOLICITED PROPOSAL. A written proposal that is submitted on the initiative of the offeror or for the purposes of obtaining a contract with the City and that is not in response to a formal or informal request from the City. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2531 with changes~~

§ 3-5-2 Methods of source selection.

All city contracts shall be awarded by competitive sealed solicitations, including online solicitations, as provided in §§ 3-5-9 or 3-5-10, or as otherwise provided in this procurement code.~~§§ 3-5-10, 3-5-13, 3-5-14, 3-5-15, and 3-5-17 through 3-5-20.~~ (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2532 with changes~~

§ 3-5-3 Pre-qualification of contractors.

Prospective contractors may be pre-qualified for particular types of materials, goods, services, and construction. Prospective contractors have a continuing duty to provide the Procurement Manager with information on any material change affecting the basis of pre-qualification. Solicitation mailing lists of potential contractors shall include the pre-qualified contractors. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2541 with changes~~

§ 3-5-4 Bid and contract security.

The Procurement Manager may require, in accordance with rules adopted by the Procurement Manager, the submission of security to guarantee faithful bid and contract performance. In

determining the amount and type of security required for each contract, the Procurement Manager shall consider the nature of the performance and the need for future protection to the City. The requirement for security must be included in the invitation for bids or request for proposals. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2542 with changes~~

§ 3-5-5 Right to inspect plant.

The City may, at reasonable times, inspect the part of the plant or place of business of a contractor or any subcontractor which is related to the performance of any contract awarded, or to be awarded, by the City. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2547 with changes~~

§ 3-5-6 Right to audit records.

(A) The City may, at reasonable times and places, audit the books and records of any person who submits cost or pricing data as provided in § 3-5-23 to the extent that the books and records relate to the cost or pricing data. Any person who receives a contract, change order or contract modification for which cost, or pricing data is required shall maintain the books and records that relate to the cost or pricing data for five years after the completion of the contract.

(B) The City is entitled to audit the books and records of a contractor or any subcontractor conducting business with the City to the extent that the books and records relate to the performance of the contract or subcontract. The books and records shall be maintained by the contractor for a period of five years after the completion of the prime contract. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2549 with changes~~

§ 3-5-7 Reporting of anti-competitive practices.

If for any reason collusion or other anti-competitive practices are suspected among any bidders or offeror, a written summary of the relevant facts shall be transmitted to the Procurement Manager and the City Attorney. Anonymous reports may be considered if supported by verifiable facts. This section does not require an investigation by a law enforcement agency. The Procurement Manager or City Attorney may conduct such investigation as may be warranted. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2549 with changes~~

§ 3-5-8 Retention of procurement records.

All procurement records shall be retained and disposed of in accordance with records retention guidelines and schedules approved by the City Clerk's Office. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2550 with changes~~

§ 3-5-9 Competitive sealed bidding.

(A) An invitation for bids shall be issued and shall include a purchase description and all contractual terms and conditions applicable to the procurement.

(B) Adequate public notice of the invitation for bids shall be given a reasonable time before the date set forth in the invitation for the opening of bids, but not less than two weeks before bid opening date and time. The notice should include publication one or more times in a newspaper of general circulation, including circulation within the City. The notice may also be posted at a city approved site on a public network or by electronic notification to registered vendors.

(C) Bids shall be opened publicly at the time and place designated in the invitation for bids. The amount of each bid together with the name of each bidder shall be read, recorded, and published. The bid documents shall not be open for public inspection until after a contract is awarded. To the extent the bidder designates, and the City concurs, trade secrets or other proprietary data contained in the bid documents shall remain confidential in accordance with rules adopted by the Procurement Manager.

(D) Bids shall be received without alteration or correction, except as authorized in this article. Bids shall be evaluated based on the requirements set forth in the invitation for bids, including criteria to determine acceptability such as inspection, testing, quality, workmanship, delivery, and suitability for a particular purpose, as may be prescribed in rules adopted by the Procurement Manager. The invitation for bids shall set forth the evaluation criteria to be used, including the weighting of identified criteria. Evaluation criteria shall not be used for construction and no criteria may be used in bid evaluation that is not set forth in the invitation for bids.

(E) The correction or withdrawal of erroneous bids before or after bid opening, based on bid mistakes, may be permitted in accordance with rules adopted by the Procurement Manager. After bid opening, no corrections in bid prices or other provisions of bids prejudicial to the interest of the City or fair competition shall be permitted. Except as otherwise provided by rule, all decisions to permit the correction or withdrawal of bids, or to cancel awards or contracts based on bid mistakes, shall be supported by a written determination made by the Procurement Manager.

(F) The contract shall be awarded to the lowest responsible and responsive bidder whose bid conforms in all material respects to the requirements and criteria set forth in the invitation for bids. Except for procurement of construction, for purposes of determining the low bidder the Procurement Manager may consider the amount of applicable city business privilege tax and exclude that amount from the evaluation unless otherwise precluded by applicable law. If all

bids for a construction project exceed available monies as certified by the appropriate fiscal officer, and the low responsive and responsible bid does not exceed such monies by more than 5%, the Procurement Manager may, in situations in which time or economic considerations preclude re-solicitation of work of a reduced scope, negotiate an adjustment of the bid price, including changes in the bid requirements, with the low responsive and responsible bidder, to bring the bid within the amount of available monies.

(G) The multi-step sealed bidding method may be used if the Procurement Manager determines in writing that it is not practical to initially prepare a definitive purchase description which is suitable to permit an award based on competitive sealed bidding. An invitation for bids may be issued requesting the submission of technical offers to be followed by an invitation for bids limited to those bidders whose offers are determined to be technically acceptable under the criteria set forth in the first solicitation, except that the multi-step sealed bidding method may not be used for construction contracts. (Ord. 08-1137, passed 9-22-2008)

~~Statutory reference:~~ ~~A.R.S. § 41-2533 with changes~~

§ 3-5-10 Competitive sealed proposals.

(A) If the Procurement Manager determines in writing that the use of competitive sealed bidding is either not practicable or not advantageous to the City, a contract for materials or services may be entered into by competitive sealed proposals. This section does not apply to procurement of construction, construction services or specified professional services pursuant to § 3-5-20. Construction services shall be procured pursuant to §§ 3-5-14 or 3-5-20.

(B) Proposals shall be solicited through a request for proposals.

(C) Adequate public notice of the request for proposals shall be given a reasonable time before the date set forth in the request for proposals for the opening of proposals, but not less than two weeks before the solicitation opening date and time. The notice should include publication one or more times in a newspaper of general circulation, including circulation within the City. The notice may also be posted at a city approved site on a public network or by electronic notification to registered vendors.~~in the same manner as provided in § 3-5-9.~~

(D) Proposals shall be opened publicly at the time and place designated in the request for proposals. The name of each offeror and such other relevant information shall be publicly read and recorded in accordance with rules adopted by the Procurement Manager. All other information contained in the proposals shall be confidential until after contract award. Any trade secrets or other proprietary data designated by the offeror may or may not remain confidential in accordance with rules adopted by the Procurement Manager.

(E) The request for proposals shall state the relative importance of price and other evaluation factors. Specific numerical weighting is not required.

(F) As provided in the request for proposals, and under rules adopted by the Procurement Manager, discussions may be conducted with responsible offerors who submit proposals determined to be reasonably susceptible to being selected for award for the purpose of clarification to assure full understanding of the solicitation requirements and to permit revision

of offers. Offerors shall be accorded fair treatment with respect to any opportunity for discussion. Revisions may be permitted after submission and before award. If discussions are conducted, all offerors who have submitted proposals that are determined by the Procurement Manager to be in the competitive range shall be invited to submit a final proposal revision. In conducting discussions, there shall be no disclosure of any information derived from proposals submitted by competing offerors.

(G) The award shall be made to the responsible and responsive offeror whose proposal is determined in writing to be the most advantageous to the City, taking into consideration the evaluation factors set forth in the request for proposals. No other factors or criteria may be used in the evaluation. The amount of any applicable transaction privilege or use tax of the City, except as allowed by § 3-5-9(F) and applied to proposals, is not a factor in determining the most advantageous proposal. The contract file shall contain the basis on which the award is made. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2534 with changes~~

§ 3-5-11 Cancelation of invitation for bids or requests for proposals.

An invitation for bids, a request for proposals or other solicitation may be canceled or any or all bids or proposals may be rejected in whole or in part as may be specified in the solicitation if it is in the best interests of the City as determined by the Procurement Manager ~~and the evaluators~~. The reasons for the cancelation or rejection shall be made part of the contract file. The City Council may reject any bid that exceeds the prescribed amounts in § 3-4-8. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2539 with changes~~

§ 3-5-12 Responsibility of bidders and offerors.

(A) A written determination of non-responsibility of a bidder or offeror shall be made in accordance with rules adopted by the Procurement Manager. The unreasonable failure of a bidder or offeror to promptly supply information in connection with an inquiry with respect to responsibility shall be grounds for a determination of non-responsibility with respect to the bidder or offerors. A finding of non-responsibility shall not be construed as a violation of the rights of any person.

(B) Information furnished by a bidder or offeror pursuant to this section shall not be disclosed outside of the office of the Procurement Manager without prior written consent by the bidder or offeror except to law enforcement agencies or as otherwise required by applicable law. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2540 with changes~~

§ 3-5-13 Sole-source and single-source procurement.

A contract may be awarded for a material, good, service, or construction item without competition if the Procurement Manager determines in writing that there is a sole or single source for the required material, good, service, or construction item. The Procurement Manager may require the submission of cost or pricing data in connection with an award under this section. Sole-source or single--source procurement shall be avoided, except when no reasonable alternative sources exist. A written determination of the basis for the sole-source or single-source procurement shall be included in the procurement file. (Ord. 08-1137, passed 9-22-2008)

Statutory reference: A.R.S. § 41-2536 with changes

§ 3-5-14 Emergency procurements.

Notwithstanding any other provision of this article, the Procurement Manager may make or authorize others to make emergency procurements if there exists a threat to public health, welfare, or safety or if a situation exists which makes compliance with §§ 3-5-9, 3-5-10, or 3-5-20 impracticable, unnecessary, or contrary to the public interest as defined in rules adopted by the Procurement Manager, except that such emergency procurements shall be made with such competition as is practicable under the circumstances. A written determination of the basis for the emergency and for the selection of the particular contractor shall be included in the contract file. Materials, goods, or services obtained in an emergency procurement that exceed the amount prescribed in §3-4-8 , and a full report of the circumstances of the emergency and the goods and services obtained shall be reported to the Council at its next regular meeting. (Ord. 08-1137, passed 9-22-2008)

Statutory reference: A.R.S. § 41-2537 with changes

§ 3-5-15 Competition impracticable procurement.

Notwithstanding any other provision of this article, the Procurement Manager may make, or authorize others to make, competition impracticable procurements that do not have to meet the requirements inif a situation exists which makes compliance with §§ 3-5-9, 3-5-10, or 3-5-20 if the Procurement Manager deems compliance with those provisions impracticable, unnecessary, or disadvantageous to the City's interest, except that ,-sSuch procurements shall be made with such competition as is practicable under the circumstances. A written determination of the basis for the procurement and for the selection of the particular contractor shall be included in the contract file. (Ord. 08-1137, passed 9-22-2008)

Statutory reference: A.R.S. § 41-2537 with changes

§ 3-5-16 Request for information.

The Procurement Manager may issue a request for information to obtain data about services or materials available to meet a specific need. Adequate public notice as specified in § 3-5-9 shall be provided. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2555 with changes~~

§ 3-5-17 Demonstration projects.

(A) A demonstration project may be undertaken if the Procurement Manager determines in writing that the project is innovative, unique, and in the best interests of the City. The City shall not be obligated to pay the contractor during the demonstration period, or to procure or lease the services or materials supplied by the contractor. However, on the written request and justification by a department director and written determination by the Procurement Manager, the City may pay the contractor all or part of the expendable costs incurred during the demonstration period. The term of the demonstration shall not exceed two years.

(B) A subsequent contract to procure or lease services or materials previously supplied during a demonstration project may be procured under this section, subject to the Procurement Manager's approval, or it may be procured as otherwise provided in this article.

(C) Except as otherwise provided by law, a contractor for a demonstration project shall not be precluded from participating as a bidder or offeror in a procurement for the services or materials supplied during a demonstration project. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2556 with changes~~

§ 3-5-18 Unsolicited proposals.

A contract may be awarded based on an unsolicited proposal only if the Procurement Manager determines in writing that §§ 3-5-13 or 3-5-15 applies. The determination shall also include the following findings:

(A) The proposal is innovative and unique.

(B) The proposal is not available without restriction from another source and does not closely resemble a similar product which is either available or pending in the industry.

(C) The City department receiving the proposal has sufficiently supported its recommendations with facts and circumstances that preclude competition.

(D) The Procurement Manager has approved, in writing, the award of a contract based on the unsolicited proposal. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2557 with changes~~

§ 3-5-19 General Services Administration (GSA) contracts.

Notwithstanding §§ 3-5-9 and 3-5-10, the Procurement Manager or the Procurement Manager's designee may use the pricing and cost schedules of General Services Administration (GSA) contracts for materials and services. The Procurement Manager or the Procurement Manager's designee may authorize a city department to make purchases under a GSA contract approved by the Procurement Manager or the Procurement Manager's designee without complying with the requirements prescribed in §§ 3-5-9 or 3-5-10 if the Procurement Manager or the Procurement Manager's designee determines that it meets the requirements established by the rules adopted by the Procurement Manager. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2558 with changes~~

§ 3-5-20 Procurement of construction and specified professional services.

Professional services contracts with technical registrants, as defined in A.R.S. Title 32, and construction services contracts will be governed by the provisions of A.R.S. Title 34~~.~~, except that for Job-Order-Contracting construction services only, the maximum dollar amount of an individual job order shall be five million dollars ($5,000,000.00). (Ord. 08-1137, passed 9-22-2008)

§ 3-5-21 Cost principles rules.

The Procurement Manager may adopt rules setting forth cost principles which shall be used to determine the allowability of incurred costs under contract provisions which provide for the reimbursement of costs. (Ord. 08-1137, passed 9-22-2008)

~~**Statutory reference:** A.R.S. § 41-2591 with changes~~

~~§ 3-5-22 Approval of accounting system.~~

~~Except with respect to firm fixed price contracts, no contract type may be used unless it is determined in writing by the Procurement Manager, or the Procurement Manager's designee that the proposed contractor's accounting system is adequate to allocate costs. (Ord. 08-1137, passed 9-22-2008)~~

~~**Statutory reference: A.R.S. § 41-2545 with changes**~~

§ 3-5-23 Cost or pricing data.

The submission of current cost or pricing data may be required in connection with an award in situations in which analysis of the proposed price is essential to determine that the price is fair

and reasonable. The Procurement Manager may establish by rules what constitutes a fair and reasonable price. (Ord. 08-1137, passed 9-22-2008)

~~Statutory reference:~~ ~~A.R.S. § 41-2543 with changes~~

Article 3-6
MATERIAL MANAGEMENT

Sections:

3-6-1 Definitions.

3-6-2 Property administrator.

3-6-3 Surplus property management rules.

3-6-4 Disposition of real or personal property.

3-6-5 Disposition of abandoned or unclaimed property.

§ 3-6-1 Definitions.

In this aArticle 3-6, unless the context otherwise requires:

PROPERTY. Assets with a useful life of more than one year.

PROPERTY TRANSFER FORM. A form submitted by the department requesting transfer of fixed assets between departments or transfer of property to or from the Surplus Property Program.

SURPLUS PROPERTY. Property no longer needed by city departments for their operations, obsolete property, property in poor or non-working condition, or property that is a byproduct (e.g. scrap metal, used tires and oil, etc.). It does not include real property, which is governed by § 3-6-4.

UNCLAIMED, LOST AND CONFISCATED PROPERTY. All property used as evidence in the courts and remaining unclaimed after final disposition, property seized by a peace officer as being used unlawfully, and all property coming into the hands of any city officer or employee as lost or unclaimed. (Ord. 08-1137, passed 9-22-2008)

§ 3-6-2 Property administrator.

The Procurement Manager, as appointed by the City Manager, shall serve as the Property Administrator for the City and shall be primarily responsible for all property, real or personal, belonging to the City. The Procurement Manager may designate another employee, or employees, of the City as Property Administrator. The real estate coordinator, and other real estate staff, in the Engineering Department will report to the Director of Engineering, but will coordinate and advise the Property Administrator of all real estate transactions for the City. (Ord. 08-1137, passed 9-22-2008)

§ 3-6-3 Surplus property management rules.

The Procurement Manager shall adopt rules governing:

(A) The transfer of surplus property and operation of the surplus property program.

(B) The sale or disposal of surplus, unclaimed, and seized property by public auction, competitive formal and informal bid, electronic, or other appropriate method ~~designated by regulation~~.

(C) The trade-in of surplus property for purchase of new equipment. (Ord. 08-1137, passed 9-22-2008)

§ 3-6-4 Disposition of real or personal property.

Any disposition of real or personal property or improvements thereto may be made in accordance with rules adopted by the Procurement Manager, or otherwise in accordance with an approved method as determined by City Council, except that firearms and police canines shall be disposed of in accordance with Article 4-4.~~by public auction or otherwise in accordance with an approved method as determined by City Council.~~ (Ord. 08-1137, passed 9-22-2008)

§ 3-6-5 Disposition of abandoned or unclaimed property.

The disposition of all property coming into the possession of the Police Department, not purchased with city funds, shall be disposed of in accordance with Article 4-4, including but not limited to evidence, seized, lost, confiscated, abandoned, and unclaimed property.

ITEM #: 9.
DATE: 04/28/2025
AI #:2431

CITY COUNCIL ACTION REPORT

SUBJECT: REZONE APPROXIMATELY 267 ACRES FROM THE LAS PALMAS PLANNED AREA DEVELOPMENT (PAD) TO I-10 CITRUS GATEWAY PAD

STAFF PRESENTER(S): Guadalupe Ortiz Cortez, Principal Planner

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OTHER PRESENTER(S):

Wendy Riddell, Berry Riddell

SUMMARY

Request to rezone approximately 267 acres located at the southwest corner of N. Citrus Road and W Roosevelt Street from the Las Palmas Planned Area Development (PAD) to I-10 Citrus Gateway PAD to allow a mix of Business Park District (BPD), Light Industrial Park (I-1), and General Commercial District (C-2) land uses on certain areas of the property.

STRATEGIC PLAN ALIGNMENT



RECOMMENDATION

ADOPT ORDINANCE NO. 2025-1631 CONDITIONALLY REZONING APPROXIMATELY 267 ACRES LOCATED AT THE SOUTHWEST CORNER OF N. CITRUS ROAD AND W. ROOSEVELT STREET, TO BE KNOWN AS I-10 CITRUS GATEWAY, FROM THE LAS PALMAS PLANNED AREA DEVELOPMENT (PAD) TO THE I-10 CITRUS GATEWAY PAD. (Guadalupe Ortiz Cortez, Principal Planner)

FISCAL IMPACT

Although a fiscal impact analysis has not been conducted on this specific project, all new development will have an ongoing fiscal impact on the city. The development is responsible for construction of all infrastructure necessary to serve the site and will generate one-time revenue for the city through payment of permits, construction sales tax and development impact fees. Longer term fiscal impacts include increased demands for municipal services, the costs of which may or may not be offset by increased property values/tax levies, city sales tax, state shared revenues and the increased demand for commercial and retail development. Any

areas that will be maintained by the city are constructed by the developer and then conveyed to the city two years after construction.

BACKGROUND AND PREVIOUS ACTIONS

The Property subject to the rezone request is approximately 267 acres, located at the southwest corner of N. Citrus Road and W. Roosevelt Road (the Property), an aerial photo of the site is provided as Attachment B.

The Property has had a residential zoning (through PAD) since 2003 (Case Z-05-02), when it was rezoned from Agricultural Urban (AU) to Preliminary PAD. It was later rezoned to Final PAD (04-200-00003) with Ordinance No. 2005-0972, approved by City Council on November 14, 2005. The 2005 PAD was primarily zoned residential, except for a well and tank site on the northwest corner of the Property. The Property is currently zoned Planned Area Development (PAD) by Ordinance No. 2022-1557 approved by City Council on September 26, 2022. The PAD is known as Las Palmas at West Goodyear PAD Overlay (Las Palmas PAD). The Las Palmas PAD includes residential zoning (R1-4 and R1-6) with the southwest corner of the site being zoned General Commercial (C-2) and the northwest corner of the site being zoned Public Facilities District (PFD) for a future Arizona Water Company water campus. The northwest corner of the Las Palmas PAD, zoned Public Facilities District (PFD), is not part of this rezone application.

On December 16, 2024, the City Council adopted Resolution No. 2024-2438 approving a Major General Plan Amendment to change the Land Use Classification for the approximately 267-acre Property from Neighborhoods to Business & Commerce.

The Planning and Zoning Commission heard this item at their regular meeting held on April 9, 2025. The Planning and Zoning Commission voted (6-0) to forward a recommendation of approval to the City Council.

STAFF ANALYSIS

Current Policy

A rezoning request requires public review and vote by the Planning and Zoning Commission and the City Council. The proposed rezoning must be in conformance with the General Plan and should not adversely impact the surrounding area. As set forth below, the proposed zoning is both consistent with the General Plan and will not adversely impact the surrounding area.

Details of the Request

The applicant requests to rezone approximately 267 acres from the Las Palmas PAD (underlying R1-4 (Single Family Detached), R1-6 (Single Family Detached) and C-2 (General Commercial) to I-10 Citrus Gateway PAD to allow a mix of Business Park District (BPD), Light Industrial Park (I-1), and General Commercial District (C-2) land uses with PAD modifications to increase permitted building heights, and adjust permitted uses and development standards on the property. If approved, the PAD would:

- Allow Business Park District (BPD) uses across the entire property (shown on the Land Use District Map below, Exhibit C to the Ordinance (Attachment A).
- Allow Light Industrial District (I-1) uses within the areas located 300 feet inward from the perimeter of the Property as well as adjacent to the off-site water campus in the northwest corner of the site, by creating flexible land use districts.
- Limit the development within 300 feet of the perimeter of the Property to either Business

Park District (BPD) or General Commercial District (C-2) uses.
- Allows General Commercial (C-2) uses within 770 feet of the perimeter of the Property along Citrus Road and within 900 feet of the southwestern corner of the Property.

To accommodate the foregoing, the PAD creates the following land use districts:
- The areas identified as BPD (shown in green in the Land Use District Map) allow for development of Business Park District uses.
- The areas identified as BPD-LI (shown as hot pink) allow for the development of Business Park District uses and Light Industrial District (I-1) uses.
- The areas identified as BPD-C (shown in peach on the Land Use District Map allow for development of Business Park District uses and General Commercial District (C-2) uses.
- The areas identified as BPD-C-LI (shown in dark purple on the Land Use District Map) allow for development of Business Park District (BPD) uses, General Commercial District (C-2) uses, and Light Industrial District (I-1) uses.

Land Use District Map



The PAD proposal includes deviations from the city's development standards applicable to the Business Park District; General Commercial District (C-2), and Light-Industrial District (I-1). The PAD proposal is included as Exhibit C to the Ordinance (Attachment A). The applicant is requesting to modify the following standards:
- Allowance of Wireless Communications Facilities (WCF) uses within all districts with administrative review and approval process, without requiring a Special Use Permit.
    - Staff has provided WCF height limitations comparable to heights permitted in the PAD's various zoning districts and that have been incorporated into the PAD document. This includes the WCF not exceeding a maximum height of 65-feet except when it incorporates additional design elements to conceal the pole or tower upon which the facilities are located, in which the height shall be a maximum of 75-feet. Additionally, WCF shall follow the building setbacks applicable to development within the I-10 Citrus Gateway General Commercial District (C).
- Building heights may:
    - Increase to 70 feet for all districts when not located within 300 feet of the project's property line
    - Additionally, for properties that develop as Light Industrial (LI)The applicant is

proposing an additional 5 feet of height for mechanical equipment, screening, and architectural embellishments.
    - Increase building height to 100 feet for all districts when not located within 300 feet of residential uses with the review and approval of a Use Permit.
        - To offset the height increase request to 70 feet and up to 100 feet with a Use Permit, the applicant is proposing a 300 foot buffer for this height when the Property is in proximity to residential. In other words, within 300 feet of the property lines, the maximum building height allowed is 56 feet in all PAD districts. A Use Permit application request to increase the building height will allow staff and the City Council to respond to the project proposal and consider surrounding context at that time.
- Inclusion of a proposed trail along the northern, eastern, and southern boundaries of the project site with the required 5% recreational open space for the entire site.
    - Modification of requirement to complete the 5% recreational open space net site with the first phase of the development. The trail shall be constructed in along with adjacent street improvements, unless a phasing plan is approved by the Zoning Administrator.
    - The trail shall be a minimum of 10-feet wide and shall be constructed with compacted decomposed granite
    - The trail shall run along the southern, southeastern, eastern and northern boundaries of the Property and shall be located within the landscape setbacks along the southern, southeastern, and eastern boundaries of the Property.
    - The trail shall be high and dry.
    - The trail shall be open and accessible to the public and shall be maintained by a property owner's association.
    - The trail shall include a minimum of ten amenities throughout the trail.
- Reduction for required landscaped area from 10% of the net site area to 8% of the net site area for light industrial uses (LI).
- Additionally, retention basins, in excess of 50% of the landscaped frontage, may be permitted to locate on the internal project side of the required open space trail if they are not substantially visible from public ROW, with the exception of what is required by the City for regional drainage.

Evaluation Criteria
Per the city of Goodyear Zoning Ordinance, the city's review and recommendation zoning amendment is to be guided by the following criteria:

1. Consistency with the General Plan.
The subject Property is located within the Business & Commerce Land Use Classification of the city's 2035 General Plan. This category is intended to provide areas for the growth and development of Goodyear's economic base, including large areas for shopping and entertainment that are regionally significant (typically serving a trade area of 5?10 miles or larger). Business & Commerce includes uses such as business parks, offices, retail, warehouses, regional hospitals, high density residential that supports the area, and other light industrial uses that are also appropriate, in certain areas. This rezoning to PAD for a mix of Business Park (BPD), Light Industrial (I-1), and General Commercial (C-2) uses are consistent with the General Plan Business & Commerce land use category.

Additionally, the proposal supports the Prosperous and Innovative Goal PI-1: A resilient and diversified economy; The proposed rezone would allow the Property to develop with a variety

of potential commercial, business park, and light industrial uses allowing the property to respond to market shifts, while also ensuring that the development pays for the on-site and off-site infrastructure required to serve the development as identified in Goal LC-2 (Livable and Connected), Policy 1.

2. Suitability of the subject property's physical and natural features for the uses permitted under the proposed zoning district.
The Site is generally flat with no physical or natural features that would hinder development.

3. Compatibility of all potential uses allowed in the proposed zoning district with surrounding uses and zoning.
Current and future uses and development of the properties surrounding the subject property include:
North – North of the Property is W. Roosevelt Street and an existing residential neighborhood zoned RU-43 that is within unincorporated Maricopa County.
South – Southeast of the Property, within the City of Goodyear, is the Roosevelt Irrigation District canal and property zoned MH/RVP Manufactured Home or RV Park within the City of Goodyear and contains the Destiny RV Resort. Southwest of the Property is W. Van Buren Street and an existing residential neighborhood zoned RU-43 across it that is within unincorporated Maricopa County across W Van Buren Street.
West – West of the Property, along Perryville Road, is a row of residential homes, zoned RU-43, within unincorporated Maricopa County. West of the existing homes is Perryville Road, and property zoned Light Industrial, with approved industrial projects, and located within City of Buckeye.
East – East of the Property, within the City of Goodyear, is Citrus Road and the Innovation Centre property zoned PAD that contains the 10 Goodyear industrial complex site.

4. Proposed zoning district's consistency with other land uses within the immediate area and whether uses allowed under the proposed zoning district would be better suited to the subject property than the uses allowed under the current zoning.
The Property has been zoned residential since 2003 and has not developed as residential. In 2022, a rezoning was approved to modify the residential zoning allowed for the Property. The property has not developed with the new residential zoning. The proposed mixed Business Park (BP), General Commercial (C-2) and Light Industrial (I-1) zoning gives the developer the opportunity to market the Property in a way they believe will develop. The Property is in proximity to similar proposed uses to the east with the Innovation Centre, zoned PAD with a mixed of uses. To the west and northwest of the Property, in the City Buckeye, there are properties approved for industrial uses, including warehouses such as an Amazon warehouse.

Luke Air Force Base:
The property falls within Luke Air Force Base's gradated density contours (GDC). The west half of the Property is within the 65 DNL and 0.5 miles graduated density concept contour area, this area is recommended density is of 0 to 2 dwelling units per acre. The east half of the parcel is within the 1.0-mile distance of 65 DNL and this area's recommended density is 0-4 dwelling units per acre. Staff sent the rezone proposal to Luke Air Force Base for a courtesy outside agency review. Luke Air Force Base's staff indicated the proposal would not have a negative impact on Luke AFB Flight Operations and will be subjected to approximately 165 over flights per day.

5. Demand for the types of uses permitted in the proposed zoning district in relation to the amount of land currently zoned and available to accommodate the demand.

The applicant has indicated there is a demand for business park uses. Additionally, the applicant is including the commercial and light industrial zoning to allow the property to develop in a way that responds to market demand.

6. Demands for public services that will be generated by the uses permitted in the proposed zoning district.
School Districts:
The subject property is located within the Liberty Elementary School District and the Agua Fria Union High School District. Due to the non-residential nature of the land use, the school district should not be impacted from a student enrollment standpoint.

Fire Response:
Emergency response times and distances are provided below:

Nearest Goodyear Fire Station	Shortest path		2nd Nearest Goodyear Fire Station	Shortest path	
	Mins	Miles		Mins	Miles
Fire Station #188	2.15	1.08	Fire Station #184	7.37	3.69

Police Response:
The proposed development is located within an existing police patrol beat and the current level of service within the beat can accommodate the development of the property.

Streets/Transportation:
The property will be largely accessed from N. Citrus Road, W. Roosevelt Street, and W. Van Buren Street. The Engineering Plan Review division of the Development Services Department has created stipulations to address traffic requirements applicable to this development. Those stipulations include the requirement for improvements along N. Citrus Road and W. Van Buren Street as well as contributions towards a traffic signal at N. Citrus Road and W. Roosevelt Street. Moreover, the developer is responsible for appropriate street improvements for W. Roosevelt Street in compliance with Maricopa County standards or with City of Goodyear standards if the applicant intends to submit an annexation applicant for Roosevelt Road, and such application is approved by City Council. Additionally, as described in their Project Narrative (Attachment C), the applicant proposes to develop a frontage road along W. Roosevelt Street to separate local residential traffic from traffic generated from the site, mitigating any potential traffic impacts to the residential neighborhood.

Water/Wastewater:
The subject property is located within the Arizona Water Company water service area, and wastewater lines to be serviced by the City of Goodyear. Wastewater treatment facilities within the city have sufficient capacity and can be expanded to meet demand if needed. Additional distribution system and collection system lines will be constructed by new development on the Property.

7. Potential adverse fiscal impacts that will result from providing services to areas not in proximity to where existing public services are provided.
The developer will be responsible for extending service infrastructure needed to support the property and will pay their proportionate share of impact fees for regional growth.

8. General public concerns.

In compliance with the Citizen Review requirements, a neighborhood meeting was held on January 22, 2025, in the Canyon Trails rooms at Goodyear City Hall. A postcard notification was sent to property owners within five hundred (500) feet of the Property on January 7, 2025. The applicant held an open house style neighborhood meeting and discussed their proposal with nearby residents as they joined the meeting. Seven nearby residents attended the neighborhood meeting. During the meeting, residents had discussions with the applicant's team regarding the Roosevelt Street frontage road, egress and ingress access into their properties from Roosevelt Street, possible reflection from buildings onto their properties, and general service discussions for the neighborhood.

Staff will work with the applicant through the Roosevelt Street frontage road design as necessary. Additionally, Business Park District (BPD) developments are required to provide a minimum of 5% of the net site for open recreational space. In this case, the applicant is proposing to provide a 10-foot-wide trail within the Property's landscape area and provide a minimum of ten amenities along the trail. Moreover, the developer is proposing to provide a 50-foot-wide landscape buffer along the northern, southern, and western property lines to further buffer from residential in proximity.

Notice of the public hearings before the Goodyear Planning and Zoning Commission, and public hearing before the Goodyear City Council was published in the Arizona Republic West Valley Edition on March 21, 2025, signs were posted on the property at 3 locations on October 25, 2024 and updated on March 18, 2025. Postcards were mailed on March 17, 2025 to the owners of property affected by this proposed amendment within five hundred (500) feet of the Property.

Staff received one letter in support of the project from a resident living in the county residential neighborhood north of Roosevelt Street stating the applicant had worked with her and her husband to address their concerns.

On April 9, 2025, the Planning and Zoning Commission held a public hearing for the item. After the staff presentation, the Commission asked staff to provide an example of business park or commercial setbacks adjacent to residential uses, staff provided an example. The Commission asked staff to clarify if the trail the applicant proposed was in lieu of or a part of 5% recreational open space required for the site. Staff responded the trail is a part of the required recreational open space. The Commission also asked where the entrances to the development are located. Staff indicated entrances are not a part of the rezone application and will be reviewed as part of a site plan application. Moreover, the Commission asked staff about the community outreach process and how the applicant addressed resident's concerns. In their response, staff spoke about a 50-foot landscape buffer along the perimeter of the site adjacent to residential and the Roosevelt Street frontage road proposal. Additionally, the Commission provided staff with feedback regarding the 2024 Major General Plan Amendment for the site being included in the draft Ordinance. The applicant also gave the Planning and Zoning Commission a presentation. During the public input part of the hearing, two speakers spoke in support of the project. The first speaker, although in support of the project, expressed concerned with the traffic and speed limits on Perryville Road. The second speaker spoke in support of the project and development in general. Additionally, two additional speaker cards were submitted in support of the project by persons who did not wish to speak at the hearing. After closing the public hearing, the Commission discussed the item. The Commission expressed appreciation of the applicant who worked with residents to address their concerns. After the discussion, the Planning and Zoning Commission voted (6-0) to recommend approval of the rezone to the City Council, subject to the proposed stipulations.

9. Whether the amendment promotes orderly growth and development.
The subject property is in proximity of existing development, City services, and infrastructure. The proposed zoning for the Property is consistent with approved zoning and existing uses in the vicinity, and the proposal provides buffers in consideration of existing residential homes in proximity of the Property.

10. Any other factors related to the impact of the amendment on the general health, safety and welfare of the citizens of the City and the general public.
The proposed rezone from the Las Palmas residential (R1-4 and R1-6) PAD to the I-10 Citrus Gateway PAD for business park, commercial, and light industrial uses allows the Property to develop in a way that supports the current market. The Property is in proximity to similar uses to the east at the Innovation Centre, zoned PAD with a mixed of uses, and has a Site Pan approved to develop the eastern half for warehouses, development known as Goodyear 10. To the west and northwest of the Property, in the City Buckeye, there are properties approved for industrial uses, including warehouses such as an Amazon warehouse. Considering the proposed uses, the applicant is proposing to provide appropriate buffers and recreational open space amenities to mitigate any impact to surrounding residential areas.

STAFF FINDINGS:
As outlined herein, staff finds the proposed rezone request to further the vision of the City of Goodyear and to be in compliance with the General Plan's fundamental strategies, goals and policies, and does not alter the existing character of the area or diminish the environmental quality of the air, water, land, or cultural resources. Ordinance No. 2025-1631 which upon approval by the Mayor and City Council would make the rezone proposal effective, as directed by law, is included as Attachment A.

Attachments

Attachment A - Ordinance No. 2025-1631

Attachment B - Aerial Photo

Attachment C - Project Narrative

Staff Presentation

ORDINANCE NO. 2025-1631

AN ORDINANCE OF THE MAYOR AND COUNCIL OF THE CITY OF GOODYEAR, MARICOPA COUNTY, ARIZONA, CONDITIONALLY REZONING APPROXIMATELY 267 ACRES OF PROPERTY LOCATED AT THE SOUTHWEST CORNER OF N. CITRUS ROAD AND W. ROOSEVELT STREET, TO BE KNOWN AS I-10 CITRUS GATEWAY, FROM THE LAS PALMAS PLANNED AREA DEVELOPMENT (PAD) TO THE I-10 CITRUS GATEWAY PAD.

WHEREAS, the property subject to this Ordinance consists of approximately 267 acres and is located at southwest corner of N. Citrus Road and W. Roosevelt Street and is known as I-10 Citrus Gateway as more particularly described in that certain document titled “Zoning Legal Description,” which is declared a public record herein and which is referred to and made a part hereof as if fully set forth in this Ordinance (the “Property”); and

WHEREAS, on October 14, 2003, the City Council adopted Resolution No. 03-894 approving a Pre-Annexation Development recorded in the Official Records of Maricopa County (MCR) as Instrument No. 2003-1506843 regarding the annexation and development of the Property; and,

WHEREAS, on November 10, 2003, the City Council adopted Ordinance No. 03-875 annexing the Property into the municipal boundaries of the City, and adopted Ordinance No. 03-876 rezoning the Property to the Preliminary Planned Area Development (PAD) zoning district; and,

WHEREAS, the owners of the Property along with a number of owners of other properties located within West Goodyear (the “West Goodyear Properties”) entered into a Memorandum of Understanding regarding West Goodyear Regional Infrastructure (the “West Goodyear MOU”) recorded in the Official Records of Maricopa County Recorded as Instrument No. 2005-1315299, which was approved by Resolution No. 2005-981 adopted by the City Council on May 23, 2005; and,

WHEREAS, on November 14, 2005, the City Council adopted Ordinance No. 2005-972 rezoning the Property to Final PAD to be developed in accordance with the Las Palmas Final Planned Area Development Narrative and Development Guide, dated August 26, 2005; and,

WHEREAS, on November 14, 2005, the City Council approved a Preliminary Plat subdividing the Property into 470 single family residential lots and 2 court home parcels; and,

WHEREAS, to facilitate the development of the West Goodyear Properties, the owners prepared utility master plans identifying regional water and wastewater improvements needed to serve the West Goodyear Properties, which were approved by the city ad the City Council subsequently adopted cost recovery resolutions that provided for the recovery costs of the installation of wastewater lines from owners of the West Goodyear Properties benefited by the regional improvements; and,

WHEREAS, on July 10, 2006, the Goodyear City Council adopted Resolution of Intention 06-1065 authorizing the formation of a Special Public Improvement Project Area for the construction of Special Public Improvements consisting of various regional wastewater trunk lines and authorizing the City to seek reimbursement from the owners of the properties benefited by the Special Public Improvements for the costs of constructing the Special Public Improvements, which was subsequently amended by Resolution 14-1622, adopted by City Council on May 19, 2014, and Resolution 16-1748 adopted by City Council on April 16,2016 (collectively Resolution No. 06-1065 and the two amendments are referred to as the "West Goodyear Wastewater Cost

Recovery Resolution"); and,

WHEREAS, owner of the Property is required to construct the regional wastewater improvements identified in the master utility plans approved for the West Goodyear Properties and identified in the West Goodyear Wastewater Cost Recovery Resolution as benefitting the Property; and

WHEREAS, on September 26, 2022, the City Council adopted Ordinance No. 2022-1557 approving the current zoning of the property to the 2022 Las Palmas PAD with 137.34 acres of Reduced R1-4 and 91.11 acres of Reduced R1-6 Residential Zoning Districts, 7.11 acres of Public Facilities (PFD) District, and 38.16 acres of C-2 General Commercial Zoning District with PAD Overlay; and,

WHEREAS, if approved, the Property would rezone approximately 267 acres, excluding the 7.11 acre of Public Facilities (PFD) District, from the Las Palmas PAD to Business Park (BPD) District with a PAD Overlay that includes flex C-2 General Commercial and I-1 Light Industrial Park zoning in certain areas of the property and modifies the permitted uses and development standards for the Property as shown on the PAD Overlay attached herein; and,

WHEREAS, no development has occurred on the Property since it was annexed into the City and the City has repeatedly taken action to facilitate development of the Property including the adoption and amendment of Cost Recovery Resolutions to provide for the development of core wastewater infrastructure needed to serve the properties subject to the West Goodyear MOU and repeatedly amending and or replacing development agreements governing the development of the Property; and

WHEREAS, the Second Amended & Restated Development Agreement for Las Palmas, which is the current development agreement for Las Palmas, identified various obligations related to the development of the property, including triggers for the construction of certain off-site and onsite street improvements, requirements for constructing regional wastewater transmission lines, and requirements for payments owed under the West Goodyear Cost Recovery Resolutions towards the cost of the regional wastewater transmission lines constructed by other; and it provided various benefits such as density bonuses and vesting of currently approved but unrecorded final plats; and

WHEREAS, because of 2022 rezoning and actions that have occurred since the effective date of the Second Amended & Restated Development Agreement for Las Palmas, various terms in the agreement are no longer needed, and other terms are not acceptable to the City because they are either not consistent with the proposed zoning or are not acceptable to the City because of the substantial changes to the development of the Property that will result under the re-zoning; and rather than amend or replace the Second Amended & Restated Development Agreement for Las Palmas, the agreement will be terminated as a condition of the re-zoning and the outstanding obligations, including modified triggers for the construction of certain on-site and off-site street improvements and in-lieu payments, are being included as conditions of the rezoning; and

WHEREAS, on December 16, 2024, the City Council approved a Major General Plan Amendment changing the Land Use Designation from Neighborhoods to Business & Commerce; and

WHEREAS, the proposed zoning is in conformance with the General Plan and should not adversely impact the surrounding area; and

WHEREAS, the proposed rezone would change the property's entitlements from the Las Palmas PAD to I-10 Citrus Gateway PAD for business park, light industrial, and commercial uses; and

WHEREAS, city staff finds that the proposed rezoning will not adversely impact the surrounding area as the proposed land uses will allow for the orderly growth and development of currently undeveloped land; and,

WHEREAS, a Neighborhood Meeting was conducted for this proposal and notice of the application was provided to property owners within 500 feet of the property on January 7, 2025 and a sign advertising the Neighborhood Meeting was posted to the site on October 25, 2024 and updated on January 8, 2025; and,

WHEREAS, the Neighborhood Meeting took place in-person on January 22, 2025 and was attended by 7 nearby residents were they had discussions with the applicant's group regarding the configuration of the Roosevelt Street frontage road, egress and ingress access to north of Roosevelt Street to their properties, and possible building reflection onto their properties, and,

WHEREAS, public notice that this rezoning was to be considered and reviewed at a public hearing held before the Planning and Zoning Commission on April 9, 2025, appeared in the Arizona Republic Southwest Valley edition on March 21, 2025 and postcards were mailed to adjoining owners on March 17, 2025 and the sign on the site was updated on March 18, 2025 to notify residents of the scheduled public hearing; and

WHEREAS, a public hearing was held before the Planning and Zoning Commission on April 9, 2025; and

WHEREAS, at that meeting the Planning and Zoning Commission voted (6-0) to recommend approval, subject to the stipulations in the draft ordinance that was presented); and

WHEREAS, a public notice that this rezoning request would be considered and reviewed at a public hearing to be held before the City Council on April 28, 2025 appeared in the Arizona Republic Southwest Valley's March 21,2025 Edition; postcards were mailed to adjoining owners on March 17, 2025; and a sign on the site was updated on March 18, 2025 to notify residents of the scheduled public hearing; and

WHEREAS, the Mayor and Council of the City of Goodyear, Arizona find the adoption of this Ordinance to be in the best interests of the public interest, health, comfort, convenience, safety, and general welfare of the citizens of the City.

NOW, THEREFORE, BE IT ORDAINED BY THE MAYOR AND COUNCIL OF THE CITY OF GOODYEAR, MARICOPA COUNTY, ARIZONA, AS FOLLOWS:

SECTION 1. DESCRIPTION OF PROPERTY BEING REZONED

This Ordinance No. 2025-1631 applies to approximately 267 acres located at the southwest corner of N. Citrus Road and W. Roosevelt Street as shown on the "Official Supplementary Zoning Map No. 24-226", a copy of which is attached hereto as Exhibit A, and legally described in that certain document titled "Zoning Legal Description" attached hereto as Exhibit B (the "Property").

SECTION 2. ADOPTION OF FINDINGS

The clauses set forth above are hereby adopted and incorporated herein by this reference as if fully set forth herein.

SECTION 3. REZONING

The Property is conditionally rezoned to the I-10 Citrus Gateway PAD (Planned Area Development), attached hereto as Exhibit C. The Property shall be developed in accordance with the Permitted Uses and Development Standards as set forth in the I-10 Citrus Gateway Planned Area Development dated March 2025 attached hereto as Exhibit C except as further modified by the Conditions of Approval/Stipulations in Section 4 below:

SECTION 4. CONDITIONS OF REZONING

1. Approval of the rezoning does not constitute approval of any site plan for the development within the Property. All future development will be subject to site plan review and approval by city staff, at which time all elements of the site development will be reviewed, including, but not limited to, architecture, landscaping, grading and drainage, lighting, infrastructure, parking, driveway locations, driveway spacing, access and circulation;
2. Except as modified by the PAD or the conditions of approval/stipulations, development of the Property shall comply with the Goodyear Zoning Ordinance, the City of Goodyear Design Guidelines, and all other applicable federal, state, and local laws, ordinances, regulations, standards, and policies, including but not limited to, the City of Goodyear subdivision regulations, the City of Goodyear's Engineering Design Standards and Policies, and Building Codes; and
3. The Traffic Impact Analysis Study (TIA) submitted with the application for rezoning is not approved. Updated TIAs shall be submitted with submittals for final plats, minor land divisions and site plans unless the City Engineer or designee advise in his/her discretion that an updated TIA is not required; and
4. All overhead utilities within or adjacent to the Property, including cable television, and electric lines, shall, at no cost to the City, be placed underground (with the exception of 69kV or larger electric lines) prior to the issuance of the first Temporary Certificate of Occupancy or permanent Certificate of Occupancy for any structure within the Property; and
5. All outdoor activities within portions of the Property located within 300 feet of a residential property line loading/unloading of materials are prohibited between the hours of 10PM and 6AM. This includes by way of example, but not limitation truck idling, trailer maneuvering, loading and unloading. All activity within the portions of the Property located within

300 feet of a residential property line shall be conducted wholly within a confined structure; and

6. Prior to the issuance of building permits for each building within the Property, Luke Air Force Base staff (“Luke”) shall be given an opportunity to review and provide written comment on all building plans and changes to the building plans required or recommended by Luke based on safety concerns shall be made, including reductions in height of the structure or building, including equipment installed on the top of the structure or building; and

7. Owner shall dedicate, at no cost to the city, all rights-of-way and/or easements within the boundaries of the Property that are: (i) needed for the construction of infrastructure improvements required for the City to provide wastewater services to the Property; (ii) required to be dedicated under any applicable law, code, ordinance, rule, regulations, standards, guidelines governing the development of the Property including, but not limited to the City of Goodyear subdivision regulations, Building Codes and Regulations, and the City of Goodyear’s Engineering Design Standards and Policies; (iii) required for the construction of improvements for which Owner is responsible for making in-lieu payments;(iv) required to be dedicated pursuant to any development agreement with the City regarding the development of the Property; (v) required for the construction of the infrastructure improvements to be constructed pursuant to the stipulations herein, and/or (vi) required public infrastructure improvements Owner is required to construct pursuant to any applicable law, code, ordinance, rule, regulations, standards, guidelines governing the development of the Property including, but not limited to the City of Goodyear subdivision regulations, Building Codes and Regulations, and the City of Goodyear’s Engineering Design Standards and Policies. The rights-of-way to be dedicated shall be dedicated in fee and all rights-of-ways and easements shall be dedicated lien free and, unless otherwise agreed to by the City Engineer or designee, free of all other easements or other encumbrances. Unless the timing of the required dedications is modified by terms of a written development agreement approved by the Goodyear City Council or a written phasing plan approved by the City Engineer or designee, all required dedications shall be made prior to or concurrent with recordation of a final plat or minor land division subdividing all or part of the Property, that includes the area in which the property to be dedicated is located, the issuance of a construction permit for work within the Property, or within sixty days of the date requested by the City Engineer or designee, whichever is earlier; and

8. Owner shall acquire and dedicate, at no cost to the City, all rights-of-way and/or easements outside the boundaries of the Property that are needed for the construction of infrastructure improvements required for the City to provide wastewater services to the Property and that are needed for the construction of any of the infrastructure improvements Owner is required to construct pursuant to the conditions of approval/stipulations set forth herein. Any right-of-way required for the construction of street improvements shall be acquired in fee, and all rights-of-ways and

easements shall be dedicated lien free and, unless otherwise agreed to by the City Engineer or designee, free of all other easements or other encumbrances.

a. If any of the rights-of-way are Owner is required to work in good faith to acquire and dedicate are located outside the boundaries of the City, Owner shall, at no cost to the City, process an annexation application to annex the right-of-way into the City. The annexation required herein shall be submitted prior to the City's acceptance of the infrastructure improvements for which the right-of-way is acquired; and

9. If any of the infrastructure improvements Owner is required to design and construct pursuant to the terms of this Ordinance have been constructed or is to be constructed by others, Owner shall remit a payment to the city in the amount of the actual costs incurred in the design and construction such infrastructure improvements if completed or, if not completed, the payment shall be in the amount of an engineer's estimate of the costs as approved by the Goodyear City Engineer or designee. The payment requirement herein shall be paid prior to or concurrent with the recordation of a final plat triggering Owner's obligation to design and construct the infrastructure improvements; and

10. Owner shall, at Owner's sole cost and expense construct the following:

    a. Owner shall obtain the permission of the Maricopa County Department of Transportation ("MCDOT") to modify W. Roosevelt Street between the western limits of the Property and N. Citrus Road to provide one lane for each direction of travel and a two-way left-turn lane, along with a two-way frontage road north of Roosevelt Street extending from 185th Avenue to approximately 350 feet west of N. Citrus Road (the "Roosevelt Access Road"). Owner shall, at Owner's sole cost and expense, design and construct the Roosevelt Access Road, which shall provide direct access to those properties along W. Roosevelt Street that currently have direct access to W. Roosevelt Street. The Roosevelt Access Road shall be separated from W. Roosevelt Street by a 7-foot median described below. Owner shall, at Owner's sole cost and expense, design and construct the Roosevelt Access Road Improvements and shall acquire, at Owner's sole cost and expense, any additional right-of-way required by MCDOT for the Roosevelt Access Road. No Certificate of Completion, Temporary Certificate of Occupancy or Permanent Certificate of Occupancy for any structure within the Property shall be issued until the Roosevelt Access Road has been completed and accepted by MCDOT; and

    b. Owner shall, at Owner's sole cost and expense, construct a 7-foot wide median along the W. Roosevelt Street alignment (the southern boundary of the existing Maricopa County right-of-way) between 185th Avenue to approximately 350 feet west of N. Citrus Road as approved by the City and as approved by MCDOT if required by MCDOT. The median shall provide median breaks

at all existing streets, with the exception of 183rd Drive, unless otherwise directed by the City and/or MCDOT. The median shall be landscaped with tree and shrubs as required by the City to provide screening from the operations and lighting from the Property. The property owner shall be responsible to construct the taper from the three-lane road to match into the county two-lane road. Full street improvements shall be made on W. Roosevelt Street between 180th Drive and N. Citrus Road including terminating the Roosevelt Access Road, and transitioning from the roadway cross-section with the Roosevelt Access Road to the typical city cross-section at the intersection of W. Roosevelt Road and N. Citrus Road. No Certificate of Completion, Temporary Certificate of Occupancy or Permanent Certificate of Occupancy for any structure within the Property shall be issued until the median described herein has been completed and accepted by the City subject to completion of the two- year warranty period; and

c. The section of W. Roosevelt Street between 185th Avenue to approximately 350 feet west of N. Citrus Road shall be realigned on the south side of the median described above. Owner shall, at Owner's sole cost and expense, design and construct the realigned section of W. Roosevelt Street between 185th Avenue to approximately 350 feet west of N. Citrus Road with the following improvements: three travel lanes (one in each direction and a two-way left-turn lane) and curb, gutter, drainage facilities to take the run-off from W. Roosevelt Road and the Roosevelt Access Road, sidewalk, landscaping improvements, lighting and signage and any other improvements typically required for a minor collector, but modified to provide for the integration of the Roosevelt Access Road, including but not limited to, the removal of bike lane (the "Roosevelt Street Improvements") as approved by the City and as approved by MCDOT if required by MCDOT. Owner shall, at Owner's sole cost and expense, convey to the City, lien free and, unless otherwise agreed to by the City, free of all other easements or other encumbrances, all right of way needed for the Roosevelt Street Improvements. No Certificate of Completion, Temporary Certificate of Occupancy or Permanent Certificate of Occupancy for any structure within the Property shall be issued until the Roosevelt Street Improvements have been completed and accepted by the City subject to completion of the two-year warranty period; and

11. To the extent that any part of the existing Maricopa County right-of-way for W. Roosevelt Street is located on the south side of the median that is to be constructed pursuant to Rezoning Condition 10 above, Owner shall, at no cost to the City, process an annexation application to annex the right-of-way into the City. The annexation required herein shall be submitted prior to the City's acceptance of the Roosevelt Street Improvements; and

12. Parking along the north and south sides of Roosevelt Streets and along the north side of Van Buren Street shall be prohibited and prior to the issuance of any Certificate of Completion, Temporary Certificate of Occupancy or Permanent Certificate of Occupancy for any structure within the Property, Owner shall make an in-lieu payment to the City for the costs of purchasing and installing signage needed to prohibited parking on the north half of the section of W. Van Buren Street adjacent to the Property and on the north and south halves of the section of Roosevelt Street between N. Perryville Road and N. Citrus Road. No Certificate of Completion, Temporary Certificate of Occupancy or Permanent Certificate of Occupancy for any structure within the Property shall be issued until the in- lieu payment required herein has been paid to the City; and

13. Owner shall, at no cost to the City, design and construct full half-street improvements, except for the construction of the median and median landscaping, for the north-half of the section of W. Van Buren Street from the southwest corner of the Property east to the west of the Roosevelt Irrigation District ("RID") Canal required for a Minor Arterial as set forth in the City of Goodyear Engineering Design Standards in effect when the improvements are constructed, including, but not limited to, pavement, curb and gutter, sidewalks, street frontage landscape and landscape irrigation, and street lighting. City will work in good faith to leave the existing bridge intact, which may require some modifications to the cross-section, and including west of the RID Canal, where the Minor Arterial cross-section for W. Van Buren Street will transition to not include the raised median (14') across the bridge crossing over the RID Canal, as determined by the City Engineer or his/her designee at the time of site plan approval; and

14. Owner shall remit to the City an in-lieu payments for one-half the cost of a full median and one-half the cost of full-median landscaping for the median that is required under the City of Goodyear Engineering Design Standards to be installed within the section of W. Van Buren Street from the southwest corner of the Property east to the southeast corner of the Property along W. Van Buren Street. The in-lieu payment required herein shall be based on the actual cost of the improvements if previously completed by others or based on the estimated cost of the improvements as determined by the City Engineer or designee. The in-lieu payment required herein shall be made when a permit is issued for the construction of the Van Buren Street Improvements from the southwest corner of the Property to the southeast corner of the Property or when the W. Van Buren Street Improvements In-Lieu Payment is due; and

15. Owner shall, at no cost to the City, design and construct full half-street improvements for the west-half of the section of N. Citrus Road from W. Roosevelt Street to the south side of the RID Canal required for a Minor Arterial as set forth in the Engineering Design Standards in effect when the improvements are constructed or as approved by the City Engineer, which includes, but is not limited to, pavement, curb and gutter, sidewalks, street frontage landscape and landscape irrigation, and street lighting. North of the RID Canal, the Minor Arterial cross-section of N.

Citrus Road will transition to not include the raised median (14') across the bridge crossing over the RID Canal (the "Citrus Road Improvements"), as determined by the City Engineer at the time of site plan approval, or Owner shall remit to the City an in-lieu payment for 25% of the cost of the bridge based out of an engineer's cost estimate at the time of permit issuance or recordation of final plat; and

16. Owner is responsible for any improvements in addition to City standards warranted by updates to Traffic Impact Analyses or Traffic Impact Statements submitted at the time of site plan approval; and

17. Owner is responsible for a proportionate share of the costs of full traffic signals at the intersections identified below:

    a. 25% of the cost of the full traffic signal (all four legs) at W. Roosevelt Street and N. Citrus Road. The in-lieu payment required herein shall be made when a permit is issued for the construction of the Roosevelt Street Improvements.

    b. 25% of the cost of the full traffic signal (all four legs) at W. Van Buren and N. Perryville Road. The in-lieu payment required herein shall be made when a permit is issued for the construction of Van Buren Street Improvements.

    c. The in-lieu payment required herein shall be based on the actual cost of the traffic signal(s) if previously completed by others or based on the estimated cost of the traffic signal(s) as determined by the City Engineer or designee.

18. If a traffic signal is identified in TIA as being needed at Van Buren Street and any entrance into/out of the Property, Owner shall, at Owner's sole cost and expense, design and construct the traffic signals (all legs of the intersection) identified as being needed in TIA and for acquiring and dedicating to the City, at no cost to the City, all right-of-way needed for the construction of the traffic signals. Unless modified by a written phasing plan approved by the City Engineer or designee or by a development agreement approved by the City Council, the traffic signals required herein shall be completed and accepted by the City Engineer or designee subject to completion of the two-year warranty period, prior to the issuance of any Certificate of Completion, Temporary Certificate of Occupancy or Permanent Certificate of Occupancy for any structure within the Property. If a written phasing plan is approved by the City Engineer or designee for the construction of any or all of the traffic signals required herein, the required traffic signals shall be completed as provided in the written phasing plan (the "Completion Deadline") and the City shall be entitled to withhold building permits requested after the Completion Deadline and Certificates of Completion, Temporary Certificates of occupancy, and Permanent Certificates of Occupancy for any structure within the Property completed after the Completion Deadline until such time as the required traffic signals have been completed; and

19. In addition to being responsible for a proportionate share of the cost of full traffic signals (all four legs) identified above, Owner is also

responsible for a proportionate share of the costs of full traffic signals at any other street intersections adjacent to the Property if an approved TIA reflects the need for such traffic signals. Owner shall make an in-lieu payment for a proportionate share of the cost of traffic signals infrastructure as follows. Owner shall make an in-lieu payment to the City based on the number of intersection corners located on or adjacent to the Property (i.e. if 2 corners of a 3-corner intersection are located on or adjacent the Property, Owner would be responsible for two thirds (2/3) of the cost of the full intersection (3 legs)). The in-lieu payment shall be calculated based on the actual cost of the traffic signal if it has been constructed or, if the payment is made before the traffic signal has been completed, upon an engineer's estimate of the probable cost of the signal approved by the City Engineer or designee. Owner shall, at no cost to the City, convey, in fee, lien free, and free of any easements or encumbrances unless specifically agreed to by the City, all right-of-way needed for the construction of the portion of the traffic signal that will be located on the Property. The dedication(s) and in-lieu payment(s) required herein shall be made at the earlier of the following: (i) before the issuance of any permit for any of the work reflected in a site plan, Minor Land Division, map of dedication, or final plat that includes, is adjacent to, or requires connection to the intersection where the traffic signal is needed; or (ii) before the recordation of any map of dedication, final plat or minor land division that includes, is adjacent, or requires connection to the intersection where the traffic signal is needed; and

20. Prior to recordation of the first map of dedication providing for the dedication of any right- of-way required to be dedicated to the City, the recordation of the first final plat or minor land division subdividing all or part of the Property, or the issuance of the first construction permit for work within the Property, whichever is earlier, Owner shall remit a payment to the City in the amount of $1,774,751.17, which represents the proportionate share of the costs of regional wastewater lines B, E, 1, J, and K attributable to the Property as described in the West Goodyear Cost Recovery Resolution that have been fully constructed; and

21. Unless Line L as described in the West Goodyear Wastewater Cost Recovery Resolution, ("Wastewater Line L") has been or is being fully constructed by others when the first map of dedication, final plat or minor land division subdividing all or part of the Property is recorded and/or when the first permit is issued for any work within the property, Owner shall, at its sole cost and expense except for reimbursements available under the West Goodyear Cost Recovery Resolution, design and construct Wastewater Line L or the section of Wastewater Line L that has not been completed. No Certificate of Completion, Temporary Certificate of Occupancy or Permanent Certificate of Occupancy for any structure within the Property shall be issued until Wastewater Line L has been completed and accepted by the City Engineer or designee subject to completion of the two-year warranty period; and

22. Unless Owner is constructing the entire section of Wastewater Line L, Owner shall make a cost recovery payment for its proportionate share for the cost of Line L pursuant to the West Goodyear Wastewater Cost

Recovery Resolution. The amount of the cost recovery payment owed shall be based on the percentage of the actual cost of Wastewater Line L if it has been constructed when the cost recovery payment is made or if Wastewater Line L is under construction but has not been completed or if Owner is not constructing Wastewater Line L, the amount of the cost recovery payment shall be $622,289.31 which is the amount reflected in the West Goodyear Wastewater Cost Recovery Resolution. The cost recovery payment for Line L shall be made prior to recordation of the first map of dedication, final plat or minor land division subdividing all or part of the Property or the approval of the issuance of the first construction permit for work within the Property, whichever is earlier. No Certificate of Completion, Temporary Certificate of Occupancy or Permanent Certificate of Occupancy for any structure within the Property shall be issued until Owner has made any cost recovery payment owed under the West Goodyear Wastewater Cost Recovery Resolution for Wastewater Line L; and

23. Unless Line M as described in the West Goodyear Wastewater Cost Recovery Resolution, ("Wastewater Line M") has been or is being fully constructed by others when the first map of dedication, final plat or minor land division subdividing all or part of the Property is recorded and/or when the first permit is issued for any work within the Property, Owner shall, at its sole cost and expense except for reimbursements available under the West Goodyear Cost Recovery Resolution, design and construct Wastewater Line M or the section of Line M not being constructed by others. No Certificate of Completion, Temporary Certificate of Occupancy or Permanent Certificate of Occupancy for any structure within the Property shall be issued until Wastewater Line M has been completed and accepted by the City Engineer or designee subject to completion of the two-year warranty period; and

24. Unless Owner is constructing the entire section of Wastewater Line M, Owner shall make a cost recovery payment for its proportionate share for the cost of Line M pursuant to the West Goodyear Wastewater Cost Recovery Resolution. The amount of the cost recovery payment owed shall be based on the percentage of the actual cost of Wastewater Line M if it has been constructed when the cost recovery payment is made or if Wastewater Line M is under construction but has not been completed or if Owner is not constructing Wastewater Line M, the amount of the cost recovery payment shall be $936,526.99 which is the amount reflected in the West Goodyear Wastewater Cost Recovery Resolution. The cost recovery payment for Line M shall be made prior to recordation of the first map of dedication, final plat or minor land division subdividing all or part of the Property or the issuance of the first construction permit for any work within the Property, whichever is earlier. No Certificate of Completion, Temporary Certificate of Occupancy or Permanent Certificate of Occupancy for any structure within the Property shall be issued until Owner has made any cost recovery payment owed under the West Goodyear Wastewater Cost Recovery Resolution for Wastewater Line M; and

25. Owner shall acquire and dedicate to the City, at no cost to the City, lien free and free of easements or encumbrances unless specifically agreed to by the City, easements, in a form acceptable to the City Attorney or designee, for property outside the boundaries of the Property needed to install Wastewater Line L and Wastewater Line M if Owner is required to construct such improvements and the rights-of-way and/or easements needed have not previously been dedicated to the City. The City shall have no liability or responsibility for acquiring any rights- of-way and/or easements needed for any of the regional wastewater trunk lines identified in the West Goodyear Wastewater Cost Recovery Resolution as benefiting the Property; and

26. If alterations of the Floodplain are required for the development of the Property, a CLOMR shall be submitted to the City Engineer prior to or concurrent with the first preliminary plat for the Property by the Goodyear City Council. A CLOMR shall be submitted to and approved by the City Engineer or designee prior to submittal of any map of dedication, final plat and/or civil construction drawings for development within the floodplain unless a CLOMR is not required as determined by the City Engineer, in which case Owner may proceed directly to LOMR which shall be submitted and approved by the City Engineer or designee before the issuance of construction permits for work within the floodplain.

SECTION 5. ABRIDGMENT OF OTHER LAWS

Except where expressly provided, nothing contained herein shall be construed to be an abridgement of any other ordinance, regulation, or requirement of the City of Goodyear.

SECTION 6. AMENDMENT TO ZONING MAP

The Zoning Map of the City of Goodyear is hereby amended to reflect the rezoning of the Property provided herein by certain document titled, “Supplementary Zoning Map No. 24-226” attached hereto as Exhibit A, and such amendment to the Zoning Map shall be filed with the City Clerk in the same manner as the Zoning Map of the City of Goodyear.

SECTION 7. CORRECTIONS

The Zoning Administrator, City Clerk, and the codifiers of this Ordinance are authorized to make necessary clerical corrections to this Ordinance, including, but not limited to, the correction of scrivener’s/clerical errors, references, ordinance numbering, section/subsection numbers and any references thereto.

SECTION 8. SEVERABILITY

If any section, subdivision, sentence, clause, phrase or portion of this Ordinance is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision and such holding shall not affect the validity of the remaining provisions of the ordinance or parts thereof.

SECTION 9. EFFECTIVE DATE

This Ordinance shall become effective as prescribed by law.

SECTION 10 PENALTIES

Any person who violates and provision of this ordinance shall be subject to penalties set forth in Section 1-2-3 of the City of Goodyear Zoning Ordinance as it may be amended from time to time and which currently provides:
Section 1-2-3 Violations and Penalties

A. It is unlawful to construct, erect, install, alter, change, maintain, use or to permit the construction, erection, installation, alteration, change, maintenance, or use of any house, building, structure, sign, landscaped area, parking lot or fence, or to permit the use of any lot or land contrary to, or in violation of any provisions of this Ordinance, or of any conditions, stipulations or requirements included as a condition of any applicable approval. Any land use that is specifically prohibited by this Ordinance or is unspecified and not classified by the Zoning Administrator is prohibited in any district.

B. Responsible Party. The responsible party for any violations hereunder is the owner of personal property improvements or real property and/or person in possession or control of any personal property improvements or real property (Person). The responsible party shall be responsible for any violations hereunder whether or not the responsible party or its agent committed the prohibited act(s) or neglected to prevent the commission of the prohibited act(s) by another.

C. Every Responsible Party shall be deemed responsible or guilty of a separate offense for each and every day during which any violation is committed or continued.

D. Penalty. Any Person who violates any of the provisions of this Ordinance and any amendments there to and/or any conditions, stipulations or requirements included as a condition of any applicable approval shall be:

a. Subject to civil sanctions of not less than one hundred dollars ($100) nor more than one thousand dollars ($1,000) per offense; or

b. Guilty of a class 1 misdemeanor, punishable by a fine not exceeding two thousand five hundred dollars ($2,500), or by a term of probation not exceeding three (3) years, or imprisonment for a term not exceeding six (6) months, or punishable by a combination of fine, probation or imprisonment. The City Prosecutor is authorized to file a criminal misdemeanor complaint in the City of Goodyear Municipal Court for violations hereunder.

SECTION 11. RECORDATION

This Ordinance shall be recorded with the Maricopa County Recorder's Office.

PASSED AND ADOPTED by the Mayor and Council of the City of Goodyear, Maricopa County, Arizona, by a _____ vote, this 28 day of April, 2025.

_____
Joe Pizzillo, Mayor

Date: _____

ATTEST:

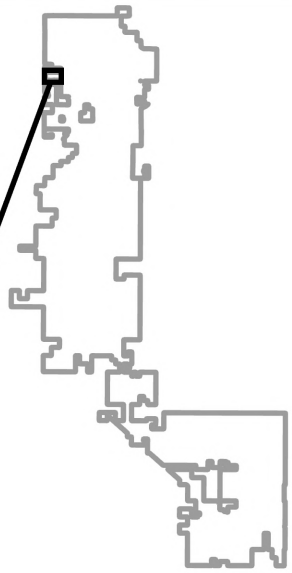
_____
Jasmine Pernicano, Acting City Clerk

APPROVED AS TO FORM:

_____
Roric Massey, City Attorney

OFFICIAL SUPPLEMENTARY ZONING MAP NO. 24-226

AMENDING ARTICLE 1, SECTION 1-1-4 OF THE ZONING ORDINANCE OF THE CITY OF GOODYEAR. AMENDED BY ORDINANCE NO._____, PASSED BY THE CITY COUNCIL OF THE CITY OF GOODYEAR, ARIZONA, THIS _____ DAY OF _____, 2025.

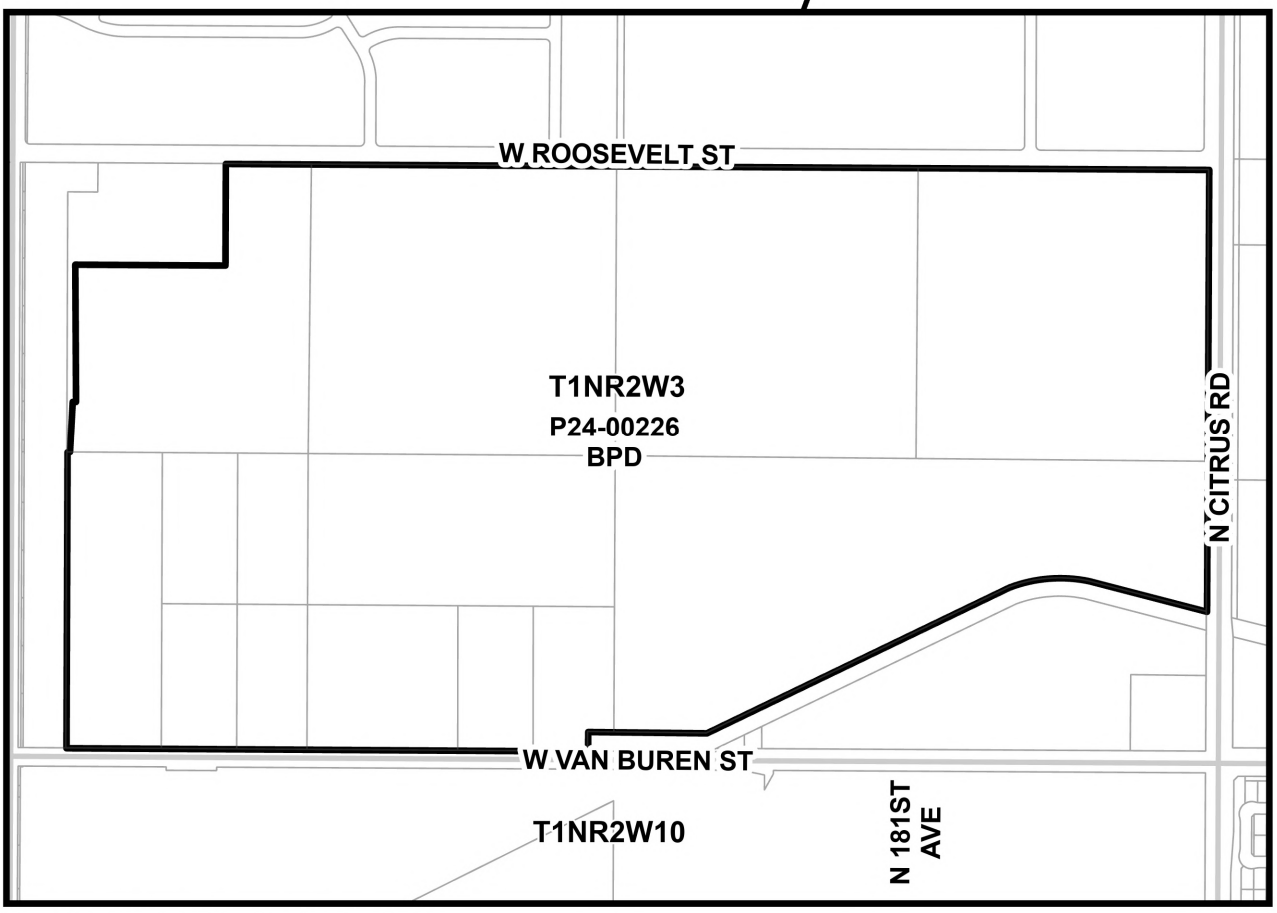


_____
MAYOR

_____
CITY CLERK

SUBJECT PROPERTY:

A PARCEL OF LAND LYING WITHIN A PORTION OF THE SOUTH HALF OF SECTION 3, TOWNSHIP 1 NORTH, RANGE 2 WEST, OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA



SOURCE: CITY OF GOODYEAR G.I.S.

CITY OF GOODYEAR, AZ - REZONE CASE

EXHIBIT		DATE:
A	REZONE FROM PAD TO PAD P24-00226	March 2025

Exhibit B

ZONING LEGAL DESCRIPTION

A PARCEL OF LAND LYING WITHIN A PORTION OF THE SOUTH HALF OF SECTION 3, TOWNSHIP 1 NORTH, RANGE 2 WEST, OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEARINGS AND DISTANCES SHOWN HEREON PER ALTA/NSPS LAND TITLE SURVEY, PORTION OF THE SOUTH HALF OF SECTION 3, TOWNSHIP 1 NORTH, RANGE 2 WEST OF GILA AND SALT RIVER MERIDIAN, PERFORMED BY HUBBARD ENGINEERING, PROJECT NUMBER 24121, DATED 4/26/2024.

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 3 FROM WHICH THE WEST QUARTER CORNER OF SAID SECTION 3 BEARS NORTH 00°12'33" EAST, A DISTANCE OF 2642.22 FEET;

THENCE SOUTH 89°38'30" EAST, ALONG THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 3, A DISTANCE OF 241.70 FEET TO THE POINT OF BEGINNING;

THENCE NORTH 00°12'33" EAST, A DISTANCE OF 1334.46 FEET;

THENCE NORTH 89°37'05" EAST, A DISTANCE OF 10.77 FEET;

THENCE NORTH 03°03'05" EAST, A DISTANCE OF 223.04 FEET;

THENCE SOUTH 89°39'55" EAST, A DISTANCE OF 14.52 FEET;

THENCE NORTH 00°19'10" WEST, A DISTANCE OF 599.63 FEET;

THENCE SOUTH 89°39'02" EAST, A DISTANCE OF 657.40 FEET;

THENCE NORTH 00°13'09" EAST, A DISTANCE OF 445.27 FEET;

THENCE NORTH 89°39'02" WEST, A DISTANCE OF 550.00 FEET;

THENCE NORTH 00°13'13" EAST, A DISTANCE OF 40.00 FEET;

THENCE SOUTH 89°39'02" EAST, ALONG THE NORTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 3, A DISTANCE OF 2264.42 FEET;

THENCE SOUTH 89°39'02" EAST, ALONG THE NORTH LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 3, A DISTANCE OF 2646.33 FEET;

THENCE SOUTH 00°17'12" WEST, ALONG THE EAST LINE OF THE SOUTHWAST QUARTER OF SAID SECTION 3, A DISTANCE OF 1967.84 FEET;

CONTINUED ON SHEET 2

REGISTERED LAND SURVEYOR
CERTIFICATE NUMBER
29865
JAMES A. BRUCCI
DATE SIGNED 7/9/24
ARIZONA U.S.A

TITLE:	**XB01**
DATE:	7/9/24
DESC:	ZONING EXHIBIT

HUNTER ENGINEERING
CIVIL AND SURVEY
10446 N. 74TH ST., SUITE 140
SCOTTSDALE, AZ 85258
T 480 991 3985
F 480 991 3986

PROJ.NO. XB01
PROJ.NO. RANK001

ZONING EXHIBIT

CONTINUED FROM SHEET 1

THENCE NORTH 74°48'31" WEST, A DISTANCE OF 555.62 FEET TO A POINT OF TANGENT CURVATURE CONCAVE SOUTHERLY WHOSE RADIUS IS 626.02 FEET AND WHOSE CHORD BEARS SOUTH 84°38'27" WEST A CHORD DISTANCE OF 439.51 FEET;

THENCE SOUTHWESTERLY ALONG SAID CURVE TO THE LEFT THROUGH A CENTRAL ANGLE OF 41° 06' 04" AN ARCH LENGTH OF 449.07 FEET;

THENCE SOUTH 64°05'56" WEST, A DISTANCE OF 1748.43 FEET;

THENCE NORTH 89°40'58" WEST, ALONG THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 3, A DISTANCE OF 102.84 FEET;

THENCE NORTH 89°38'30" WEST, A DISTANCE OF 2399.36 FEET TO THE POINT OF BEGINNING.

SAID DESCRIPTION CONTAINING 267.10 ACRES ±

(1) WEST 1/4 CORNER, SECTION 3, TOWNSHIP 1 NORTH, RANGE 2 WEST MCHD BCHH

(2) CENTER SECTION, SECTION 3, TOWNSHIP 1 NORTH, RANGE 2 WEST

(3) EAST 1/4 CORNER, SECTION 3, TOWNSHIP 1 NORTH, RANGE 2 WEST MCHD BCHH

(4) SOUTHEAST CORNER, SECTION 3, TOWNSHIP 1 NORTH, RANGE 2 WEST MCHD BCHH

(5) SOUTH 1/4 CORNER, SECTION 3, TOWNSHIP 1 NORTH, RANGE 2 WEST BCHH

(6) SOUTHWEST CORNER, SECTION 3, TOWNSHIP 1 NORTH, RANGE 2 WEST MCHD BCHH

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N00°12'33"E	1334.46'
L2	N89°37'05"E	10.77'
L3	N03°03'05"E	223.04'
L4	S89°39'55"E	14.52'
L5	N00°19'10"W	599.63'
L6	S89°39'02"E	657.40'
L7	N00°13'09"E	445.27'
L8	N89°39'02"W	550.00'
L9	N00°13'13"E	40.00'
L10	S89°39'02"E	2264.42'
L11	S89°39'02"E	2646.33'
L12	S00°17'12"W	1967.84'
L13	N74°48'31"W	555.62'
L14	S64°05'56"W	1748.43'
L15	N89°40'58"W	102.84'
L16	N89°38'30"W	2399.36'

CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	CHORD DIRECTION	CHORD LENGTH
C1	Δ =41°06'04"	626.02'	449.07'	S84°38'28"W	439.51'

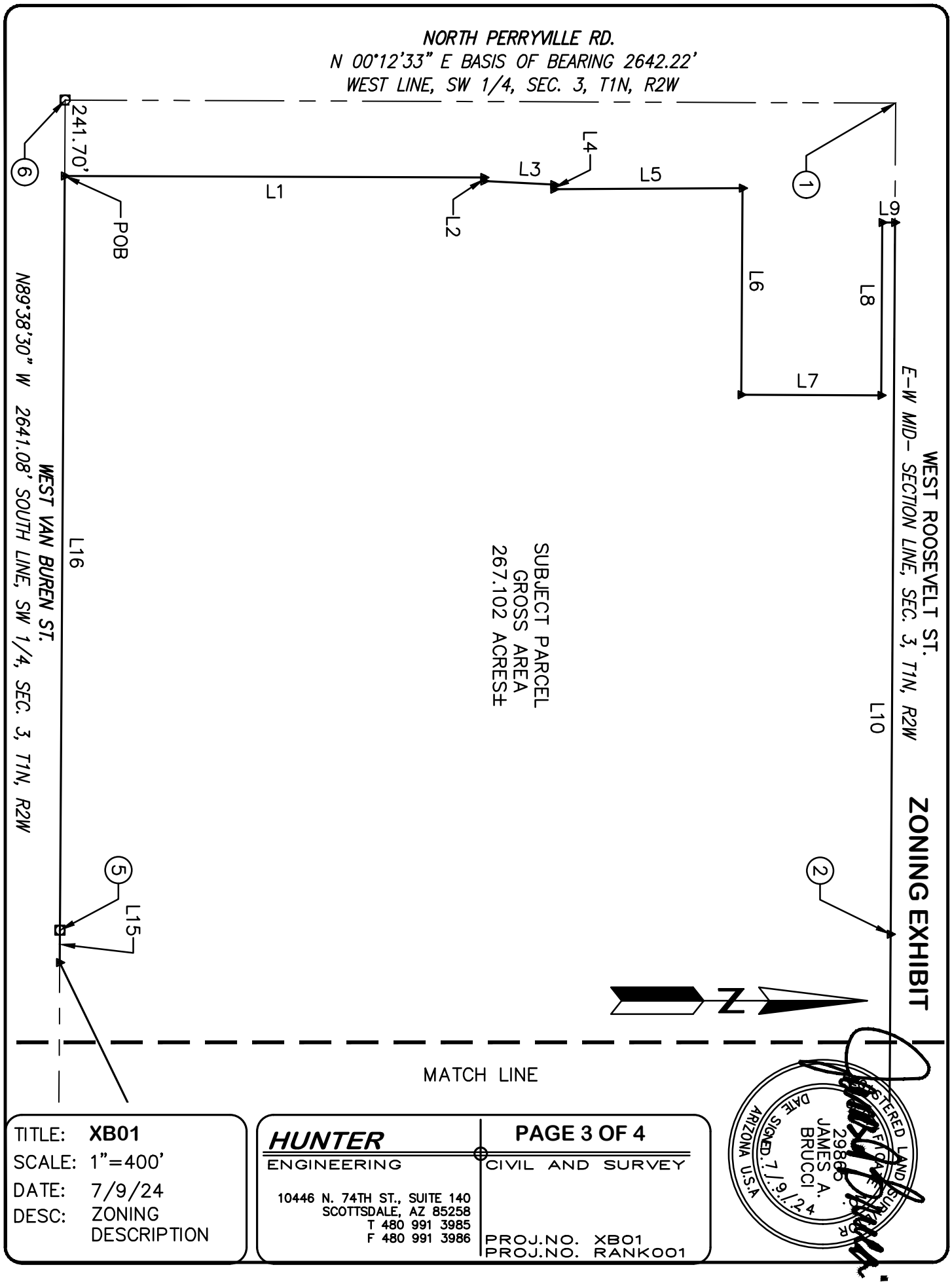
REGISTERED LAND SURVEYOR
CERTIFICATE NO.
29865
JAMES A.
BRUCCI
DATE SIGNED 7/9/24
ARIZONA U.S.A

TITLE: **XB01**
DATE: 7/9/24
DESC: ZONING DESCRIPTION

HUNTER
ENGINEERING
CIVIL AND SURVEY

10446 N. 74TH ST., SUITE 140
SCOTTSDALE, AZ 85258
T 480 991 3985
F 480 991 3986

PROJ.NO. XB01
PROJ.NO. RANK001

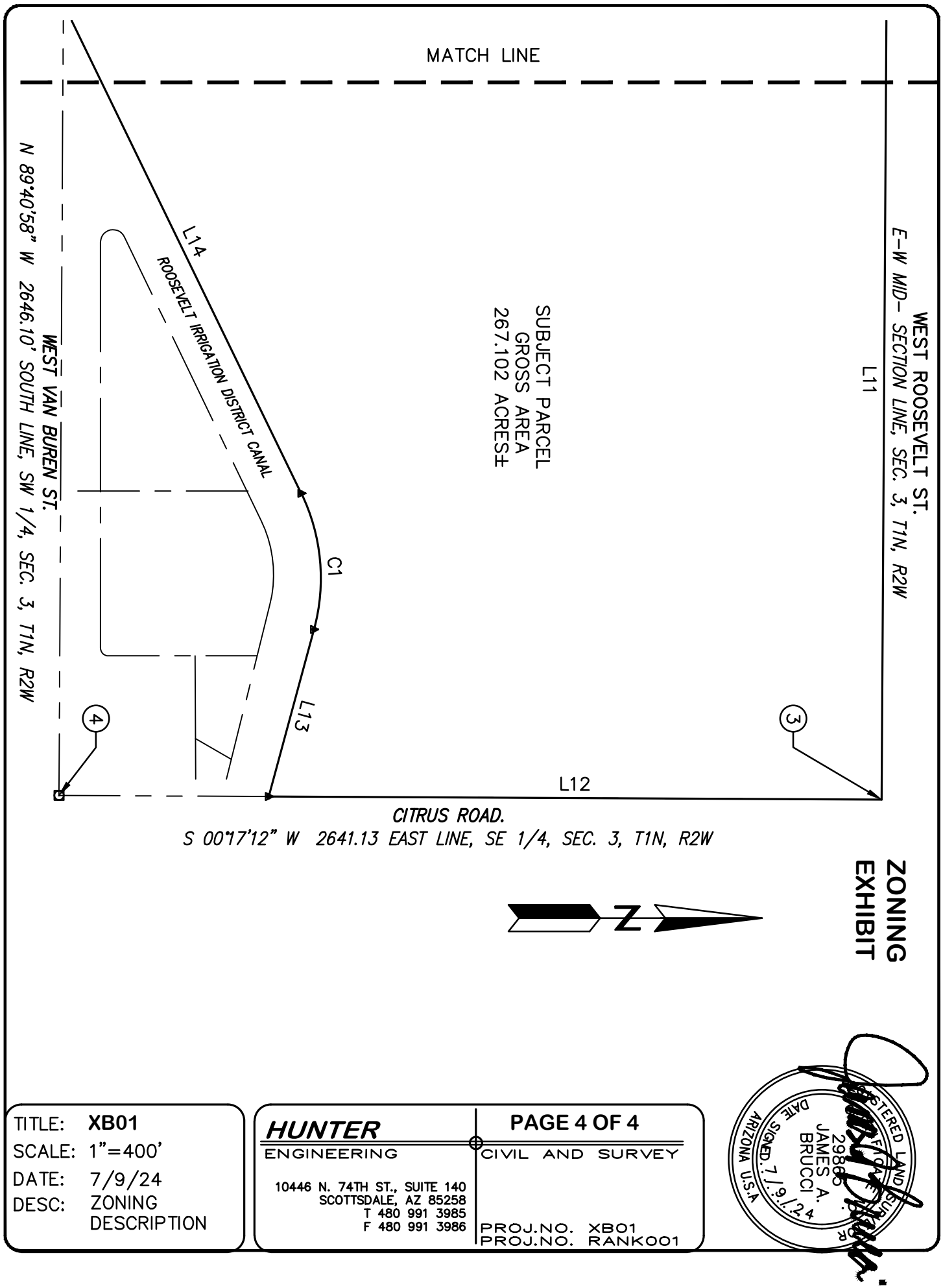


TITLE:	**XB01**
SCALE:	1"=400'
DATE:	7/9/24
DESC:	ZONING DESCRIPTION

HUNTER ENGINEERING | CIVIL AND SURVEY

10446 N. 74TH ST., SUITE 140
SCOTTSDALE, AZ 85258
T 480 991 3985
F 480 991 3986

PROJ.NO. XB01
PROJ.NO. RANK001



ZONING EXHIBIT

REGISTERED LAND SURVEYOR
29865
JAMES A. BRUCCI
DATE SIGNED 7/9/24
ARIZONA U.S.A

TITLE:	**XB01**
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DATE:	7/9/24
DESC:	ZONING DESCRIPTION

HUNTER ENGINEERING | CIVIL AND SURVEY

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PROJ.NO. XB01
PROJ.NO. RANK001

Exhibit C

I-10 CITRUS GATEWAY
PLANNED AREA DEVELOPMENT
March 2025

This I-10 Citrus Gateway Planned Area Development ("PAD") document is intended to provide the allowable land uses and regulatory zoning provisions to guide the implementation of project design for development of the Property through the plan review and development permit process in accordance with the provisions of the City of Goodyear, Arizona Zoning Ordinance (the "Goodyear Zoning Ordinance"). All administration and procedures shall adhere to Article 1, Article 2, and Article 4 of the Goodyear Zoning Ordinance and other applicable city, state, and federal requirements. In the event of a conflict between the provisions of this document and the Goodyear Zoning Ordinance, the provisions of this PAD shall prevail. In the event of a conflict between any stipulation or condition of approval in the ordinance adopting this document and the Goodyear Zoning Ordinance and/or the provisions of this PAD, the stipulation or condition of approval in the ordinance shall prevail.

PERMITTED USES

Permitted Uses by Land Use District:

Except as otherwise prohibited or excluded herein, the Permitted Uses for the development of the Property are as follows:

- The Permitted Uses in Land Use Districts designated as BPD in the Land Use Plan attached hereto as Exhibit 1 are as follows:
    - Uses permitted under Section 3-3-6 (BP, Business Park District) of the Goodyear Zoning Ordinance.
    - Wireless communication facilities are permitted without the need for a Special Use Permit provided they are developed in accordance with development standards established in Section 4-2-4 (Wireless Communication Facilities (Commercial)) of the Goodyear Zoning Ordinance.

- The Permitted Uses in Land Use Districts designated as BPD-LI in the Land Use Plan attached hereto as Exhibit 1 are as follows:
    - Uses permitted under Section 3-3-6 (BP, Business Park District) of the Goodyear Zoning Ordinance.
    - Uses permitted under Section 3-4-1 (I-1, Light Industrial Park District) of the Goodyear Zoning Ordinance.
    - Wireless communication facilities are permitted without the need for a Special Use Permit provided they are developed in accordance with development standards established in Section 4-2-4 (Wireless Communication Facilities (Commercial)) of the Goodyear Zoning Ordinance.

- The Permitted Uses in Land Use Districts designated as BPD-C in the Land Use Plan attached hereto as Exhibit 1 are as follows:
    - Uses permitted under Section 3-3-6 (BP, Business Park District) of the Goodyear Zoning Ordinance.
    - Uses permitted under Section 3-3-3 (C-2, General Commercial District) of the Goodyear Zoning Ordinance.
    - Wireless communication facilities are permitted without the need for a Special Use Permit provided they are developed in accordance with development standards established in Section 4-2-4 (Wireless Communication Facilities (Commercial)) of the Goodyear Zoning Ordinance.

- The Permitted Uses in Land Use Districts designated as BPD-C-LI in the Land Use Plan attached hereto as Exhibit 1 are as follows:
    - Uses permitted under Section 3-3-6 (BP, Business Park District) of the Goodyear Zoning Ordinance.
    - Uses permitted under Section 3-3-3 (C-2, General Commercial District) of the Goodyear Zoning Ordinance.
    - Uses permitted under Section 3-4-1 (I-1, Light Industrial Park District) of the Goodyear Zoning Ordinance.
    - Wireless communication facilities are permitted without the need for a Special Use Permit provided they are developed in accordance with development standards established in Section 4-2-4 (Wireless Communication Facilities (Commercial)) of the Goodyear Zoning Ordinance.

The following uses are prohibited in the entire Property:

- Adult bookstore, adult novelty store and adult theater
- Establishments that allow for the on-premises consumption of tobacco products, including cigarettes, cigars, and e-cigarettes or other vaping products
- Pawn shop

DEVELOPMENT STANDARDS

Except as otherwise amended by the PAD Development Standards Table below, the Development Standards for development within the Land Use District identified as BPD in the attached Land Use Plan are the Development Standards applicable to the BPD (Business Park District) Zoning District in the Goodyear Zoning Ordinance.

Except as otherwise amended by the PAD Development Standards Table below, the Development Standards for development within the Land Use Districts identified as BPD-LI in the attached Land Use Plan shall be either the Development Standards applicable to the BPD (Business Park District) Zoning District in the Goodyear Zoning Ordinance if a permitted BPD use is being developed or the Development Standards applicable to the I-1 (Light Industrial District) Zoning District in the Goodyear Zoning District if a permitted Light Industrial Use is being developed and the development standards will be set during the site plan process.

Except as otherwise amended by the PAD Development Standards Table below, the Development Standards for development within the Land Use Districts identified as BPD-C in the attached Land Use Plan shall be either the Development Standards applicable to the BPD (Business Park District) Zoning District in the Goodyear Zoning Ordinance if a permitted BPD use is being developed or the Development Standards applicable to the C-2 (General Commercial District) Zoning District in the City of Goodyear Zoning District if a permitted General Commercial (C-2) Use is being developed and the development standards will be set during the site plan process.

Except as otherwise amended by the PAD Development Standards Table below, the Development Standards for development within the Land Use Districts identified as BPD-C-LI in the attached Land Use Plan shall be either the Development Standards applicable to the BPD (Business Park District) Zoning District in the Goodyear Zoning Ordinance if a permitted BPD use is being developed; the Development Standards applicable to the C-2 (General Commercial District) Zoning District in the City of Goodyear Zoning District if a permitted General Commercial (C-2) Use is being developed; or the Development Standards applicable to the I-1 (Light Industrial District) Zoning District in the City of Goodyear Zoning District if a permitted Light Industrial Use is being developed and the development standards will be set during the site plan process.

PAD DEVELOPMENT STANDARDS TABLE

Districts	**C**	**BPD**	**LI**
*Standards Applicable to Development is Based on Permitted Use Being Developed as Determined at the Time of Site Plan	C-2	BPD	I-1
Minimum Net Site Area	10,000 square feet [1]	20,000 square feet [1]	1 acre
Minimum Lot Width	150 feet [1]		300 feet
Maximum Height (within 300 feet of the project property line)	56 feet [4]		56 feet
Maximum Height (more than 300 feet from project property line)	70 feet [4]		70 feet (additional 5 ft. allowed for mechanical equipment, screening, and architectural embellishments)
Maximum Height, more than 300 feet from project property line) with a Use Permit	100 feet [4]		100 feet
Maximum Building Coverage	50%		50%
Minimum Setback Front[5]	30 feet [2,3]		30 feet
Minimum Setback Side[5]	N/A [4]		30 feet
Minimum Setback Rear[5]	N/A [4]		20 feet
Minimum Setback Street Side[5]	30 feet [2]		30 feet
Above ground silos, tanks, and similar structures for accessory uses to the primary building	N/A		65 ft. Maximum (additional 5 ft. allowed for mechanical equipment, screening, and architectural embellishments)
Landscape Area	Minimum 15% of the net site area		Minimum 8% of the net site area

Retention Basins	Retention basins, in excess of 50% of the landscaped frontage, may be permitted to locate on the internal project side of the required open space trail if they are not substantially visible from public ROW with the exception of what is required by the City for regional drainage.

[1] Minimum net site area and lot width requirements do not apply for lots within a unified commercial development, which is a development intended for three or more businesses, so long as the development has permanent cross-access, shared parking and access easements, in a form approved by the City Attorney or his/her designee, necessary to meet minimum parking and maneuvering requirements and any other applicable requirements.

[2] Buildings with heights exceeding 30 feet shall provide an additional 1 foot of setback for each foot of building over 30 feet.

[3] The setback for lots within a unified commercial development, which is intended for three or more businesses with permanent cross access and shared parking easements, shall be measured from the nearest public streets. If there are conflicts between this exception and other requirements in the Goodyear Zoning Ordinance pursuant to which a site would be required to meet or exceed the minimum setbacks, this exception shall not apply.

[4] Buildings, as measured from the property line of a single family of two-family residential use or a single family or two-family residential district, shall provide a setback of 30 feet when the building height is 20 feet or less, a setback of 50 feet when the building height is 21 – 30 feet, and a setback of 50 ft. plus 5 ft for every 1 foot of additional building height over 30 ft when the building height exceeds 30 feet; Buildings adjacent to Multi-Family Use or District shall provide a 30 foot setback when the building height is 20 feet or less, and a setback of 50 feet when the building height is over 21 feet.

[5] There shall be a minimum 50-foot landscape setback along the southern, southeastern, and northern boundaries of the Property and there shall be a minimum 50-foot landscape setback along the western boundary of the Property when adjacent to a residential zoning district.

ADDITIONAL DEVELOPMENT STANDARDS APPLICABLE TO THE DEVELOPMENT OF PROPERTY

Except as expressly modified by the PAD, development of the Property shall comply with all applicable provisions of the Goodyear Zoning Ordinance, Design Guidelines, and Engineering Design Standards, including, but not limited to the following:

- Except as expressly modified by this PAD, the walls, fencing, and landscaping requirements set forth in Article 5 of the Goodyear Zoning Ordinance shall apply to development within the Property.

- Except as expressly modified by this PAD, the parking requirements set forth in Article 6 of the Goodyear Zoning Ordinance shall apply to development within the Property.

- Except as expressly modified by this PAD, all signage within the Property shall comply with the requirements set forth in Article 7 of the Goodyear Zoning Ordinance.

- Except as expressly modified by this PAD, the requirements set forth in Article 8 (General Provisions) of the Goodyear Zoning Ordinance shall apply to development within the Property.

The property shall comply with the lighting standards for Lighting Zone 2 and the lighting standards set forth in Article 10 (Outdoor Lighting Standards) of the Goodyear Zoning Ordinance.

Wireless Communication Facilities (WCF) shall follow the building setbacks applicable to development within the I-10 Citrus Gateway Commercial District.

- Wireless Communication Facilities shall not a exceed a maximum height of 65-feet except the WCF may be increased to 75-feet when the pole or tower incorporates design elements to conceal the WCF.

Loading, delivery, dock and roll-up doors, service and wash bays, and storage and loading areas may not front and/or back onto the northern, western, or southern property lines unless a landscape buffer with a minimum width of 100 feet is provided along the property lines. This buffer shall contain a double row of 24-inch box trees, and include a decorative eight-foot masonry wall, which shall be constructed in a location within or along the boundaries of the buffer to provide the most effective buffer as determined by the Zoning Administrator during the site plan process.

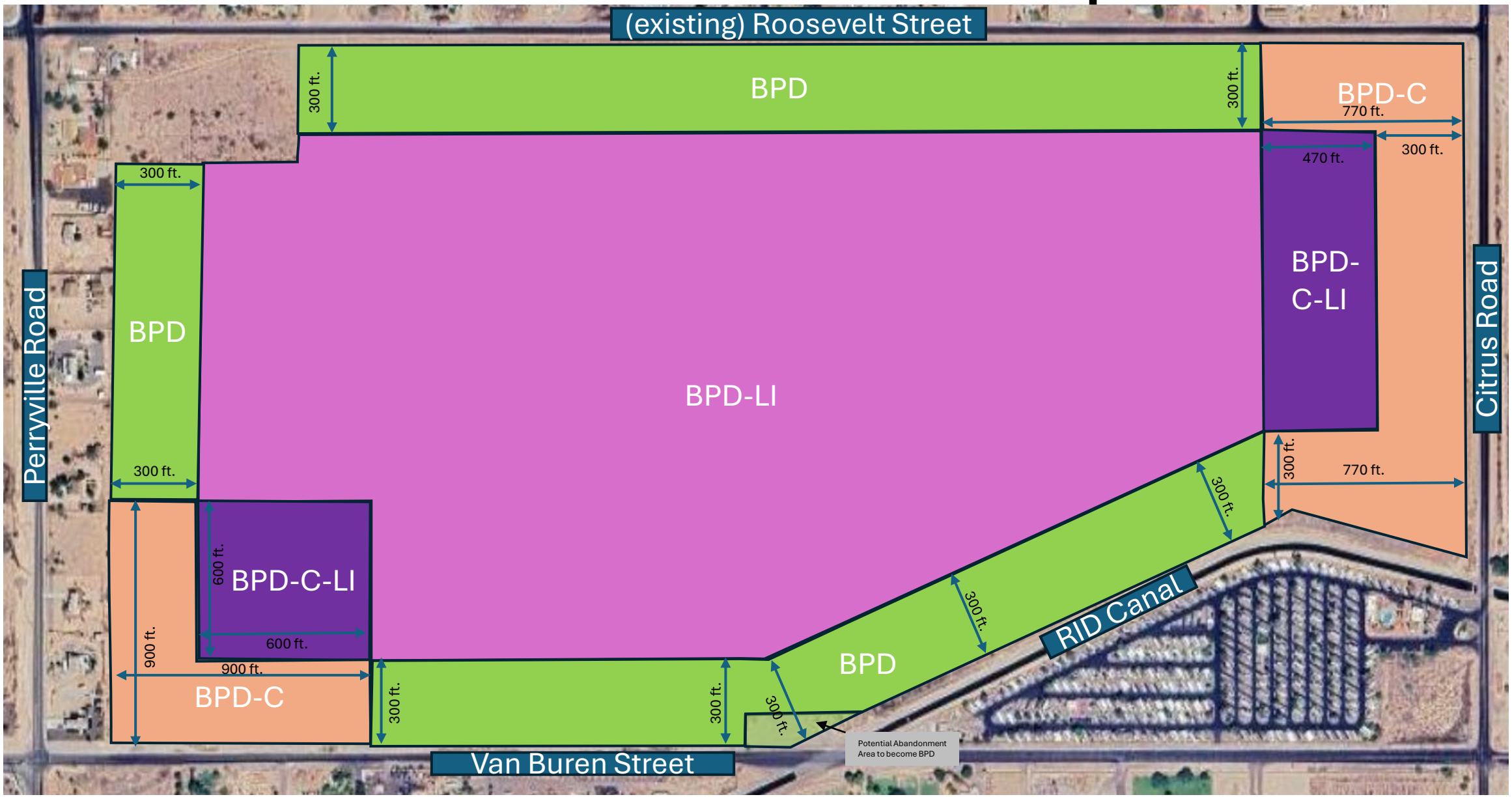
All truck courts shall be substantially screened from the public right of ways along N. Citrus Road, W. Roosevelt Street, and W. Van Buren Street and the residential properties to the west and south of the Property. Screening shall be accomplished through either/or a combination of building, walls, and berms. If screening is accomplished through walls in excess of 8 feet, landscaping including berms and trees shall be included at the base of the wall facing the public roadways and/or the residential properties.

Developer shall construct a trail as described herein. The construction of the trail satisfies the requirement that there be a minimum of 5% recreational open space within the entirety of the Property. The trail required herein shall comply with all of the following:

- The trail shall be a minimum of 10-feet wide and shall be constructed with compacted decomposed granite
- The trail shall run along the southern, southeastern, eastern and northern boundaries of the Property and shall be located within the landscape setbacks along the southern, southeastern, eastern, and northern boundaries of the Property.
- The trail shall be high and dry.
- The trail shall be open and accessible to the public and shall be maintained by a property owner's association.

- The trail shall include a minimum of ten amenities shall be included within the Trail with there being a minimum of four (4) being located within the trail along Roosevelt Street, two (2) being located within the trail along Van Buren Street, a minimum of one (1) being located along the RID canal, and a minimum of one (1) within the trail along Citrus Road. The amenities that are to be installed shall be any of the following: shaded trellises, plaza area, shaded seating area, gardens, or other amenities in conformance with Exhibit 2 Trail Fencing & Amenities that provide the public with meaningful recreational opportunities as determined by the Zoning Administrator.
- Unless otherwise approved in a written phasing plan approved by the Zoning Administrator or their respective designee, the trail described herein, including the amenities, required herein shall be completed along with the adjacent street improvements.

Land Use District Map



Legend:

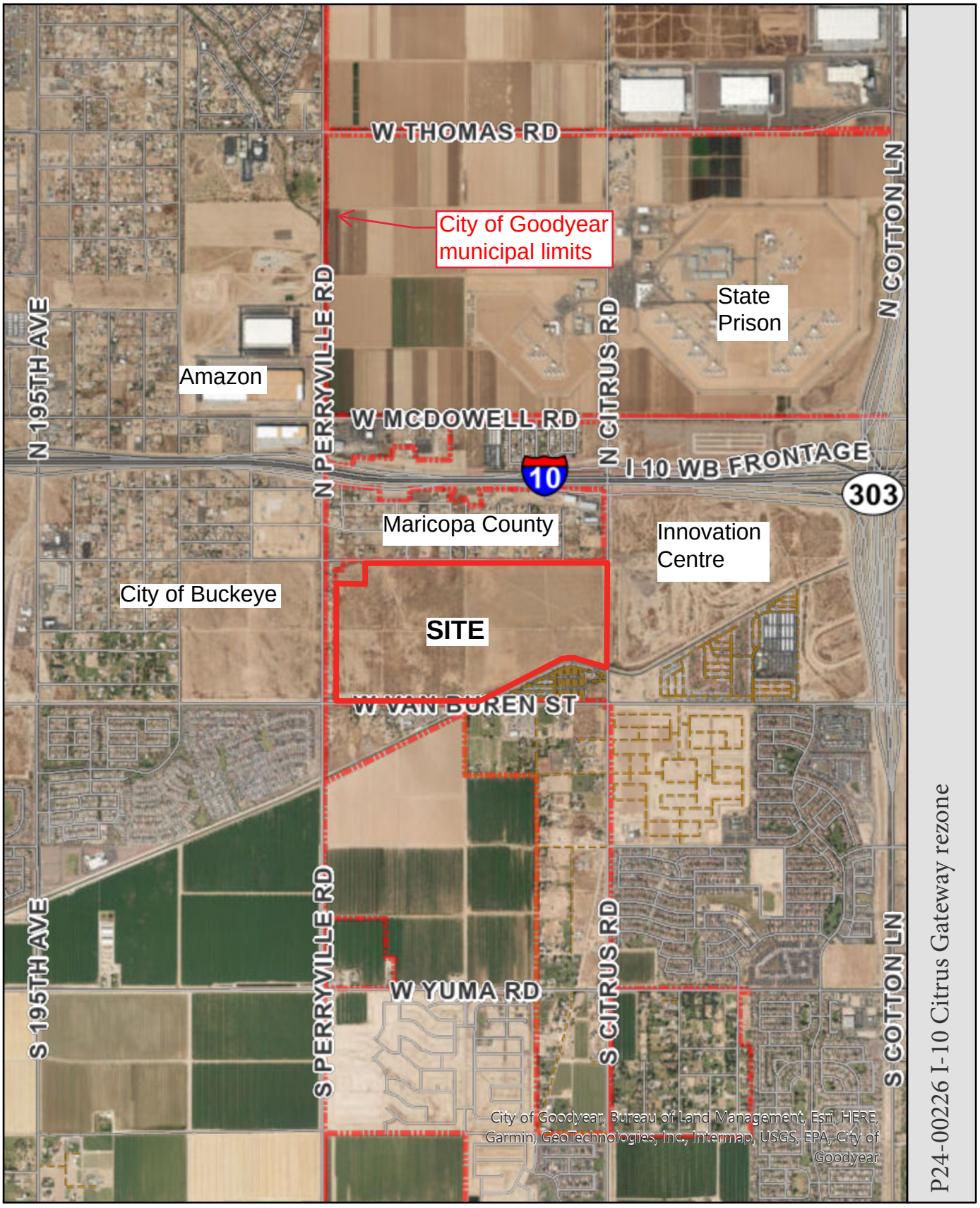
BPD
Business Park District

BPD-LI
Business Park District or Light Industrial

BPD-C
Business Park District or Commercial

BPD-C-LI
Business Park District or Commercial or Light Industrial

I-10 Citrus Gateway
South of W Roosevelt Street
West of S Citrus Road
East of N Perryville Road
North of W Van Buren Street



P24-00226 I-10 Citrus Gateway rezone

Project Narrative

I-10 Citrus Gateway

SWC of Citrus Road & Roosevelt Street

Application Number: P24-00226

1st Submittal: July 24, 2024
2nd Submittal: November 5, 2024
3rd Submittal: February 10, 2025

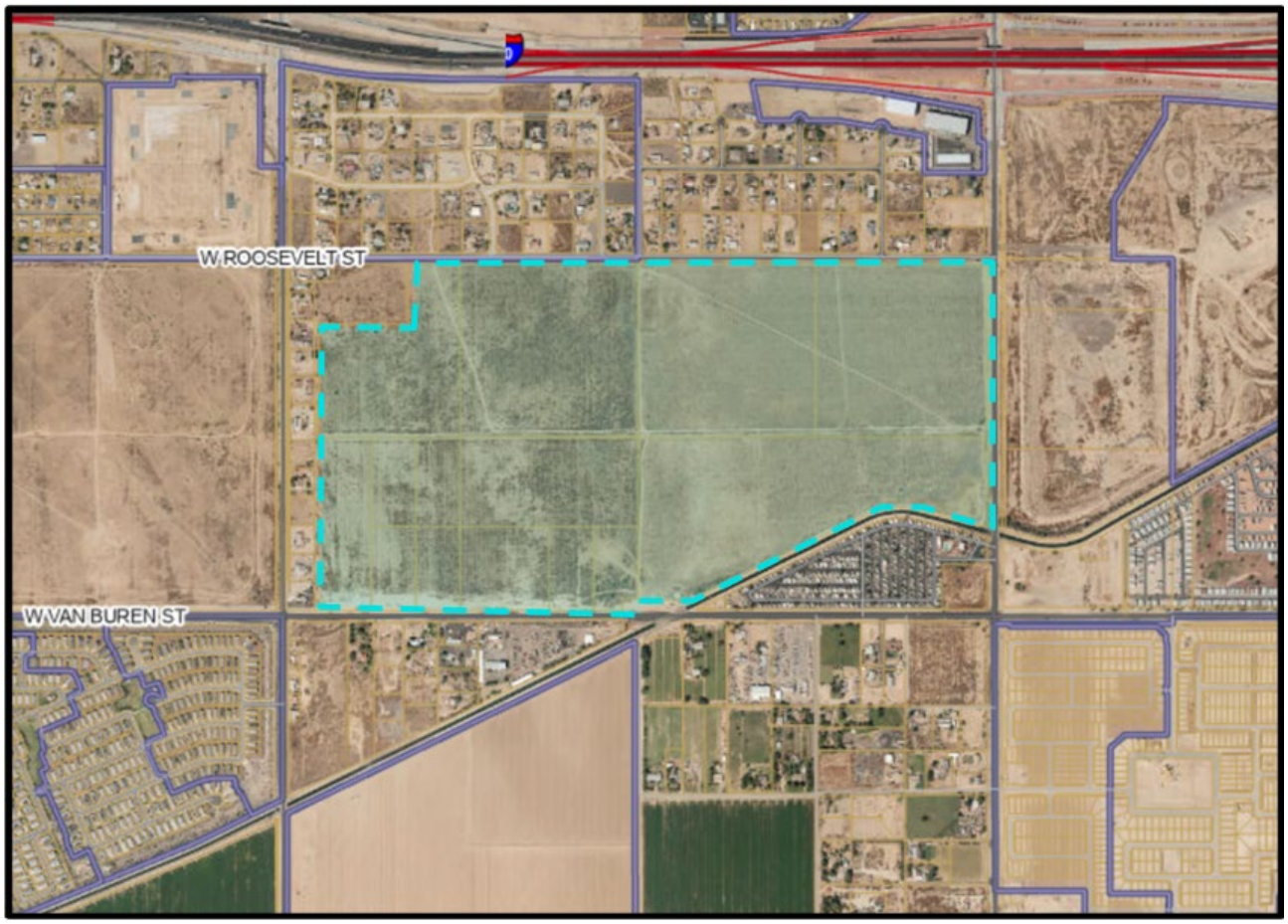
Prepared for:
Kernit Rankin
Rankin Real Estate LLC

Prepared by:
Berry Riddell LLC Wendy Riddell, Esq.
Elyse DiMartino, Planner
6750 East Camelback Road,
Suite 100
Scottsdale, Arizona 85251

REQUEST

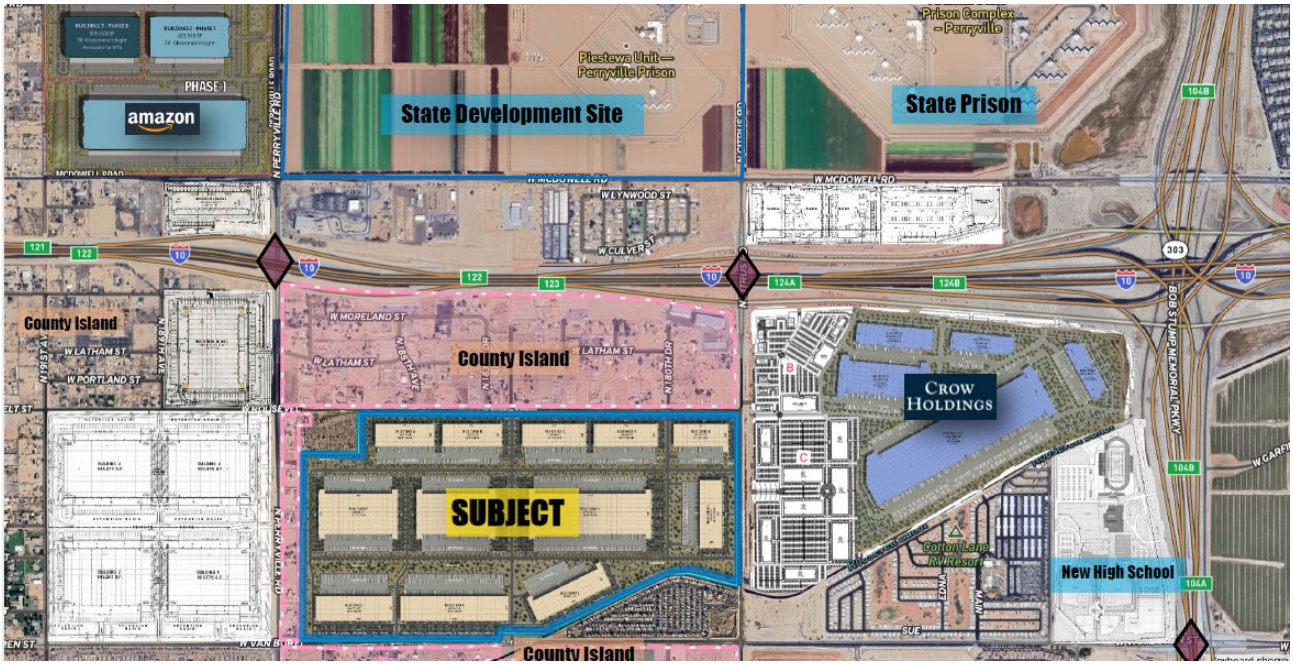
The purpose of this request is to seek a rezoning for a proposed industrial, business park, and commercial-oriented development on an approximately 267-acre property located at the southwest corner of Citrus Road and Roosevelt Street in the jurisdiction of Goodyear, Arizona ("the Site"). The Site is comprised of several parcels, as shown below. The Site is presently zoned as part of the Las Palmas at West Goodyear Planned Area Development ("Las Palmas PAD") and has a City of Goodyear 2035 General Plan (the "General Plan") designation of Neighborhood. A Major General Plan Amendment application will run concurrently with the rezoning request. The proposed request will amend the zoning from the Las Palmas PAD to Business Park District (BPD) with a PAD Overlay. Light Industrial District (I-1) and General Commercial District (C-2) uses will be permitted through the PAD Overlay as well.

Context Aerial



SURROUNDING CONTEXT

The Site is currently vacant, desert land that has never been developed. The Site is zoned as part of the Las Palmas PAD and designated as Neighborhood on the City of Goodyear 2035 General Plan ("General Plan"). The proposed land uses are consistent and compatible with the existing and planned uses in the surrounding area; however, a Major General Plan Amendment and rezoning will be required. The Site is located just south of the I-10 Freeway and west of the southern extension of the Loop 303 with three freeway exits in close proximity, and is ideally situated along Citrus Road, Roosevelt Street, and Van Buren Street. The Site is also located in the Luke Air Force Base ("LAFB") flight path, which encourages non-residential development.

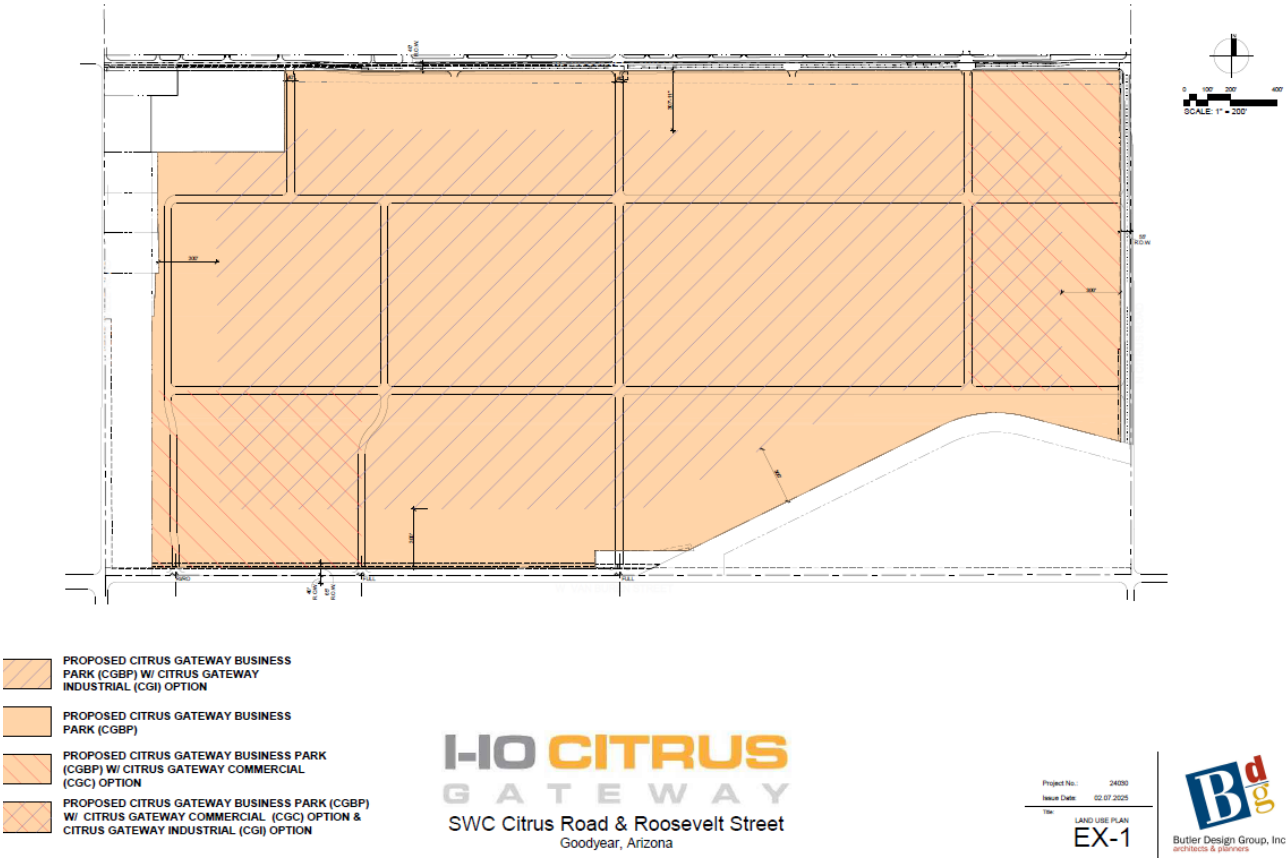


To the north of the Site, across Roosevelt Road, is the Quintana Estates single-family subdivision zoned Rural Zoning District – 1 acre per dwelling unit ("RU-43"), within the jurisdiction of Maricopa County. To the east of the Site, across Citrus Road, is vacant land zoned PAD as part of the Innovation Centre Mixed Use Masterplan, which will be developed with Commerce Park, Commercial, Retail and Entertainment, and Office uses. The southeast corner of the Site, across the canal, is a mobile home park, zoned Manufactured Home or Recreational Vehicle Park ("MH/RVP"). The southwest boundary of the Site is bounded by single-family homes in the jurisdiction of Maricopa County, zoned RU-43. The Site abuts single-family residences to the west, which are in the jurisdiction of Maricopa County and zoned RU-43; however, on the other side of Perryville Road, across from the Maricopa County residences is an approved +/- 147-acre industrial project in the City of Buckeye. Northwest of the Site, also in Buckeye's jurisdiction, is a completed industrial project. In other words, the proposed uses are in line with what is approved and constructed in the immediate area.

FLEX ZONES

The Business Park District will be permitted over the entire 267-acre site, with industrial and

commercial uses permitted on specified portions of the Site, as shown on the land use plan below. The proposed Business Park with Light Industrial Park Option will be permitted in the middle of the Site, as demonstrated by the purple cross-hatching. The east side of the proposed development, fronting Citrus Road and the intersection of Citrus and Roosevelt, and at the southwest corner of the Site, east of the intersection of Perryville and Van Buren, allows for Business Park with General Commercial Option uses demonstrated by the red cross-hatching. Finally, between the Business Park with Light Industrial Option in the center of the Site and the Business Park with General Commercial Option on the eastern boundary of the Site is the flex zone that is designed to allow Business Park with both General Commercial Option and a Light Industrial District Option.



Conceptual Land Use Plan (See Exhibit A)

The flex zone was carefully planned between the most intense use at the center of the Site and the least intense use along Roosevelt and Citrus frontages. Allowing commercial uses along public frontages will further an inviting street presence and seamless transition to future development across Citrus Road. Further, the flex zone will attract build to suit users or companies looking to locate their headquarters in Goodyear. The flex zone will also allow the Site to develop organically in a way that responds to the current market conditions as the area grows.

ECONOMIC & FISCAL IMPACTS

An analysis was recently completed by Elliott D. Pollack & Company to summarize the economic and fiscal impacts of the construction and operations of the Site, see **Exhibit B**. According to the analysis, the Site would produce "…4,777 person years of employment during construction

generating $361.1 million in wages and $913.3 million in total economic output." Post construction, once the Site is developed and operational, the Site will generate approximately "…7,537 total direct, indirect, and induced jobs paying $449.7 million in annual wages." The impact of annual operations on Greater Phoenix is $2 billion each year.

The analysis also shows that "one-time construction revenues would total an estimated $16.4 million for the City of Goodyear." At buildout, the total operating tax revenue for the Site is over $3 million each year for the City of Goodyear. "This includes direct real property taxes and estimated utility taxes as well as secondary revenue impacts generated by employees." Additionally, the State of Arizona, Maricopa County, and other districts will gain significant tax revenue each year from the Site.

Economic Impact Summary
Citrus 10 Commerce Center
(2024 Dollars)

	Industrial - Light Manufacturing	Industrial - Warehouse/ Distribution	Total
Construction Impact			
Person Years of Employment	2,844	1,932	**4,777**
Wages ($ mil)	$215.1	$146.1	**$361.1**
Output ($ mil)	$543.8	$369.4	**$913.3**
Operations Impact			
Jobs	4,954	2,583	**7,537**
Wages ($ mil)	$297.2	$152.5	**$449.7**
Output ($ mil)	$1,561.7	$396.4	**$1,958.1**

Source: Elliott D. Pollack & Company; IMPLAN

Fiscal Impact Summary
Citrus 10 Commerce Center
(2024 Dollars)

Construction Impacts	
City of Goodyear	
Primary direct taxes	$15,984,400
Secondary impacts from employees	$385,600
Total Construction Tax Revenues (one time)	**$16,370,000**
Operations Impacts	
State of Arizona	
Primary direct taxes	$470,400
Secondary impacts from employees	$10,326,400
Maricopa County	
Primary direct taxes	$643,800
Secondary impacts from employees	$5,440,800
City of Goodyear	
Primary direct taxes	$1,994,000
Secondary impacts from employees	$1,044,500
Schools & Special Districts	
School Districts	$3,337,700
Special Districts	$914,300
Total Operations Tax Revenues (annual)	**$24,171,900**

Source: Elliott D. Pollack & Co.; IMPLAN; ADOR; ATRA

PAD DEVELOPMENT STANDARDS DEVIATIONS

The purpose of a PAD Overlay is to "provide flexibility in an otherwise established land use district" by allowing a property to develop with development standards or criteria that deviate from regulations in proscribed zoning districts. Article 3-5 of the City of Goodyear Zoning Ordinance. As

previously stated, the intent is to allow Business Park uses over the entire Site and allow C-2 and I-1 uses on portions of the Site, as shown on the Conceptual Land Use Plan. A PAD Overlay is proposed to deviate from specified development standards required in the BP, C-2, and I-1 zoning Districts, as discussed below.

Maximum Height: The proposal requests an increase in height over the entire Site to 70' 100', when not located within 300' of residential uses. An increase in the height to 100' will be permitted upon the approval of a Conditional Use Permit by the City.

Response: An option to increase the overall height permitted on the Site will serve to attract a more diverse array of potential users to the Site, such as build to suit users or companies looking to locate their headquarters in Goodyear. A height increase may allow potential users to maximize storage capacity, implement a multilevel design, or promote efficiency in use of resources. Further, additional space allows companies to expand, boosting the provision of employment opportunities and furthering economic growth.

Further, the requirement of a Conditional Use Permit to increase the height allows future users of the Site to work collaboratively with the City to ensure the intensity of future developments respond to the changes in the surrounding context and continues to respect surrounding land uses.

Open Space: The proposal requests a minimum of 5% of open space over the entire Site, inclusive of the proposed trail on Roosevelt Street and Citrus Road.

Response: The open space is calculated for the entire Site rather than for each tenant, which will allow the Site to develop in a cohesive manner with open space carefully placed throughout the proposed development. The open space was planned to respect the surrounding context by utilizing landscape buffers and open space tracts near adjacent residents. The design also provides a public trail along Citrus and Roosevelt roads that residents and surrounding stakeholders can utilize. The trail may connect to any existing or future trails.

INFRASTRUCTURE

As required, conceptual water, drainage, and sewer memoranda have been prepared and submitted with this application. More detailed analyses will be prepared as the project moves forward.

Full half-street offsite improvements will be made if required along the adjacent portions of the Citrus Road, Roosevelt Street, and Van Buren Street frontages. This includes new driveways, AC pavement, curb and gutter, sidewalk, and landscaping. The on-site improvements will be contained within the Site.

A conceptual graphic showing the proposed roadway improvements for Roosevelt Street is shown below and is included in the Traffic Impact Analysis submitted with this application. The developer is presently engaging in, and will continue to engage in, coordination with MCDOT, ADOT, and the City on roadway improvements. The below graphic is conceptual and subject to change as the

developer continues to engage with the City, MCDOT, and ADOT.



ROOSEVELT STREET CORRIDOR

The conceptual design of Roosevelt Street improvements includes the creation of a frontage road on the north side of Roosevelt, adjacent to the existing residents. Separation of the frontage road from the southern portion of Roosevelt Street will be facilitated through a landscape buffer. The landscape buffer will contain ornamental trees and shrubs to create an attractive street presence and buffer the residents from Roosevelt Street and the proposed development. Again, the graphic below is conceptual in nature and is subject to change as the developer continues to work with the residents, City, MCDOT, and ADOT.



The grading and drainage for the site will be designed to retain the 100yr storm event in accordance with the City of Goodyear drainage design guidelines. Storm drainage will be conveyed via overland flow within channels, storm drain and over the surface to either retention basins or underground retention systems. The required storage volume will dissipate within 36 hours via drywells. The offsite stormwater flows will enter the site at its historic location and be routed to the proposed large basins along the north side of the RID canal or within drainage channels to the historic outfall along Van Buren Street. A LOMR will be processed to change the existing flood plain located with the property.

Water will be provided to the site by the Arizona Water Company. This project will be working with the Arizona Water Company to design and construct a new water campus and water well for the project. The new water campus will be located just east of Perryville Road, along

Roosevelt Street near the northwest corner of the site. In addition to the water campus, this project will be installing several new distribution lines to service the area. A fireflow test has already been performed and has demonstrated that there is adequate fireflow to service the site. A water report has been prepared and reviewed by the Arizona Water Company indicating there is adequate water infrastructure to support this development.

Sewer to the site will be provided by the City of Goodyear. This project is proposing to extend a new sewer line from Yuma Road to the site within Citrus Road. The on-site sewer is anticipated to be serviced with private sewer lines and maintained by the development. A sewer report has been provided which demonstrates the capacity of the downstream sewer system.

GENERAL PLAN

The City of Goodyear 2035 General Plan (the "General Plan") was adopted in 2024 with a vision of continuing to develop the City of Goodyear (the "City") as a *safe, attractive, vibrant community that supports the diversity of its economy, environment and people… through smart public and private investments.* (Goodyear 2035 General Plan, Pg. 10). The Site is designated as Neighborhood on the General Plan; however, a Major General Plan Amendment for this Site is being proposed concurrently.

REZONING CRITERIA

The City of Goodyear Zoning Ordinance (the "Ordinance") identifies specific criteria that guide rezoning requests to respond appropriately to the surrounding context of the Site, address demand for the types of uses proposed, and provide consistency with long-range planning goals. This proposal meets and exceeds those criteria as outlined below.

a. Consistency with the goals, objectives, policies and future land use map of City's General Plan; consideration of current market factors, demographics, infrastructure, traffic, and environmental issues; and if conditions have changed significantly since the Plan was adopted;

Response: This proposal is consistent with the long-range planning goals and policies outlined in the General Plan. The proposed uses provide much-needed employment and service uses in the area and will bring quality jobs to serve residents and visitors.

The proposed development is consistent with **Goal PI-2** of the General Plan, which encourages an "economic environment that nurtures locally based employment and economic opportunity." The proposed development aims to allow a mix of Business Park, Light Industrial, and General Commercial uses to be developed, creating employment opportunities in various industries. The proposal engages in diverse job creation through a flexible mix of uses that work to build and strengthen the local economy.

The project will support/comply with the policies of **Goal LC-2, Policy 1** "Promote the policy that new development should pay for itself through providing necessary on-site and off-site improvements to serve the development or adhering to the cost recovery ordinance." As the

subject site develops, appropriate public infrastructure will be installed and development impact fees will be paid as required by the City of Goodyear.

As previously mentioned, the developer is presently engaging in, and will continue to engage in, coordination with MCDOT, ADOT, and the City on roadway improvements. Full half-street offsite improvements will be made if required along the adjacent portions of Citrus Road, Roosevelt Street, and Van Buren Street including new driveways, AC pavement, curb and gutter, sidewalk, and landscaping.

b. Suitability of the subject property's physical and natural features for the uses permitted under the proposed zoning district;

Response: As previously mentioned, the Site is presently undeveloped land. This Site is generally flat with no physical or natural features that would hinder the development of the proposed project.

c. Compatibility of all potential uses allowed in the proposed zoning district with surrounding uses and zoning in terms of such things as land suitability, environmental impacts, density, nature of use, traffic impacts, aesthetics, infrastructure, and potential impact on property values;

Response: This rezoning request from PAD to BPD PAD, while retaining I-1 and C-2 uses on portions of the Site, will allow for consistent and compatible zoning. This proposal has been thoughtfully planned to respect the scale of the existing and planned land uses with focus on fitting the context of its surroundings, such as by positioning the more intense industrial buildings toward middle of the Site with significant buffers from residential. Ample building setbacks, landscape buffers, and open space tracts will serve to transition the proposed development into the surrounding uses. Increased traffic to the surrounding uses has been carefully considered and will be mitigated through roadway improvements and clearly delineated ingress and egress points.

d. Proposed zoning district's consistency with other land uses within the immediate area and whether uses allowed under proposed zoning district would be better suited to the subject property than the uses allowed under current zoning;

Response: The zoning is consistent with several approved industrial zoned projects in the immediate area. There are industrial approved projects to the west across Perryville Road at the northwest and southwest corners of Perryville and Roosevelt, and one to the northeast of the Site adjacent to the I-10 Freeway. The Site is also located adjacent to three roadways, Roosevelt Street, Van Buren, Street and Citrus Road.

Further, the adjacent residential in Maricopa County's jurisdiction will have significant buffers from the more intense industrial uses. As shown on the conceptual land use plan, industrial uses will be at least 300' from existing residential. Landscape buffers and large open space tracts will be concentrated around the perimeter of the design, specifically where adjacent to existing residential uses.

The developer is presently engaging in, and will continue to engage in, coordination with MCDOT and the City on roadway improvements.

e. Demand for the types of uses permitted in the proposed zoning district in relation to amount of land currently zoned and available to accommodate the demand;

Response: The proposed use is supported by other uses in the area. There are currently several industrial projects that are planned and/or being constructed in the immediate area. The proposed uses will complement what has already been approved. The uses will also provide much-needed employment and service uses in the area and will bring quality jobs to serve Goodyear residents and visitors.

Although users have not been identified for the Site at this time, the proposed development has been thoughtfully planned to incorporate a variety of Business Park, Industrial, and Commercial uses and development standards that will attract build to suit users or companies looking to locate their headquarters in Goodyear. Strategically placed flex zones, as discussed in detail previously, will allow the Site to develop organically and respond to market conditions as the area continues to grow and develop.

f. Demands for public services that will be generated by the uses permitted in the proposed zoning district and requirements for meeting such demands in terms of public infrastructure and facilities and other capital equipment, such as water supplies, water treatment, storage, and distribution facilities, wastewater treatment, recharge and distribution facilities, streets, bridges, schools and emergency services facilities and equipment;

Response: This proposal appropriately responds to the available public services and infrastructure in the surrounding vicinity. The Site is located within the Arizona Water Company's water service area and the City's sewer service area. While demand on sewer service will increase as a result from rezoning the Site from Residential to BPD PAD, the proposed and existing sewer lines have capacity to accommodate the increase. Access points to the Site will be located along existing roads. We do not anticipate any adverse impact to public infrastructure.

g. Potential adverse fiscal impacts that will result from providing services to areas not in proximity to where existing public services are provided;

Response: The Site is in proximity to a range of uses. We do not anticipate any adverse fiscal impacts. In fact, our economic and fiscal impact analysis shows that in total (at build out) the Site is projected to contribute an +/-24.2 million in tax revenue each year.

h. General public's concerns;

Response: The general public's input will be identified through the public review process. Given that this request is consistent with the existing and approved uses in the vicinity of the Site, it is not anticipated that there will be significant public concerns as a result of the proposal. That said, public outreach will be conducted as part of the rezoning process.

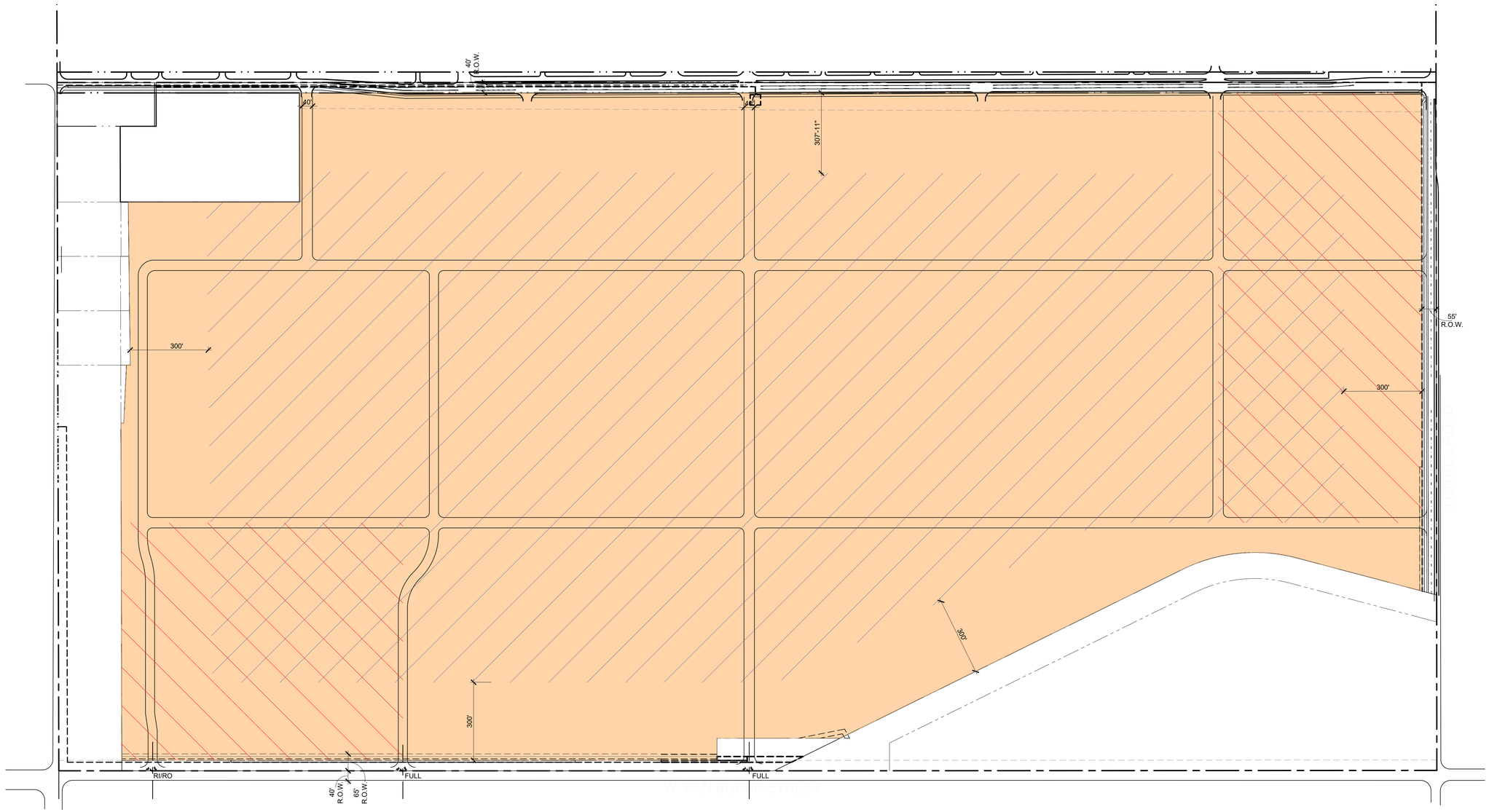
i. Whether the amendment promotes orderly growth and development; and

Response: This proposal presents a land use that will convert an underutilized, undeveloped Site into a property that will aid in the anticipated growth of the City. The proposal promotes the orderly growth and development of the area by adding commercial, business park, and industrial uses of an appropriate size and scale to their surrounding context. As previously mentioned, this project is consistent with several approved industrial zoned projects in the immediate area, including projects at the northwest and southwest corners of Perryville and Roosevelt, and one northeast of the Site adjacent to the I-10 Freeway. The Site is also located adjacent to three roadways, Roosevelt Street, Van Buren, Street and Citrus Road. Specific users have not yet been identified; however, the Conceptual Land Use Plan demonstrates how uses on the Site are planned to develop. To ensure a cohesive development, future users of the Site will be required to submit a site plan for review by the City.

j. Any other factors related to the impact of the amendment on the general health, safety and welfare of the citizens of the City and the general public.

Response: This proposal converts an underutilized, undeveloped Site into needed commercial, business park, and industrial uses that will create quality jobs and services for Goodyear residents and visitors and will have an overall positive impact on the City of Goodyear.

Exhibit A
Conceptual Land Use Plan



N

0 100' 200' 400'

SCALE: 1" = 200'

PROPOSED CITRUS GATEWAY BUSINESS PARK (CGBP) W/ CITRUS GATEWAY INDUSTRIAL (CGI) OPTION

PROPOSED CITRUS GATEWAY BUSINESS PARK (CGBP)

PROPOSED CITRUS GATEWAY BUSINESS PARK (CGBP) W/ CITRUS GATEWAY COMMERCIAL (CGC) OPTION

PROPOSED CITRUS GATEWAY BUSINESS PARK (CGBP) W/ CITRUS GATEWAY COMMERCIAL (CGC) OPTION & CITRUS GATEWAY INDUSTRIAL (CGI) OPTION

I-10 CITRUS GATEWAY

SWC Citrus Road & Roosevelt Street

Goodyear, Arizona

Project No.: 24030

Issue Date: 02.07.2025

Title:

LAND USE PLAN

EX-1

Butler Design Group, Inc
architects & planners

Exhibit B
Economic & Fiscal Impact Analysis

Citrus 10 Commerce Center
Economic & Fiscal Impact Report
Goodyear, Arizona



Prepared for:
Rankin Real Estate LLC

June 2024

Prepared by:

Elliott D. Pollack & Company
5111 N. Scottsdale Road, Suite 202
Scottsdale, Arizona 85250

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EXECUTIVE SUMMARY

Elliott D. Pollack & Company was retained to perform an analysis of the economic and fiscal impacts of the construction and operations of the 256.6-acre Citrus 10 Commerce Center. The project is planned for the site along Citrus Road north of Van Buren Street in Goodyear, Arizona. The site plan includes a total of approximately 3.5 million square feet of industrial space with a split of about 56%/44% for light manufacturing versus warehousing. Total construction costs are estimated at $461.7 million with total equipment purchases of $54.8 million.

Economic Impacts

Based on the assumptions of development for the site, the property will generate 4,777 person years of employment during the construction generating $361.1 million in wages and $913.3 million in total economic output.

Once construction is completed and the new development is operating at stabilization, the site will create an estimated 7,537 total direct, indirect, and induced jobs paying $449.7 million in annual wages. The total economic impact from annual operations on the Greater Phoenix region will be nearly $2.0 billion each year.

Economic Impact Summary
Citrus 10 Commerce Center
(2024 Dollars)

	Industrial - Light Manufacturing	Industrial - Warehouse/ Distribution	Total
Construction Impact			
Person Years of Employment	2,844	1,932	**4,777**
Wages ($ mil)	$215.1	$146.1	**$361.1**
Output ($ mil)	$543.8	$369.4	**$913.3**
Operations Impact			
Jobs	4,954	2,583	**7,537**
Wages ($ mil)	$297.2	$152.5	**$449.7**
Output ($ mil)	$1,561.7	$396.4	**$1,958.1**

Source: Elliott D. Pollack & Company; IMPLAN

Fiscal Impacts

One-time construction revenues would total an estimated $16.4 million for the City of Goodyear. This includes approximately $16.0 million from direct construction sales, use taxes, building permit fees and impact fees as well as an estimated $385,600 from the secondary impacts generated by the spending of construction employees.

Total operating tax revenue for the site (at buildout) is estimated at over $3.0 million each year for the City of Goodyear annually. This includes direct real property taxes and estimated utility taxes as well as secondary revenue impacts generated by employees. The local Buckeye High School and Liberty Elementary school districts would also benefit from the improvements to the site. Real property taxes are estimated to total over $3.3 million each year for these districts.

Other levels of government, such as the State of Arizona, Maricopa County, and other special districts will realize substantial tax revenue each year from the site as well. **In total, the Citrus 10 Commerce Center is projected to contribute an estimated $24.2 million in tax revenue every year at build out.**

Fiscal Impact Summary
Citrus 10 Commerce Center
(2024 Dollars)

Construction Impacts	
City of Goodyear	
Primary direct taxes	$15,984,400
Secondary impacts from employees	$385,600
Total Construction Tax Revenues (one time)	**$16,370,000**
Operations Impacts	
State of Arizona	
Primary direct taxes	$470,400
Secondary impacts from employees	$10,326,400
Maricopa County	
Primary direct taxes	$643,800
Secondary impacts from employees	$5,440,800
City of Goodyear	
Primary direct taxes	$1,994,000
Secondary impacts from employees	$1,044,500
Schools & Special Districts	
School Districts	$3,337,700
Special Districts	$914,300
Total Operations Tax Revenues (annual)	**$24,171,900**

Source: Elliott D. Pollack & Co.; IMPLAN; ADOR; ATRA

1.0 Introduction

Elliott D. Pollack & Company was retained to perform an analysis of the economic and fiscal impacts of the construction and operations of the 256.6-acre Citrus 10 Commerce Center. The project is planned for the site along Citrus Road north of Van Buren Street in Goodyear, Arizona. The site plan includes a total of approximately 3.5 million square feet of industrial space with a split of about 56%/44% for light manufacturing versus warehousing. This report will demonstrate the impacts to the City of Goodyear, local school districts, and regional levels of government.

Economic impact analysis examines the regional implications of an activity in terms of three basic measures: output, earnings, and job creation. Fiscal impact analysis, on the other hand, evaluates the public revenues and costs created by a particular activity. In fiscal impact analysis, the primary revenue sources of a city, county or state government are analyzed to determine how the activity may financially affect them.

This study prepared by Elliott D. Pollack & Company is subject to the following considerations and limiting conditions.

- It is our understanding that this study is for the client's due diligence and other planning purposes. Neither our report, nor its contents, nor any of our work were intended to be included and, therefore, may not be referred to or quoted in whole or in part, in any registration statement, prospectus, public filing, private offering memorandum, or loan agreement without our prior written approval.

- The reported recommendation(s) represent the considered judgment of Elliott D. Pollack & Company based on the facts, analyses and methodologies described in the report.

- Except as specifically stated to the contrary, this study will not give consideration to the following matters to the extent they exist: (i) matters of a legal nature, including issues of legal title and compliance with federal, state and local laws and ordinances; and (ii) environmental and engineering issues, and the costs associated with their correction. The user of this study will be responsible for making his/her own determination about the impact, if any, of these matters.

- This study is intended to be read and used as a whole and not in parts.

- This study has not evaluated the feasibility or marketability of any site for planned uses.

- All estimates regarding future development and improvements were provided by the client as estimates, with the understanding that final users may vary to meet their corporate needs. Data has been reviewed and verified to determine its reasonableness and applicability to the projects.

- The economic and fiscal impact results of this analysis could be higher or lower than estimated due to the uncertainty of the nature of the businesses that would locate to the project. The figures used in this analysis have been taken from a broad average of users and are meant to represent an example of what could happen should the averages be met.

- This economic and fiscal impact study evaluates the potential "gross impacts" of construction and operations activities. The term "gross impacts" as used in this study refers to the total revenue, jobs and economic output that would be generated by the construction and operations. The study does not consider the potential impact on other businesses in the trade area that may occur as a result of the proposed project.

- All dollar amounts are stated in current dollars and, unless indicated, do not take into account the effects of inflation.

- Our analysis is based on currently available information and estimates and assumptions about immediate as well as long-term future development trends. Such estimates and assumptions are subject to uncertainty and variation. Accordingly, we do not represent them as results that will be achieved. Some assumptions inevitably will not materialize, and unanticipated events and circumstances may occur; therefore, the actual results achieved may vary materially from the forecasted results. The assumptions disclosed in this study are those that are believed to be significant to the projections of future results.

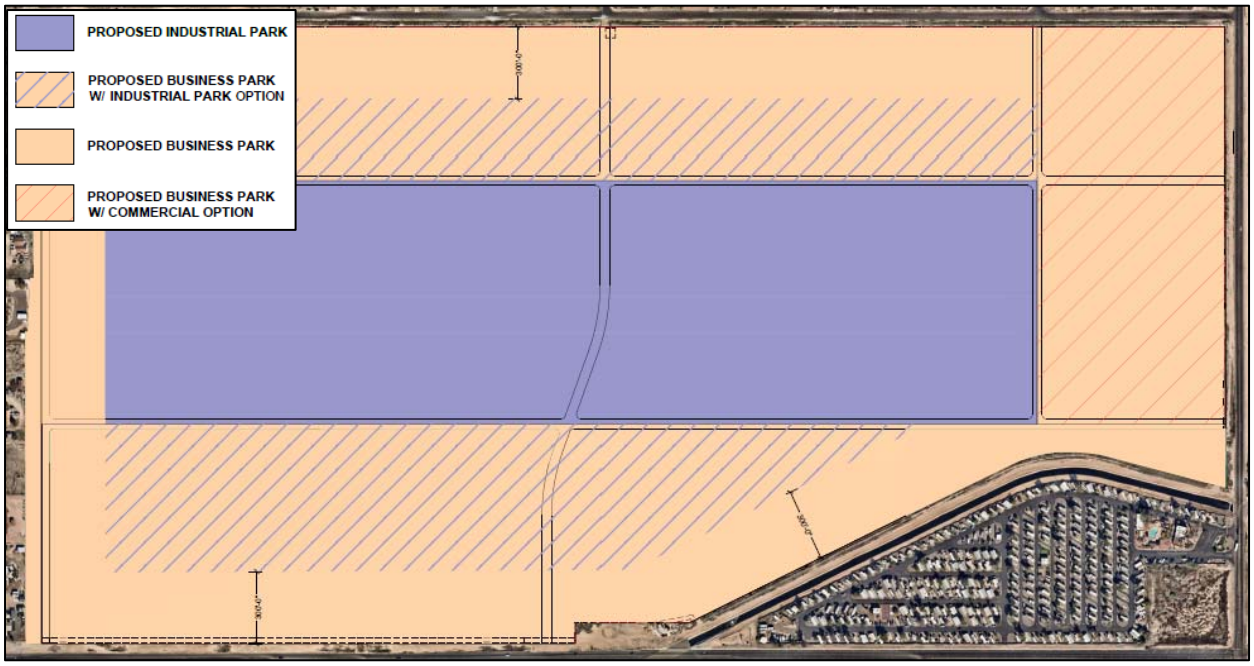
2.0 Background, Assumptions & Methodology

2.1 Background

The 256.6-acre site is located along Citrus Road south of Roosevelt Street in Goodyear, Arizona. The following site plan provides the proposed building square footage for the site. This report assumes an estimated 3.5 million total square feet with a 56%/44% split between light manufacturing and warehouse/distribution uses.

Proposed Site Plan





2.2 Analysis Assumptions

The assumptions used to estimate the economic and fiscal impacts of construction and operations for the commerce center are outlined below. The primary inputs are based on both assumptions supplied by the client as well as on basic economic fundamentals regarding economic impact analysis. For example, the Consumer Expenditure Survey is used to determine spending patterns of staff based on their respective wages and Census survey results are used for calculating the percentage of employees that live within the county or city in which they work. Certain industry standard assumptions were provided by the Maricopa Association of Governments, ULI and the Department of Energy. All values are expressed in 2024 dollars. Unless otherwise indicated, an inflation factor has not been included in this analysis.

The following table outlines the proposed project site plans for this analysis. The site plan includes a total of approximately 3.5 million square feet of industrial space with a split of about 56/44 for light manufacturing versus warehousing. Construction costs are projected to total $461.7 million with $54.8 million in total furniture, fixtures, and equipment (only a portion of the estimated FF&E would be subject to taxes as the manufacturing industry is exempt from sales and use taxes levied on equipment).

Project Site Plan Assumptions
Citrus 10 Commerce Center
(2024 Dollars)

Land Use	Square Feet	Cost per SF	Construction Cost	FF&E
Industrial - Light Manufacturing	1,963,600	$140	$274,908,000	$39,273,000
Industrial - Warehouse/ Distribution	1,556,300	$120	$186,753,000	$15,563,000
Total	**3,519,900**		**$461,661,000**	**$54,836,000**

NOTE: Equipment used in manufacturing process is exempt from sales tax in Arizona.
Source: Elliott D. Pollack & Company; Rankin Real Estate LLC, ULI; SIOR

Assumptions used in calculating the impact of operations are outlined in the following table. Square feet per employee range from 750 for light manufacturing and 1,000 for warehousing industrial uses. Rents are projected to average $10.80 per square foot and monthly utilities are projected at $3.50 per square foot for light manufacturing to $3.00 for warehousing uses. The stabilized occupancy throughout the project is expected to average 95%.

Operating Assumptions
Citrus 10 Commerce Center
(2024 Dollars)

Land Use	Square Feet per employee	Rent per SF	Stabilized Occupancy	Utilities per SF
Industrial - Light Manufacturing	750	$10.80	95%	$3.50
Industrial - Warehouse/ Distribution	1,000	$10.80	95%	$3.00

Source: SIOR; Marshall & Swift; Rankin Real Estate LLC

2.3 Economic Impact Methodology

Economic impact analysis examines the economic implications of an activity in terms of output, earnings, and employment. For this study, the analysis focused on the construction impacts as well as the ongoing operations including direct expenditures by the projected companies that will occupy the commercial space, on property taxes, salaries, sales, and operating supplies.

The different types of economic impacts are known as direct, indirect, and induced, according to the manner in which the impacts are generated. For instance, direct employment consists of permanent jobs held by project employees. Indirect employment is those jobs created by businesses that provide goods and services essential to the operation or construction of the project. These businesses range from manufacturers (who make goods) to wholesalers (who deliver goods) to janitorial firms (who clean the buildings). Finally, the spending of the wages and salaries of direct and indirect employees on items such as food, housing, transportation, and medical services creates induced employment in all sectors of the economy, throughout the region. These secondary effects are captured in the analysis conducted in this study.

Multipliers have been developed to estimate the indirect and induced impacts of various direct economic activities. The IMPLAN Group developed the multipliers used in this study and were selected based on the land use type.

The economic impact is categorized into three types of impacts:

(1) **Employment Impact** – the total wage and salary and self-employed jobs in a region. Jobs include both part time and full time workers.

(2) **Earnings Impact** – the personal income, earnings, or wages, of the direct, indirect, and induced employees. Earnings include total wage and salary payments as well as benefits of health and life insurance, retirement payments and any other non-cash compensation.

(3) **Economic Output** – also referred to economic activity, relates to the gross receipts for goods or services generated by the company's operations.

Economic impacts are by nature regional in character. Such impacts are best illustrated when not assigned to a specific locality, although clearly the primary impact of job creation would be on the county where the project is located. However, many other communities in the surrounding region would also benefit from the operations of the proposed development.

2.4 Fiscal Impact Methodology

Fiscal impact analysis studies the public revenues associated with a particular economic activity. The primary revenue sources of local, county, and state governments (i.e., taxes) are analyzed to determine how an activity may affect the various jurisdictions. This section will evaluate the impact of the project on City of Goodyear revenues. The fiscal impact figures cited in this report have been generated from information provided by a variety of sources including the U.S. Bureau of the Census; the U.S. Department of Labor; the Internal Revenue Service; the State of Arizona; the Arizona Tax Research Association; and the U.S. Consumer Expenditure Survey. Elliott D. Pollack & Company has relied upon the estimates of operating revenues outlined in this study. Unless otherwise stated, all dollar values are expressed in 2024 dollars.

Fiscal impacts are categorized by type in this study, similar to economic impact analysis. The major sources of revenue generation for governmental entities are calculated based on ongoing operations. Employees will spend part of their salaries on local goods and services and pay taxes on the homes they occupy. This spending will contribute to revenues collected by the State that are ultimately shared with local governments.

Some revenues are more direct and definitive than others. Revenues have been defined in this analysis as either **primary** or **secondary**, depending on their source and how the dollars flow through the economy into government tax accounts. For instance, some revenues, such as construction sales tax or retail sales taxes are definable, straightforward calculations based on the value of construction or direct sales. These revenues are described in this study as primary revenues. Secondary revenues, on the other hand, flow from the wages of those direct, indirect, and induced employees who are supported by the project. Revenue projections are based on typical wages of the employees working on the project, their spending patterns, projections of where they might live, and other assumptions outlined earlier in this report. The following is a description of the applicable revenue sources that will be considered for this analysis.

- Construction Sales Tax
  The State, counties, and local governments levy a sales tax on materials used in the construction of buildings or development of land improvements. That tax is calculated by State law under the assumption that 65% of the construction cost of the facility and its land improvements are related to construction materials with the remaining 35% devoted to labor. The sales tax rate is then applied to the 65% materials figure. The sales tax on construction materials is a one-time collection by the governmental entity. The State

levies a 5.6% sales tax on construction activity (a portion of which is shared with local governments) while the City of Goodyear's rate is 3.5%.

- Sales Tax on Retail, Restaurants, Commercial Lease & Utilities

  The State, counties, and local cities in Arizona charge sales tax on retail goods, and utility usage. Cities and towns also levy tax on commercial leases. The sales tax rate for the State is 5.6%. Portions of this tax are redistributed through revenue sharing to counties and cities throughout Arizona based on population. The City of Goodyear's retail sales tax rate and utility sales tax rate is 2.5%. These tax rates are applied to commercial lease revenue and direct utility usage, as well as to the spending of direct, indirect, and induced employees.

- Property Taxes

  The development will be subject to direct property taxes. By 2027, commercial properties will be levied at a 15% assessment ratio. Employees supported by the operations of the businesses will pay property taxes on the homes they occupy. In order to estimate these secondary property taxes, the assessed full cash value along with the projected value of a typical housing unit has been calculated. Residential properties are valued at a 10% assessment ratio. The following table provides the tax rates used in the analysis for each jurisdiction.

Property Tax Rates

	Rate
County General Fund	1.2044
City of Goodyear	1.7350
Goodyear School Districts	
Liberty Elementary	4.0943
Buckeye High School	2.9938
Special Districts	
Central AZ Water District	0.1400
Maricopa Special Health District	0.2716
Fire District Assistance Tax	0.0081
Flood Control Of Maricopa County	0.1536
Library District	0.0488
Community College District	1.1388
WEST-MEC	0.1807
TOTAL	**11.9691**

Source: Maricopa County Treasurer

- State Shared Revenues

  Each city or city in Arizona receives a portion of State revenues from four different sources - State sales tax (see description above), State income tax, vehicle license tax and highway user tax. The formulas for allocating these revenues are primarily based

on population. Counties also share in the revenue sources of the State, with the exception of income tax.

State Income Tax

The State of Arizona collects taxes on personal income. The tax rate used in the analysis averages about 1.6% of earnings. These percentages are based on the most recently available income tax data from the State and the projected wage levels of jobs created by the construction and operations impact. This tax is applied to the wages and earnings of direct and indirect employment. Portions of this tax are redistributed through revenue sharing to cities throughout Arizona based on population.

HURF Taxes

The State of Arizona collects specific taxes for the Highway User Revenue Fund (HURF). Both the registration fees and the motor vehicle fuel tax (gas tax) are considered in this analysis. The motor vehicle fuel tax is $0.18 per gallon and is calculated based on a vehicle traveling 12,000 miles per year at 20 miles per gallon. Registration fees average $66 per employee in the State of Arizona. These factors are applied to the projected direct and indirect employee count. Portions of these taxes are distributed to cities and counties throughout Arizona based on a formula that includes population and the origin of gasoline sales.

Vehicle License Tax

The vehicle license tax is a personal property tax placed on vehicles at the time of annual registration. This factor is applied to the projected direct, indirect, and induced employee count. The average tax used in this analysis is $325 and portions of the total collections are distributed to the Highway User Revenue Fund. The remaining funds are shared between cities and counties in accordance with population-based formulas.

The above tax categories represent the largest sources of revenues that would be generated to the City of Goodyear and its school districts. The revenue impacts do not include certain revenue sources such as personal property taxes or corporate income taxes. All tax collections represented in this analysis are gross collections and do not take into consideration any incentives or development agreements that may occur.

3.0 Economic Impacts

The economic impact includes total economic output, job creation, and wages during construction as well as ongoing impacts from the proposed uses of the site and the operations of these businesses. The results presented are based on the assumptions regarding land use described in Section 2.0 of this report. Though employment would primarily impact the local area, the development would likely draw employees from the entire Greater Phoenix area. Therefore, the economic impacts are expressed as a regional benefit.

3.1 Economic Impact of Construction

The impact from construction is based on the total value of the proposed structures being built. Since the impacts represent the entire construction phase, employment impacts are expressed as person years of employment. Person-years of employment are the aggregate of each construction job that is recreated year after year throughout the construction period. To derive the annual average, employment, wages, and economic output can be divided by the expected number of years it may take to complete the development. Annual averages may be higher or lower depending on the timing of final buildout. Additionally, these construction impacts will disappear when the development reaches completion.

Over the course of construction, an estimated 2,769 direct person years of employment would be generated from the construction of the project. These are the on-site construction jobs. An additional 1,004 indirect and induced person years of employment would be created for a total employment impact of 4,777 person years of employment created by the construction and other site work on the properties. In total, $361.1 million in wages would be paid to these workers and the construction would create $913.3 million in economic impact throughout the region.

Economic Impact of Construction
Citrus 10 Commerce Center
(2024 Dollars)

	Person Years of Employment	Wages ($ mil)	Economic Output ($ mil)
Direct	2,769	$220.3	$461.7
Indirect	655	$53.8	$175.4
Induced	1,353	$87.1	$276.1
Total	**4,777**	**$361.1**	**$913.3**

NOTE: The total may not equal the sum of the impacts due to rounding. All dollar figures are in constant dollars. Inflation has not been included in these figures.

Source: Elliott D. Pollack & Company; IMPLAN

3.2 Economic Impact of Operations

Operational impacts are considered permanent once all operations have reached stabilization. The impacts described in this section are expected to recur each year as long as the anticipated land use mix builds out as projected.

The projected light industrial uses would support 2,487 direct jobs. Taking into account the ripple effects throughout the economy, a total of 4,954 jobs would be created from the proposed light industrial development with $297.2 million in wages and $1.6 billion in economic output.

The warehouse and distribution uses at the site would generate an estimated 1,478 direct jobs (based on 1,000 square feet per employee and a 95% occupancy). The total impact of this industrial use would be an estimated 2,583 jobs, $152.5 million in wages and $396.4 million in economic output.

In total, the proposed project would generate an estimated of 7,537 jobs annually, $449.7 million in wages and nearly $2.0 billion each year in economic output.

Economic Impact of Operations
Citrus 10 Commerce Center
(2024 Dollars)

	Industrial - Light Manufacturing	Industrial - Warehouse/ Distribution	Total
Jobs			
Direct	2,487	1,478	**3,966**
Indirect	1,353	534	**1,887**
Induced	1,113	571	**1,685**
Total	**4,954**	**2,583**	**7,537**
Wages ($ mil)			
Direct	$126.6	$82.1	**$208.7**
Indirect	$98.9	$33.6	**$132.5**
Induced	$71.7	$36.8	**$108.5**
Total	**$297.2**	**$152.5**	**$449.7**
Economic Output ($ mil)			
Direct	$994.8	$168.7	**$1,163.5**
Indirect	$339.5	$111.0	**$450.5**
Induced	$227.4	$116.7	**$344.1**
Total	**$1,561.7**	**$396.4**	**$1,958.1**

NOTE: The total may not equal the sum of the impacts due to rounding. All dollar figures are in constant dollars. Inflation has not been included in these figures.

Source: Elliott D. Pollack & Company; IMPLAN

4.0 Fiscal Impacts

The tables included in this section summarize revenues that would ultimately flow to the City of Goodyear during construction and then ongoing annually once construction is complete. Both the primary (direct) and secondary (generated by the spending of employees) are included. Revenue projections are based on assumptions outlined earlier in this report.

4.1 Fiscal Impact of Construction

The fiscal impact of construction includes the tax revenues generated from construction sales taxes, use taxes, building permit and impacts fees, along with the secondary impacts from the spending of employees.

The City of Goodyear will collect an estimated $9.3 million from the construction of the light manufacturing portion of the project and $7.1 million from the proposed warehousing and distribution uses for a total of $16.4 million. This includes both the direct primary taxes collected from construction sales and use tax as well as the secondary revenue generated by the spending of construction employees.

Fiscal Impact of Construction
Citrus 10 Commerce Center
City of Goodyear
(2024 Dollars)

	Industrial - Light Manufacturing	Industrial - Warehouse/ Distribution	Total
Primary Impacts			
Construction Sales Tax	$4,467,300	$3,034,700	**$7,502,000**
Use Tax	N/A	$389,100	**$389,100**
Permit/Impact Fees	$4,588,800	$3,504,500	**$8,093,300**
Sub-Total	***$9,056,100***	***$6,928,300***	***$15,984,400***
Secondary Impacts from Employees			
Retail Sales Tax	$111,500	$75,700	**$187,200**
Property Tax	$92,000	$62,500	**$154,500**
State Shared Revenues	$26,200	$17,700	**$43,900**
Sub-Total	***$229,700***	***$155,900***	***$385,600***
Grand Total	**$9,285,800**	**$7,084,200**	**$16,370,000**

Source: Elliott D. Pollack & Co.; IMPLAN; AZ Dept. of Revenue; AZ Tax Research Association

4.2 Fiscal Impact of Operations

At build-out, the commerce park would begin to generate ongoing annual tax revenue for the City of Goodyear and its school districts every year. Primary revenues would be collected from property taxes, commercial lease taxes, and utility consumption. Secondary revenue, which is generated by employee spending, includes sales tax, property tax, and State-shared revenues such as income tax, vehicle license tax, and gasoline tax. The figures are exclusive of corporate income tax and do not include property tax levied on personal property.

Years prior to build out and stabilized occupancy would experience a relative portion of this total annual impact. Once the project is built out and operating at stabilized levels, the effects of the operations outlined in the following tables will be realized on an annual basis.

The City of Goodyear is projected to collect $1.9 million each year at buildout from primary and secondary sources generated by proposed light manufacturing uses. Another $1.2 million would be generated from warehousing and distribution for a total of over $3.0 million in annual ongoing tax revenue for the city. The local school districts would collect an additional $3.3 million each year based on the estimated net assessed value for the properties.

Overall, the annual operations of the proposed commerce center will generate an estimated $6.4 million each year for the local community at build out.

Fiscal Impact of Operations
Citrus 10 Commerce Center
City of Goodyear
(2024 Dollars)

	Industrial - Light Manufacturing	Industrial - Warehouse/ Distribution	Total
Property Tax	$486,500	$330,500	**$817,000**
Lease	$503,700	$399,200	**$902,900**
Utility Tax	$163,200	$110,900	**$274,100**
Secondary Impacts from Employees			
Property Tax	$376,200	$175,500	**$551,700**
State Shared Revenues	$32,000	$16,100	**$48,100**
Total for City	**$1,865,600**	**$1,172,900**	**$3,038,500**
Revenues for Local School Districts	$1,987,500	$1,350,200	**$3,337,700**
Grand Total	**$3,853,100**	**$2,523,100**	**$6,376,200**

Source: Elliott D. Pollack & Co.; IMPLAN; AZ Dept. of Revenue; AZ Tax Research Association

Across all levels of government, the Citrus 10 Commerce Center is projected to contribute an estimated $24.2 million in tax revenue every year at build out. This includes $10.8 million to the state, $6.1 million to the county, $3.0 million to the City of Goodyear, and $4.3 million to schools and special districts.

Fiscal Impact of Operations
Citrus 10 Commerce Center
(2024 Dollars)

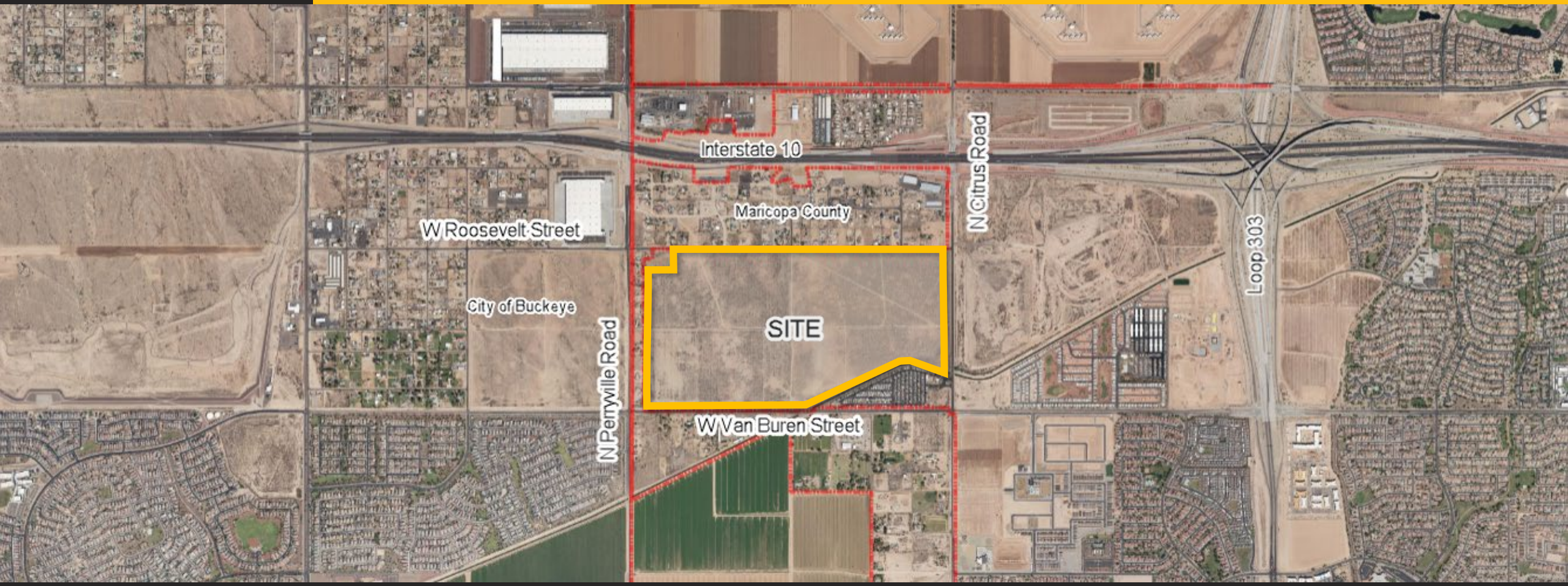
	Industrial - Light Manufacturing	Industrial - Warehouse/ Distribution	Total
State of Arizona			
Utility tax	$280,100	$190,300	$470,400
Secondary impacts from employees			
Spending sales tax	$4,623,500	$2,138,600	$6,762,100
Income tax	$303,200	$155,500	$458,700
Unemployment tax	$936,300	$488,200	$1,424,500
Vehicle license tax	$724,500	$377,800	$1,102,300
Gas tax	$380,400	$198,400	$578,800
Total for the State of Arizona	**$7,248,000**	**$3,548,800**	**$10,796,800**
Maricopa County			
Property Tax	$337,700	$229,400	$567,100
Utility Tax	$45,700	$31,000	$76,700
Secondary impacts from employees			
Spending sales tax	$815,800	$377,600	$1,193,400
Property tax	$1,804,300	$841,800	$2,646,100
State shared revenues	$1,074,300	$527,000	$1,601,300
Total for Maricopa County	**$4,077,800**	**$2,006,800**	**$6,084,600**
City of Goodyear			
Property Tax	$486,500	$330,500	$817,000
Lease	$503,700	$399,200	$902,900
Utility Tax	$163,200	$110,900	$274,100
Secondary impacts from employees			
Spending sales tax	$304,000	$140,700	$444,700
State shared revenues	$32,000	$16,100	$48,100
Total for Local Governments	**$1,865,600**	**$1,172,900**	**$3,038,500**
Other Districts			
School districts	$1,987,500	$1,350,200	$3,337,700
Special districts	$544,400	$369,900	$914,300
Total for Other Districts	**$2,531,900**	**$1,720,100**	**$4,252,000**
Total Tax Revenues	**$15,723,300**	**$8,448,600**	**$24,171,900**

Source: Elliott D. Pollack & Co.; IMPLAN; AZ Dept. of Revenue; AZ Tax Research Association

It's a Great time to be in Goodyear.

REZONE

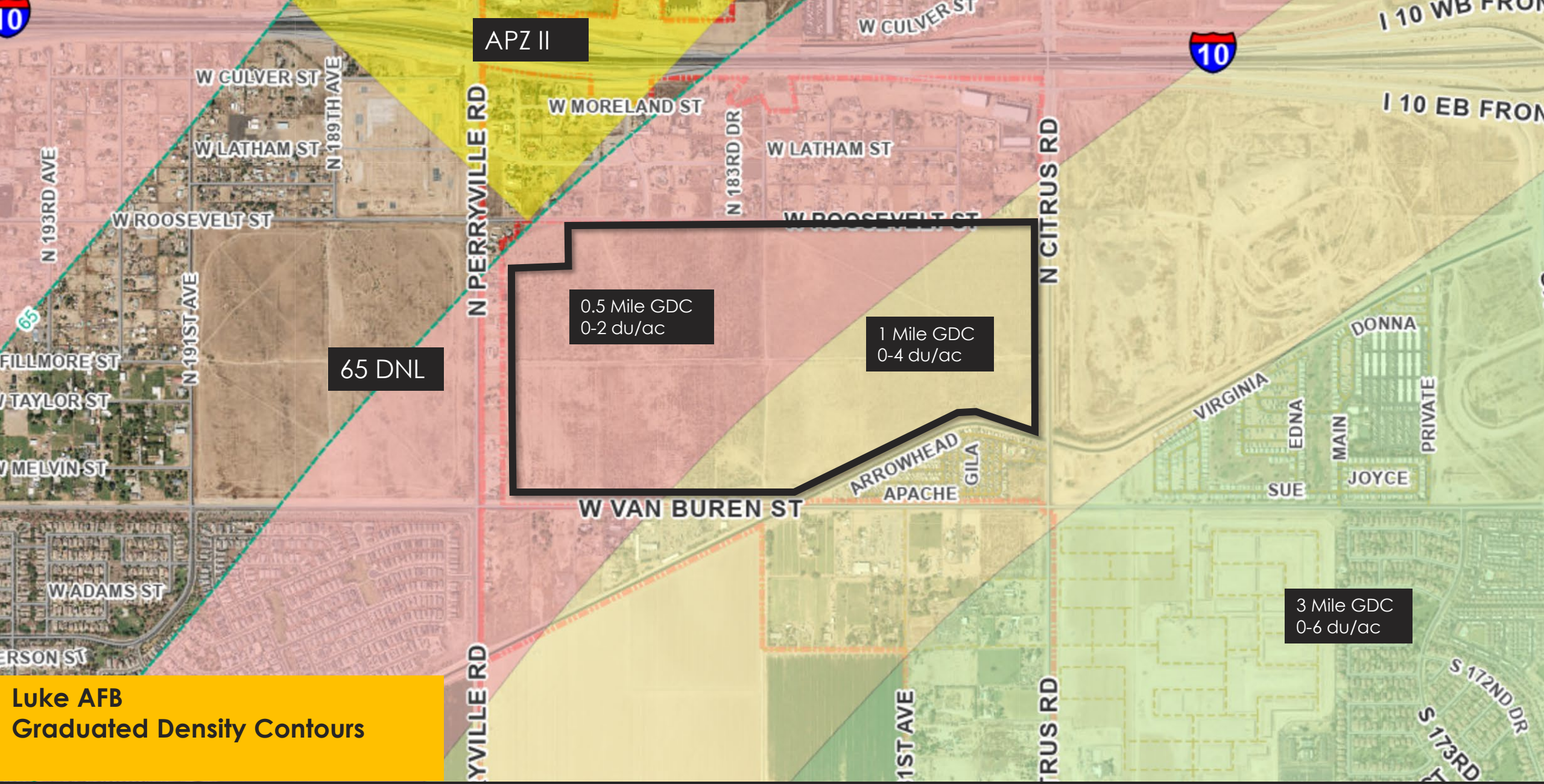
I-10 CITRUS GATEWAY



I-10 CITRUS GATEWAY

- SWC N Citrus Road and W Roosevelt Street
- Las Palmas PAD (Planned Area Development)





Luke AFB
Graduated Density Contours

I-10 CITRUS GATEWAY

GENERAL PLAN LAND USE DESIGNATION

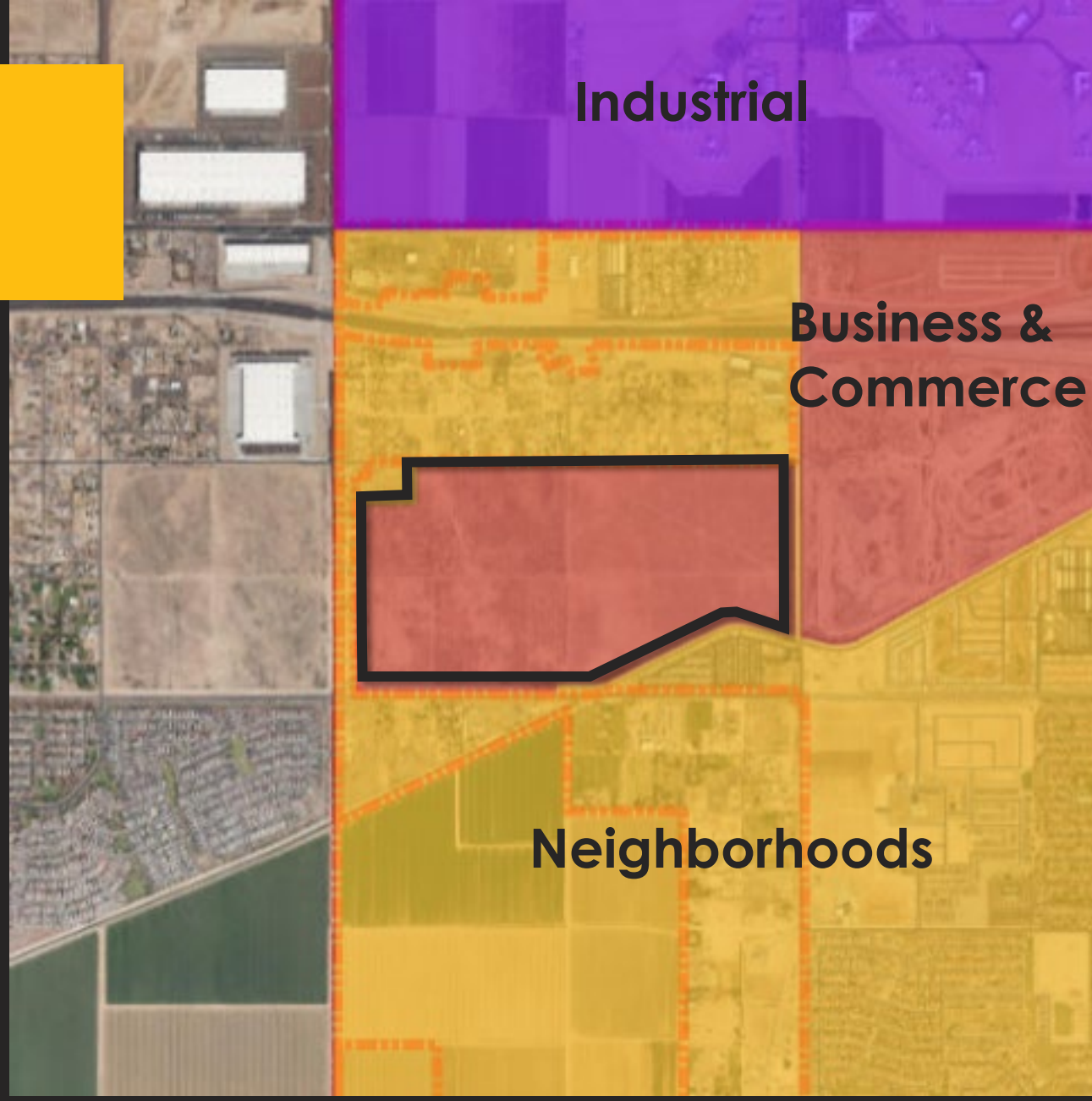
Business & Commerce









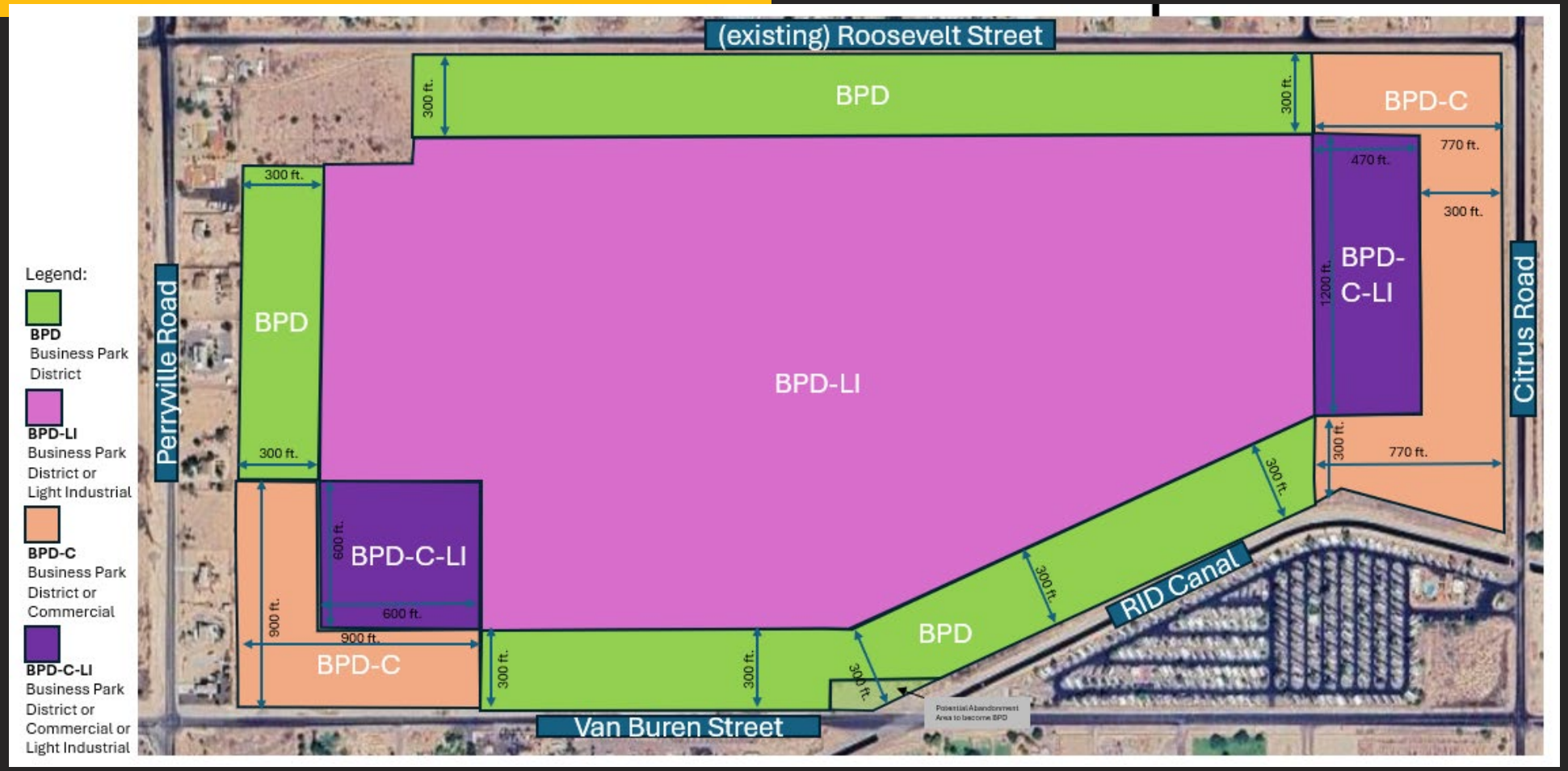


I-10 CITRUS GATEWAY

I-10 Citrus Gateway PAD

- BPD (Business Park District)
- I-1 (Light Industrial Park)
- C-2 (General Commercial)

PROPOSED LAND USE DISTRICT MAP



I-10 CITRUS GATEWAY

Uses

Additional Use:

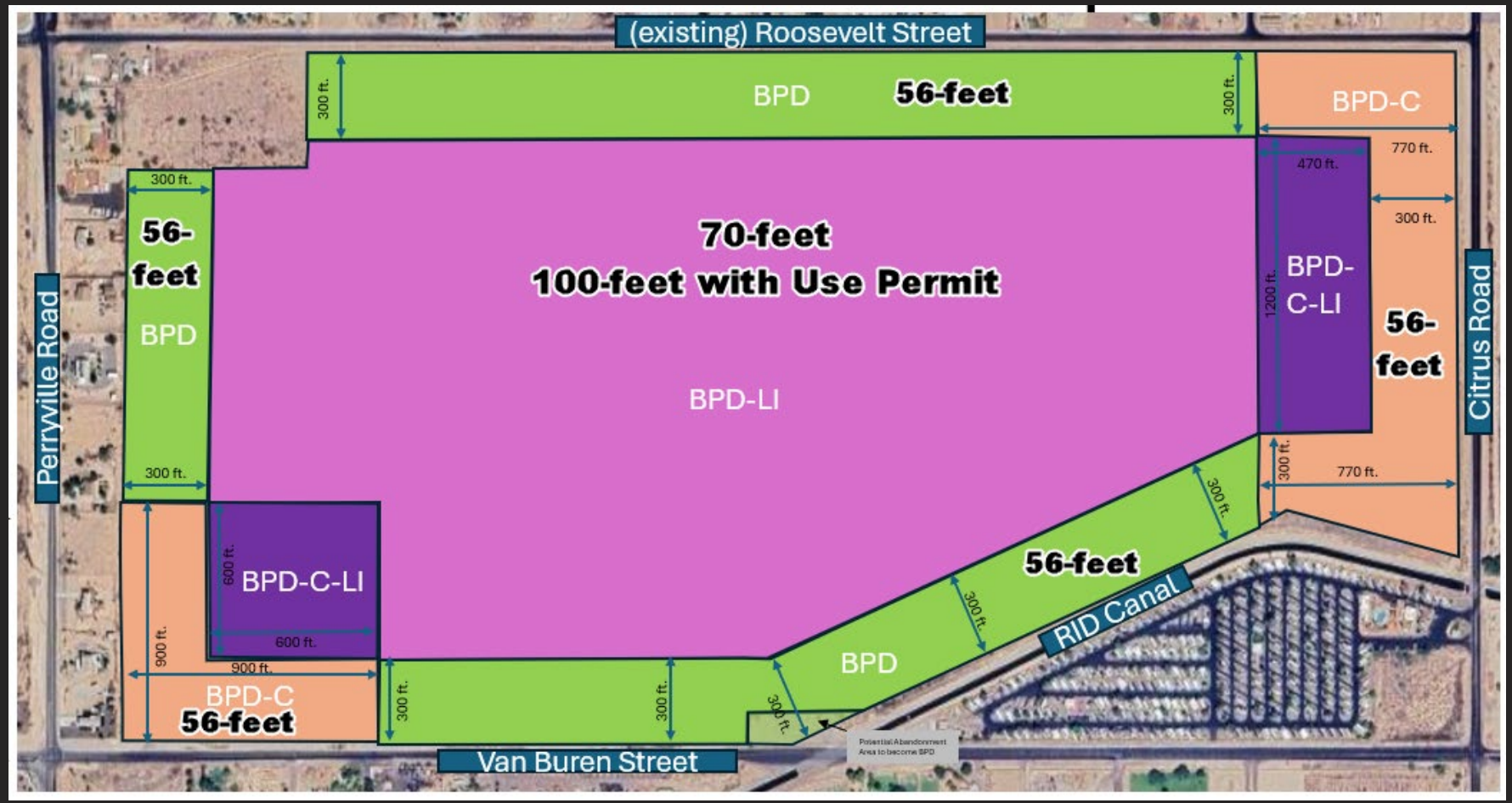
- Wireless Communication Facilities (WCF)

Prohibited Uses:

- Adult stores and theaters
- Establishments with on-site consumption of tobacco products
- Pawn Shop

I-10 CITRUS GATEWAY

Increased Building Heights



I-10 CITRUS GATEWAY

Recreational Open Space



REZONE
PUBLIC PARTICIPATION

- Neighborhood Meeting
- One support letter
- Planning and Zoning Commission
  - 4 speaker cards submitted in support

I-10 CITRUS GATEWAY REZONE
RECOMMENDATION

- Staff and Planning Commission recommend approval

It's a Great time to be in Goodyear.

Thank you

QUESTIONS?

ITEM #: 10.
DATE: 04/28/2025
AI #:2585

CITY COUNCIL ACTION REPORT

SUBJECT: PENSKE TRUCK LEASING ANNEXATION

STAFF PRESENTER(S): Justin Gabrielson, Senior Planner

SUMMARY

This is a public hearing to consider the annexation of approximately 4.92 acres of property, generally located on the south side of West McDowell Road, just west of the 183rd Drive alignment.

STRATEGIC PLAN ALIGNMENT

INFRASTRUCTURE

Economic Vitality

RECOMMENDATION

ADOPT ORDINANCE NO. 2025-1632 EXTENDING AND INCREASING THE CORPORATE LIMITS OF THE CITY OF GOODYEAR, MARICOPA COUNTY, STATE OF ARIZONA BY ANNEXING APPROXIMATELY 4.92 ACRES OF PROPERTY GENERALLY LOCATED ON THE SOUTH SIDE OF WEST MCDOWELL ROAD, JUST WEST OF THE 183RD DRIVE ALIGNMENT. (Justin Gabrielson, Senior Planner)

FISCAL IMPACT

Annexation of land has a fiscal impact. A brief overview of anticipated public infrastructure and services impacts is included in the staff analysis section of this report.

BACKGROUND AND PREVIOUS ACTIONS

The application request is for the annexation of approximately 4.92 acres of property generally located on the south side of West McDowell Road, just west of the 183rd Drive alignment (502-37-064M) (the “Annexation Property”) (See Attachment B). This item was previously seen by City Council on October 7, 2024, when staff was given authorization by City Council to start the Annexation Process, and on February 10, 2025, when City Council held a public hearing to consider annexation of the Annexation Property. No one from the public spoke on this annexation.

The Annexation Property is located within a county island that is surrounded by property within the City of Goodyear. Penske Truck Leasing Co. LP ("Penske") acquired the Annexation Property in March 2023. The property to the south of the Annexation Property is owned by the Arizona Department of Transportation, which is within Goodyear City Limits. The property to the north of the Annexation Property is owned by the Arizona State Trust Land and is the site of Perryville Prison, which is within Goodyear City Limits. The property to the east of the Annexation Property is owned by Penske, which is within Goodyear City Limits and is zoned I-2 (the "Penske Property"). The Penske Property is actively being developed. The property to the west of the Annexation Property is located within Maricopa County and is being utilized for industrial uses.

STAFF ANALYSIS

Current Policy:

Arizona State Statue regulates annexation. Below is a brief summary of the annexation process:

- Staff determines whether the proposed annexation area meets the state legal requirements for annexation as set forth in A.R.S. § 9-471.
    - The Annexation Property is located within the city's municipal planning area and staff has determined that the annexation area meets the state legal requirements for annexation pursuant to the provisions of A.R.S. § 9-471 (K) and (S)..
- Assuming the proposed annexation area meets the state legal requirements for annexation, staff conducts a review of the annexation proposal to determine the desirability of the annexation.
- Staff provides an impact analysis of the annexation proposal to City Council. The City Council will consider the proposal and make a determination on whether to authorize staff to proceed with the annexation (tonight's meeting).
    - If authorization is not provided, the annexation application will be denied, and no further action on the annexation will be taken.
    - If authorization is provided, staff will move forward with processing the annexation application.
- City Council considered the proposal on October 7, 2024, and authorized staff to move forward with processing the annexation application.
- After further staff review of the proposal, a blank petition containing the legal description and an accurate map of the annexation territory is filed with the County Recorder and notice and a copy of the filing shall be given to the clerk of the board of supervisors and to the county assessor. The description shall identify the entity, if any, that will be responsible for maintaining the existing rights-of-way and roadways that are within or contiguous to the exterior boundaries of the area of the proposed annexation.
- After the blank petition is filed, there is a 30-day waiting period before signatures can be obtained. A public hearing must be held within the last 10 days of this 30-day waiting period to receive public input on the annexation. The first of two public hearings must be held within the last 10 days of this 30-day waiting period to receive public input on the annexation. Notices of the public hearing must be: (i) published in a newspaper of general circulation at least fifteen days before the end of the 30-day waiting period and six (6) days before the public hearing; (ii) be posted in at least three conspicuous public places in the area being annexed at least six (6) days before the public hearing; (iii) sent by first class mail to the chairperson of the board of supervisors of the county in which The Annexation Property being annexed is located at least six (6) days before the public hearing; (iv) sent by first class mail, with an accurate map of The Annexation Property being annexed to each owner of the real and personal property as shown on the statement provided by the county assessor and department of revenue at least six (6)

days before the public hearing.
    - The public hearing being held on February 10, 2025, is the first of the two public hearings required for annexation, and it is being held within the last ten (10) days of the 30-day waiting period. Notices of the public hearing being held on February 10, 2025, for the annexation was published in the Arizona Republic West Valley Edition on January 24, 2025, which is at least fifteen days before the end of the 30-day waiting period and at least six (6) days before the public hearing. On January 24, 2025, notices of the public hearings were also posted in three conspicuous places in each of the properties proposed to be annexed, which is at least six (6) days before the public hearing. On January 17, 2025, notices of the public hearing along with an accurate map of the Annexation Area for each of the proposed annexations was emailed to the County Board of Supervisors; to the County Assessor; and to the owners of real and personal property identified on the lists received from the Maricopa County Assessor and Arizona Department of Revenue, which is at least six (6) days before the public hearing.
- After the first public hearing and after the 30-day waiting period is over, the blank petition may be signed and collected.
- Once signatures have been collected on the blank petition, an annexation ordinance is prepared, and a second public hearing is held for Council's consideration of the Ordinance. If approved by Council, the signed petitions and required affidavits will be filed with the Maricopa County Recorder and a copy of the Annexation Ordinance is submitted to the Clerk of the Board of Supervisors for Maricopa County.

NEXT STEPS
Ordinance 2025-1632 will be recorded after May 28, 2025 (30 days after the final public hearing).

Details of the Request:
As set forth above, the City Council has been asked to annex approximately 4.92 acres generally located on the south side of West McDowell Road, just west of the 183rd Drive alignment, which is needed to expand the Penske Truck Leasing site to provide space for the storage of trucks. City Council is being asked to complete the annexation process by holding the final public hearing required before the adoption of annexation ordinances and to adopt the annexation ordinance that annexes the Annexation Property. The Annexation Property is desired, by Penske, for the expansion of the Penske Operations. Although the City's General Plan designates this area as Neighborhoods, the existing County zoning for the Annexation Property is Light Industrial (IND-2). Accordingly, if the City Council approves the annexation, the Annexation Property would be designated the city's equivalent zoning district of General Industrial Park (I-2).
The Annexation Property is located within the city's municipal planning area and meets State statutory requirements for annexation.
If adopted, and assuming there are no challenges to the adoption, the annexation ordinance(s) will become final within 30 days of adoption.
Prior to these public hearings, in accordance with the City's annexation policy and state law, the following actions have occurred:
- On October 7, 2024, City Council voted to authorize staff to initiate the annexation of approximately 4.92 acres of property generally located on the south side of West McDowell Road, just west of the 183rd Drive alignment (502-37-064M).
- On November 18, 2024, staff forwarded a legal description of the properties to be annexed and a map of the Annexation Area to the Maricopa County Assessor and the

Arizona Department of Revenue, Property Valuation and Equalization Division ("ADOR") requesting a list of the owners of the property to be annexed and the appraisal and assessment of the property being annexed.

- On December 9, 2024, after requesting the necessary information from the Maricopa County Assessor and ADOR, a blank (unsigned) petition containing the legal description and an accurate map of all exterior boundaries, including all County rights-of-way and roadways with no taxable value, of the territory proposed to be annexed was filed with the County Recorder of Maricopa County. The blank petition was accompanied by a sworn affidavit verifying that no part of the territory for which the filing is made is subject to an earlier filing for annexation.
- On February 10, 2025, City Council held a Public Hearing to discuss and take public input on the proposed annexations.
    - Notices of the public hearing being held on February 10, 2025, for the annexation was published in the Arizona Republic West Valley Edition on January 24, 2025, which is at least fifteen days before the end of the 30-day waiting period and at least six (6) days before the public hearing. On January 24, 2025, notices of the public hearings were also posted in three conspicuous places in each of the properties proposed to be annexed, which is at least six (6) days before the public hearing. On January 17, 2025, notices of the public hearing along with an accurate map of the Annexation Area for each of the proposed annexations was mailed by first class mail to the County Board of Supervisors; to the County Assessor; and to the owner of real and personal property identified on the lists received from the Maricopa County Assessor and Arizona Department of Revenue, which is at least six (6) days before the public hearing.
    - No public comment was received in regard to the annexation at the February 10, 2025, public hearings.
- After the February 10, 2025, hearings and the expiration of the 30-day waiting period, the blank petitions were circulated by the applicant for signatures. As part of the annexation process, the petition must be signed by the property owners who own at least 50% of the value of the property and by at least 51% of the owners of the property being annexed. With regard to the proposed Penske annexation, the Annexation Property is owned by a single entity (Penske Truck Leasing Co. LP), and the appropriate signature was received.
- Having collected the required signatures on the blank petitions, Annexation Ordinance No. 2025-1632 (See Attachment A) has been prepared and is being presented for City Council's consideration.

City's Annexation Policy

The Goodyear City Council adopted an annexation policy by Resolution 2001-768 that provides staff with guidelines for the evaluation of annexation requests:

A. The City's ability to provide basic services in a timely manner.

B. Long-term desirability for community development and economic growth

C. Likelihood of the area being developed in Maricopa County or being annexed by another city or town.

D. Ability to control the quality of land uses and infrastructure standards.

E. Compatibility with General Plan, infrastructure needs, and timing of development

As discussed above, the Annexation Property was acquired by Penske for the development of a parking lot to support its truck leasing operations being developed on the Penske Leasing Property.

Streets: the Annexation Property is located on the south side of West McDowell Road. The

developer would be responsible for the construction of the Annexation Property's half-street improvements.
Public Safety: the Annexation Property is located within an existing Police patrol beat and the current level of service within the beat can accommodate the development of the Annexation Property. Fire services will be provided by Station 188, which is located approximately 2.23 miles away from the site and Station 185 located 5.38 miles northwest of the site.
Water: the Annexation Property is within the service area of Arizona Water Company. Therefore, there is no impact on the city's water portfolio or any infrastructure needed to provide water service to the Annexation Property.
Wastewater: the Annexation Property is located within the city's wastewater service area, and the city will be providing wastewater service to The Annexation Property. There is an existing trunk line located within West McDowell Road that should have capacity sufficient to meet the wastewater flows that will be generated by the development of The Annexation Property. If the existing trunk line cannot accommodate wastewater flows from The Annexation Property, The Annexation Property owner will be required to install any additional improvements needed for the city to provide wastewater to The Annexation Property.
Wastewater: the Annexation Property is located within the city's wastewater service area, and the city will be providing wastewater service to The Annexation Property. There is an existing trunk line located within West McDowell Road that should have capacity sufficient to meet the wastewater flows that will be generated by the development of The Annexation Property. If the existing trunk line cannot accommodate wastewater flows from The Annexation Property, The Annexation Property owner will be required to install any additional improvements needed for the city to provide wastewater to The Annexation Property.

Attachments

Attachment A - Ordinance 2025-1632

Attachment B - Aerial Exhibit

Staff Presentation

ORDINANCE NO. 2025-1632

AN ORDINANCE OF THE MAYOR AND COUNCIL OF THE CITY OF GOODYEAR, MARICOPA COUNTY, ARIZONA, EXTENDING AND INCREASING THE CORPORATE LIMITS OF THE CITY OF GOODYEAR, MARICOPA COUNTY, STATE OF ARIZONA BY ANNEXING APPROXIMATELY 4.92 ACRES OF PROPERTY GENERALLY LOCATED ON THE SOUTH SIDE OF WEST MCDOWELL ROAD, JUST WEST OF THE 183RD DRIVE ALIGNMENT.

WHEREAS, a petition in writing, accompanied by a map or plot of said real property, having been filed and presented to the Mayor and Council of the City of Goodyear, Arizona, signed by the owner of more than one-half in value of the real and personal property and more that one-half of the persons owning real and personal property as would be subject to taxation by the City of Goodyear in the event of annexation within the territory and land hereinafter described as shown by the last assessment of said property, which said territory is contiguous to the City of Goodyear, and not now embraced within its limits, asking that the property more particularly hereinafter described be annexed to the City of Goodyear, and to extend and increase the corporate limits of the City of Goodyear so as to embrace the same; and,

WHEREAS, the Mayor and Council of the City of Goodyear, Arizona are desirous of complying with said petition and extending and increasing the corporate limits of the City of Goodyear to include said territory; and,

WHEREAS, the property that is the subject of the annexation petition is undeveloped and unoccupied; and,

WHEREAS, the said petition sets forth a true and correct description of all the exterior boundaries of the entire area proposed to be annexed to the City of Goodyear, and had attached thereto at all times an accurate map of the territory desired to be annexed; and,

WHEREAS, no alterations increasing or reducing the territory sought to be annexed have been made after the said petition had been signed by any owner of real and personal property in such territory; and,

WHEREAS, the provisions of A.R.S. §9-471, and amendments thereto, have been fully observed; and,

WHEREAS, proper and sufficient certification and proof of the foregoing facts are now on file in the office of the City Clerk of the City of Goodyear, Arizona, together with a true and correct copy of the original petition referred to herein, which is on file in the office of the County Recorder.

NOW, THEREFORE, BE IT ORDAINED BY THE MAYOR AND COUNCIL OF THE CITY OF GOODYEAR, MARICOPA COUNTY, ARIZONA, AS FOLLOWS:

SECTION 1. ANNEXATION

That the approximate 4.92 acres of territory described in Exhibit A – Legal Description and depicted in Exhibit B – Annexation Map, both of which are attached hereto and incorporated herein, is hereby annexed to the City of Goodyear, and that the present corporate limits are hereby extended and increased to include the approximate 4.92 acres of territory described in Exhibit

A - Legal Description (the “Annexation Property”); and that the official map of the City of Goodyear be amended to include the Annexation Property.

SECTION 2. ZONING

That the City of Goodyear zoning classification for the Annexation Property shall be General Industrial Park (I-2) (being the City of Goodyear zoning classification most consistent with Maricopa County’s classification of IND-2). That the official zoning map of the City of Goodyear be amended to show the City of Goodyear’s zoning classification for the Annexation Property.

SECTION 3. RECORDATION

A copy of this ordinance and all exhibits referred to herein, including Exhibit B – Annexation Map, which is an accurate map of the territory hereby annexed to the City of Goodyear, shall be filed and recorded in the office of the County Recorder of Maricopa County, Arizona and a copy of this ordinance and all exhibits referred to herein shall be provided to the Clerk of the Board of Supervisors of Maricopa County, Arizona.

SECTION 4. EFFECTIVE DATE

This Ordinance shall become effective as prescribed by law.

PASSED AND ADOPTED by the Mayor and Council of the City of Goodyear, Maricopa County, Arizona, by a _____ vote, this 28 day of April, 2025.

_____

Joe Pizzillo, Mayor

Date: _____

ATTEST:

Jasmine Pernicano, City Clerk

APPROVED AS TO FORM:

Roric Massey, City Attorney

EXHIBIT A
LEGAL DESCRIPTION

A PORTION OF THE NORTHWEST QUARTER OF SECTION 3, TOWNSHIP 1 NORTH, RANGE 2 WEST OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTH QUARTER CORNER OF SAID SECTION 3 FROM WHICH THE NORTHWEST CORNER OF SAID SECTION 3 BEARS SOUTH 89°57'27" WEST, A DISTANCE OF 2647.31 FEET;

THENCE ALONG THE NORTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION 3, SOUTH 89°57'27" WEST, A DISTANCE OF 272.27 FEET;

THENCE LEAVING SAID NORTH LINE, SOUTH 00°02'33" EAST, A DISTANCE OF 55.00 FEET TO THE POINT OF BEGINNING;

THENCE SOUTH 00°08'21" EAST, A DISTANCE OF 709.55 FEET;

THENCE SOUTH 89°55'26" WEST, A DISTANCE OF 306.84 FEET;

THENCE NORTH 00°08'40" WEST, A DISTANCE OF 709.73 FEET;

THENCE NORTH 89°57'27" EAST, A DISTANCE OF 306.91 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINS 217,770 SQ.FT. OR 5.00 ACRES MORE OR LESS.

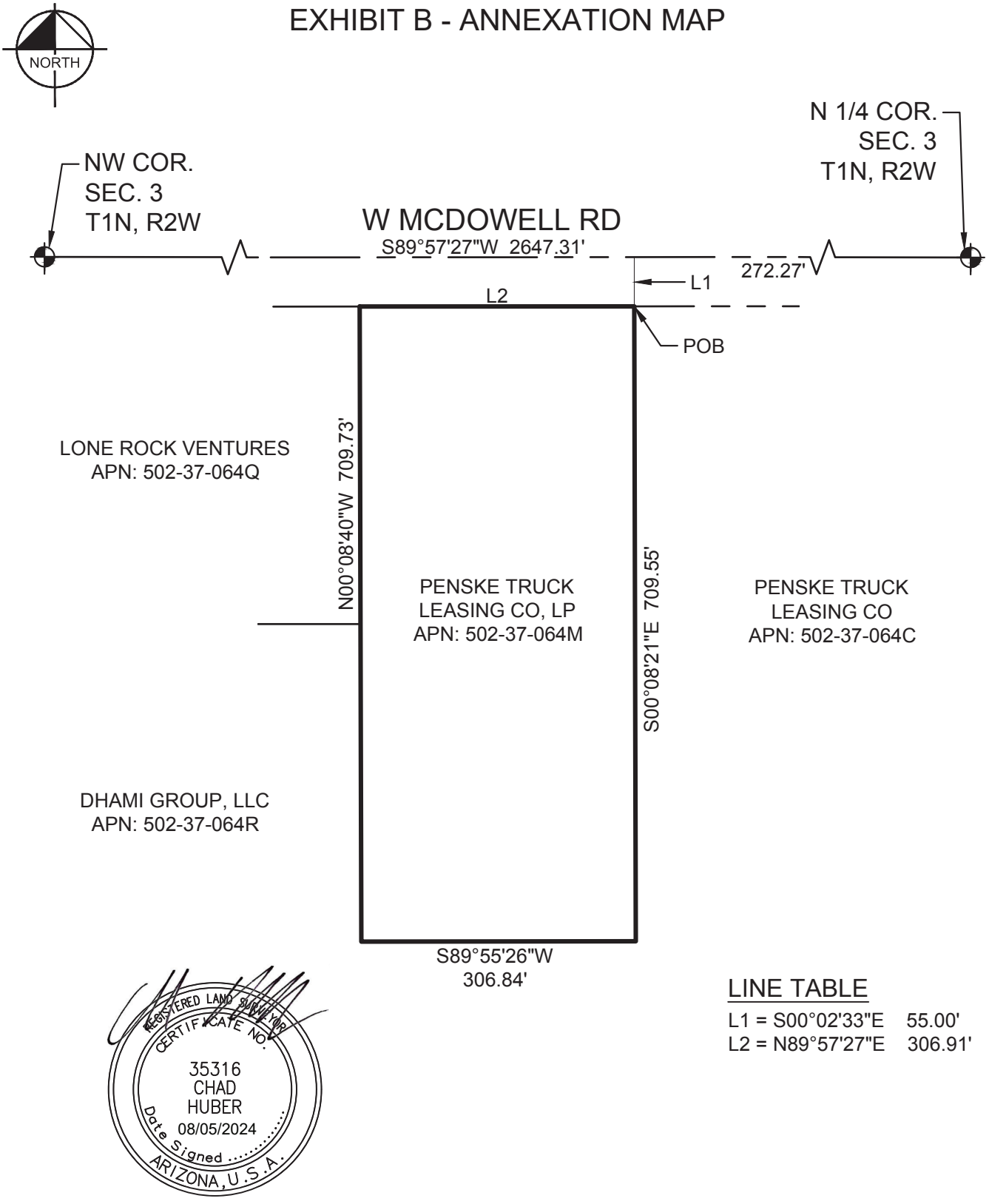


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Scale	Drawn by	Checked by	Date	Project No.	Sheet No.
N/A	CWH	CWH	08/05/2024	291582000	1 OF 2

EXHIBIT B - ANNEXATION MAP



REGISTERED LAND SURVEYOR
CERTIFICATE NO.
35316
CHAD
HUBER
08/05/2024
Date Signed .....
ARIZONA, U.S.A.

LINE TABLE

L1	S00°02'33"E	55.00'
L2	N89°57'27"E	306.91'

CHAD W. HUBER
RLS 35316
1661 E. CAMELBACK RD, SUITE 400
PHOENIX, ARIZONA 85016
PH. 602-837-5511
chad.huber@kimley-horn.com

Kimley»Horn
1661 E. Camelback Rd., Suite 400
PHOENIX, AZ 85016
Tel. No. (602) 837-5511

Scale	Drawn by	Checked by	Date	Project No.	Sheet No.
N.T.S.	CWH	CWH	08/05/2024	291582000	2 OF 2

CERTIFICATION OF MAP

MAP OF AREA
TO BE ANNEXED

I, Joe Pizzilo, Mayor of the City of Goodyear, Arizona, do hereby certify that the foregoing map is a true and correct map of the territory annexed under and by virtue of the petition of the real and personal property owners in the said territory and by Ordinance No. 2025-1632, annexing the territory described in Ordinance No. 2025-1632 and as shown on said map as a part of that territory to be included within the corporate limits of the City of Goodyear, Arizona.

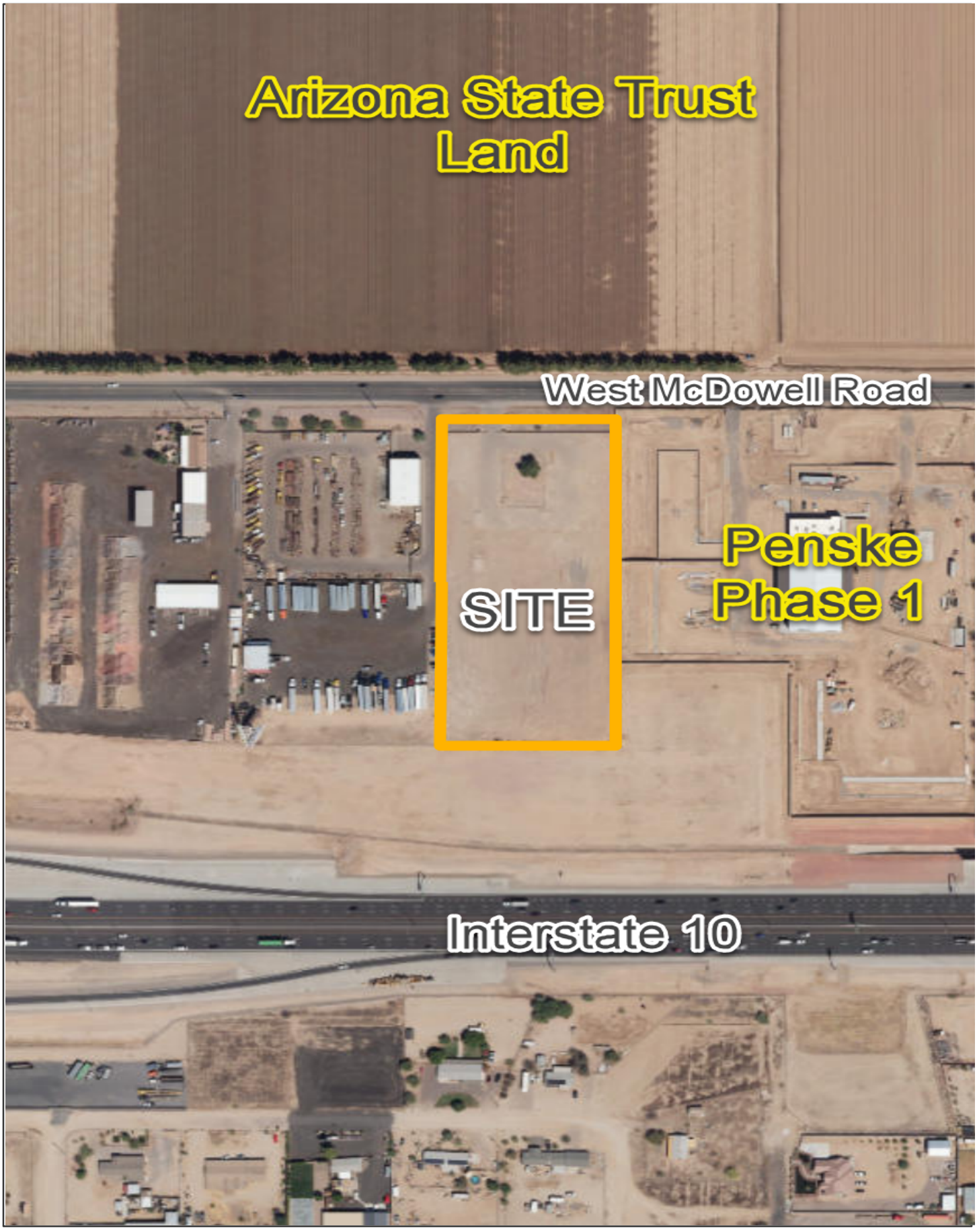
_____
Joe Pizzillo

Date: _____

ATTEST:

_____
City Clerk

Aerial Photo Exhibit
Case No. P24-00143
Penske Truck Leasing



It's a Great time to be in Goodyear.

Penske Truck Leasing

Second Public Hearing

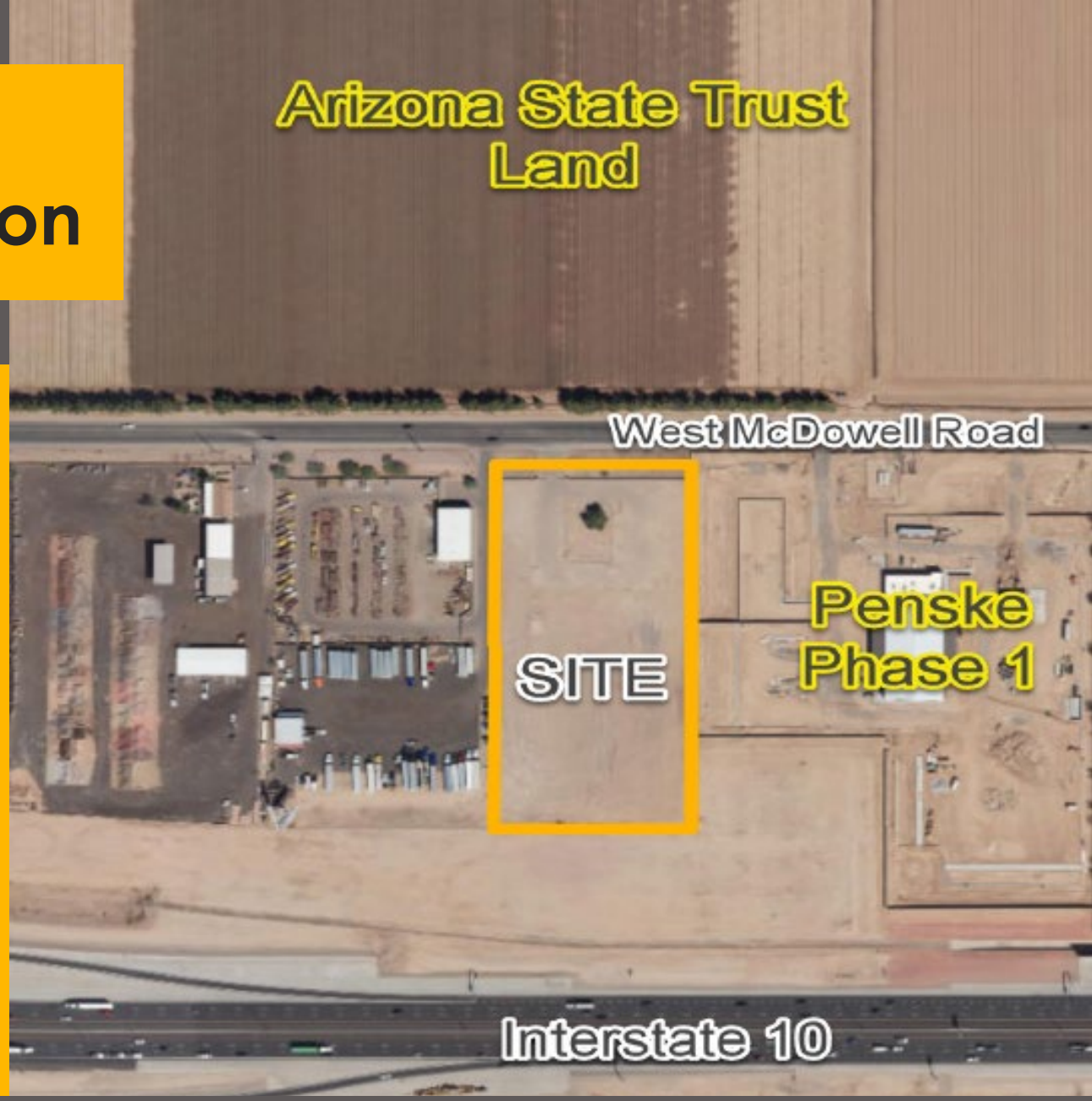


It's a Great time to be in Goodyear.

Penske Truck Leasing Annexation

Annexation Property

- Approximately 4.92 acres
- Penske site plan previously approved on 2 parcels directly east of The Site
- County Zoning, and future city zoning

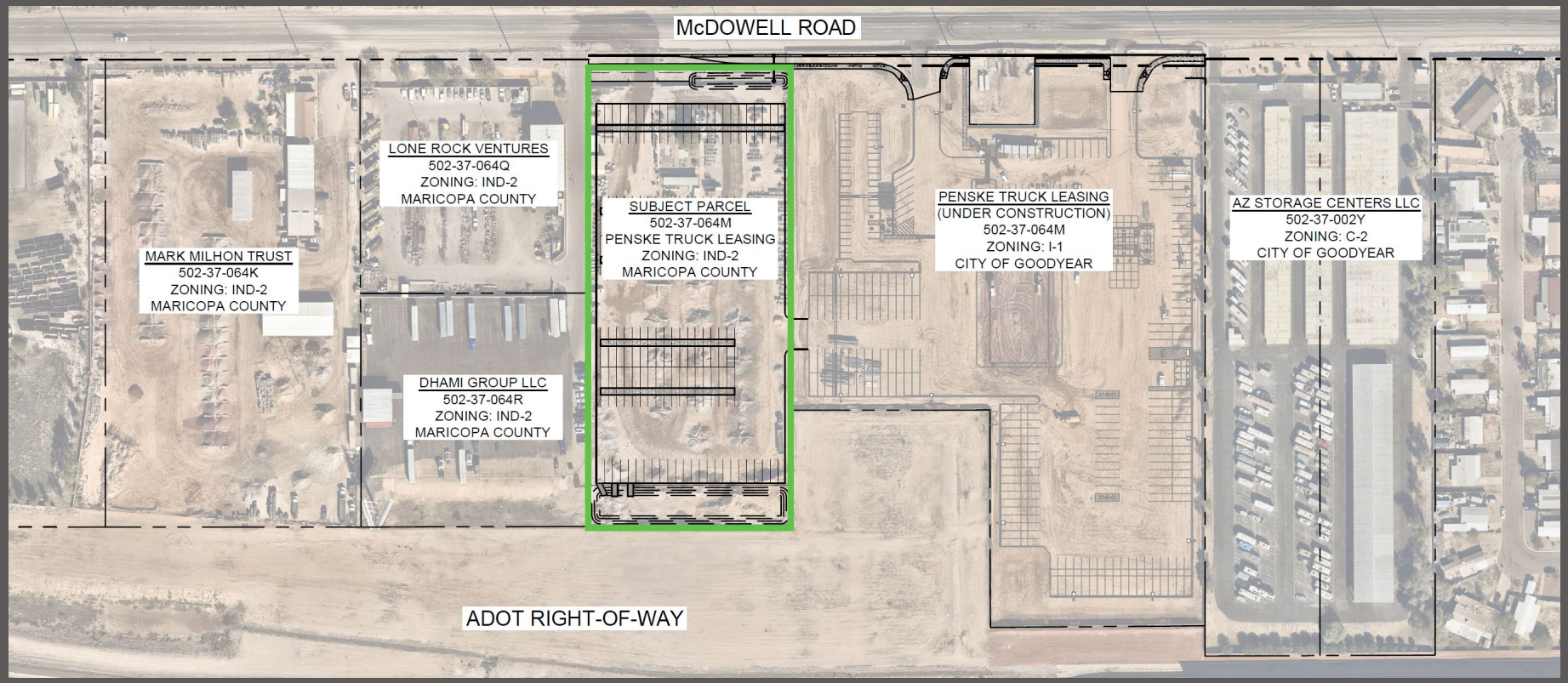


It's a Great time to be in Goodyear.

Recommendation

Penske Truck Leasing Annexation

Approve the annexation of approximately 4.92 acres of property.



ITEM #: 11.
DATE: 04/28/2025
AI #:2589

CITY COUNCIL ACTION REPORT

SUBJECT: ADOPTION OF RESOLUTION APPROVING AN INTERGOVERNMENTAL AGREEMENT FOR THE ANNEXATION AND PROVISION OF CITY SERVICES TO LIBERTY ELEMENTARY SCHOOL DISTRICT NO. 25 PROPERTY

STAFF PRESENTER(S): Kini Knudson, Deputy City Manager

SUMMARY

Intergovernmental Agreement ("IGA") for the Annexation and Provision of City Services to Liberty Elementary School District No. 25 (Liberty) property providing terms for the annexation of approximately 15.8 acres of land (Property) generally located adjacent to W. Lower Buckeye Rd. between S. Citrus Road and S. Perryville Road.

STRATEGIC PLAN ALIGNMENT



RECOMMENDATION

ADOPT RESOLUTION NO. 2025-2462 APPROVING THE INTERGOVERNMENTAL AGREEMENT FOR THE ANNEXATION AND PROVISION OF CITY SERVICES TO LIBERTY ELEMENTARY SCHOOL DISTRICT NO. 25 PROPERTY. (Kini Knudson, Deputy City Manager)

STIPULATIONS

None.

FISCAL IMPACT

As a condition of the City annexing the Property into the City, and providing City services to the Property, the IGA outlines fees to be paid and public improvements to be completed by Liberty.

BACKGROUND AND PREVIOUS ACTIONS

On September 9, 2024, Council authorized staff to initiate the annexation of approximately 15.8 acres generally located at the northwest corner of S. 183rd Avenue and W. Lower Buckeye Road, which is owned by Liberty. The Property abuts Pradera Phase 3 Parcel E (zoned R1-6) and Pradera Phase 3 Parcel F (zoned R1-4), to the east, within the city of Goodyear. The Property also abuts single-family homes (zoned RU-43) to the west, located within Maricopa County, a vacant farmed parcel to the north (zoned) also within Maricopa County.

Liberty intends to develop the Property into a large elementary school campus, initially featuring five buildings to house administrative staff and serve about 850 students, with plans for future expansion. However, since the Property is located in an unincorporated area of Maricopa County where City services are not provided, Liberty would otherwise need to construct its own water and wastewater facilities. To avoid this, Liberty desires annexation of the Property into the City so it can benefit from essential services such as police, fire, water, and wastewater.

STAFF ANALYSIS

The IGA outlines pre-annexation conditions and requirements that must be met in order for the City to proceed with annexation of the Property. The City and Liberty negotiated mutually agreeable terms for the IGA. Therefore, the City is amenable to annexing the property and extending City services to the Property, contingent on Liberty's compliance with the IGA's terms, including constructing the necessary infrastructure improvements needed to serve the Property.

The Agreement shall terminate on July 1, 2026, if the Property has not been annexed into the City by that date, and may be terminated earlier upon the written mutual agreement. The IGA identifies the following responsibilities for each party prior to and following annexation:

Liberty's responsibilities:
· Design, construct, and bond full half-street improvements on the north half of West Lower Buckeye Road adjacent to the Property per City minor arterial standards (Standard Detail G-3122).
· Design, construct, and bond full half-street improvements on the west half of South 183rd Avenue adjacent to the Property per City minor collector standards (Standard Detail G-3124-1).
· Provide access to the Property via South 183rd Avenue
· The section of South 183rd Avenue between West Lower Buckeye Road and Durango Street must have at least two paved lanes (one in each direction).
· Design and construct a three-legged traffic signal at the intersection of South 183rd Avenue and West Lower Buckeye Road.
· Design, construct, and bond all necessary water and wastewater improvements (on-site or off-site) required for City services for the Initial Phase.
· Will not receive water meters or connect to the City's water/wastewater transmission lines until the Property is annexed and all applicable City fees (e.g., in-lieu, meter, account setup fees) are paid.

City's responsibilities:
· Review, permit, and inspect all submitted civil plans for off-site infrastructure, including public water and wastewater systems.

· Review and approve on-site civil and building plans for the Initial Phase, facilitate their submission to the County, and conduct inspections post-annexation.
· Annex the Property once Liberty has met statutory requirements and completed all required infrastructure improvements with the necessary Warranty Bonds and compliance with specified requirements.
· Issue a water meter and provide water and wastewater services.

The proposed IGA and the accompanied Resolution are included as Attachment A. On April 15, 2025, Liberty's governing board approved the proposed IGA. If approved by Council, the IGA will be executed and recorded. Staff will return at a later date once the conditions of the IGA are met to seek Council approval of the annexation of the Property.

Attachments

Attachment A - Resolution 2025-2462 with Exhibit

Staff Presentation

RESOLUTION NO. 2025-2462

A RESOLUTION OF THE MAYOR AND COUNCIL OF THE CITY OF GOODYEAR, MARICOPA COUNTY, ARIZONA, APPROVING INTERGOVERNMENTAL AGREEMENT FOR THE ANNEXATION AND PROVISION OF CITY SERVICES TO LIBERTY ELEMENTARY SCHOOL DISTRICT NO. 25 PROPERTY.

WHEREAS, Liberty Elementary School District No. 25, a political subdivision of the State of Arizona ("Liberty"), owns approximately 15.8 acres of land generally located adjacent to W. Lower Buckeye Rd. between S. Citrus Road and S. Perryville Road (the "Property"), within unincorporated Maricopa County; and

WHEREAS, Liberty is developing a large elementary school campus that will initially consist of five buildings that will house administrative staff and that can accommodate roughly 850 students with the potential for future expansion; and

WHEREAS, if the Property is not annexed into the City of Goodyear, Liberty would have to develop facilities to provide water to serve the needs of the elementary school campus and facilities to handle the wastewater generated from the operation of the school campus;

WHEREAS, Liberty wants the city to provide the Property with city services, including, but not limited to, police, fire, water and wastewater services; and

WHEREAS, the city is willing to annex the Property and provide city services to the Property, including water and wastewater services subject to Liberty's agreement to construct various infrastructure improvements, the need for which is the result of the development of the school campus, and to pay Property an in-lieu payment equivalent to all the costs an institutional user located within the boundaries of the city would pay to hook up to the city's water and wastewater system, including water and wastewater development impact fees which represent an allocation of a share of the costs of the water and wastewater system improvements that are or will be constructed to serve new development; and

WHEREAS, the proposed Intergovernmental Agreement for the Annexation and Provision of City Services to Liberty Elementary School District No. 25 Property (the "Pre-Annexation IGA") reflects terms negotiated by city and Liberty staff providing terms for the city's annexation of the Property and for the city to provide water and wastewater services to the Property; and

WHEREAS, on April 15, 2025, the governing board of the Liberty Elementary School District No. 25 approved the terms of the Pre-Annexation IGA and authorized its execution.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND COUNCIL OF THE CITY OF GOODYEAR, MARICOPA COUNTY, ARIZONA, AS FOLLOWS:

SECTION 1. The Mayor and Council of the City of Goodyear hereby approve the Intergovernmental Agreement for the Annexation and Provision of City Services to Liberty Elementary School District No. 25 Property attached hereto as Exhibit 1.

SECTION 2. The City Manager or her designee is hereby authorized and directed to execute the Intergovernmental Agreement for the Annexation and Provision of City Services to Liberty Elementary School District No. 25 Property attached hereto as Exhibit 1.

SECTION 3. The City Manager or his/her designee is hereby authorized to take any and all actions and to execute any and all documents necessary to carry out the intent of this Resolution and the terms of the Intergovernmental Agreement for the Annexation and Provision of City Services to Liberty Elementary School District No. 25 Property.

SECTION 4. The City Clerk or her designee is hereby directed to record a copy of the Intergovernmental Agreement for the Annexation and Provision of City Services to Liberty Elementary School District No. 25 Property with the Maricopa County recorder within ten days of the date this Resolution is adopted.

SECTION 5. Resolution 2025-2462 shall be effective as provided by law.

PASSED AND ADOPTED by the Mayor and Council of the City of Goodyear, Maricopa County, Arizona, by a _____ vote, this 28 day of April, 2025.

_____
Joe Pizzillo, Mayor

Date: _____

ATTEST:

_____
Jasmine Pernicano, City Clerk

APPROVED AS TO FORM:

_____
Roric Massey, City Attorney

RECORDED, RETURN TO:
City of Goodyear, Arizona
Office of the City Clerk
1900 North Civic Square
Goodyear, Arizona 85395

INTERGOVERNMENTAL AGREEMENT FOR THE ANNEXATION AND PROVISION OF CITY SERVICES TO LIBERTY ELEMENTARY SCHOOL DISTRICT NO. 25 PROPERTY

This Intergovernmental Agreement for the Annexation and Provision of City Services to Liberty Elementary School District No. 25 Property is entered into by and between Liberty School District No. 25, a political subdivision of the State of Arizona and the City of Goodyear, an Arizona municipal corporation. Liberty Elementary School District No. 25 and the City of Goodyear are sometimes referred to individually as Party and collectively as Parties.

RECITALS

A. WHEREAS, Liberty Elementary School District No. 25 owns approximately 15.8 acres of land generally located adjacent to W. Lower Buckeye Rd. between S. Citrus Road and S. Perryville Road as more particularly described in Exhibit A attached hereto and incorporated herein by this reference (the "Property").

B. WHEREAS, Liberty intends to develop the Property as a large elementary school campus, with the initial phase consisting of five buildings that will house administrative staff and that can accommodate roughly 850 students with additional buildings and facilities being constructed in the future.

C. WHEREAS, the Property is located in unincorporated Maricopa County and the City does not provide services outside the boundaries of the City of Goodyear.

D. WHEREAS, if the Property is developed within an unincorporated area of Maricopa County, Liberty would have to develop facilities to provide water to serve the needs of the elementary school campus and facilities to handle the wastewater generated from the operation of the facilities developed on the Property.

E. WHEREAS, Liberty is desirous of having the City provide the Property with city services, including, but not limited to, police, fire, water and wastewater services.

F. WHEREAS, for the City to provide the requested services, the Property would have to be annexed into the City.

G. WHEREAS, the City is willing to annex the Property and provide City services to

the Property, including but not limited to water and wastewater services, subject to Liberty's compliance with the terms of this Agreement, including provisions for the payment of a Water/Wastewater In-Lieu (defined below).

H. WHEREAS, the Liberty Elementary School District No. 25 has the power to enter into this Agreement pursuant to the authority granted under A.R.S. § 15-342 (13), which allows it to enter into contracts or agreements with other public agencies for services.

I. WHEREAS, the governing board of the Liberty Elementary School District No. 25 has approved the terms of this Agreement and authorized its execution.

J. WHEREAS, the Mayor and Council of the City of Goodyear have approved the terms of this Agreement and authorized its execution.

K. WHEREAS, Liberty and City intend this Agreement to be an Intergovernmental Agreement within the meaning of A.R.S. § 11-952.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual obligations contained herein, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. **INCORPORATION OF RECITALS.** The Parties hereby adopt and incorporate, as if fully set forth herein, the Recitals stated above.

2. **DEFINITIONS:** Capitalized Terms not defined in the foregoing Recitals are defined as follows:

2.1. "Agreement" means this Intergovernmental Agreement for the Annexation and Provision of City Services to Liberty Elementary School District No. 25 Property by and between Liberty Elementary School District No. 25, a political subdivision of the State of Arizona and the City of Goodyear, an Arizona municipal corporation, as it may be amended, restated and/or supplemented in writing from time to time, and all exhibits and schedules attached thereto. References to Sections or Exhibits are to this Agreement unless otherwise specified.

2.2. "Certificate of Occupancy" means any document issued by the City that will allow a building to be occupied, including, but not limited to, a Temporary Certificate of Completion, a Certificate of Completion, a Temporary Certificate of Occupancy, or a Certificate of Occupancy.

2.3. "City" means the City of Goodyear, an Arizona municipal corporation.

2.4. "City Engineer" means the person designated by the City as the City Engineer or his/her designee.

2.5. "Development Application" means an application for the approval of any development related activities within all or part of the Property, including applications for preliminary plats, final plats, site plans, construction plans, and construction, including building, permits.

2.6. "Development Regulations" means all applicable laws, codes, ordinances, rules, regulations, standards, guidelines, conditions of approval, and the like governing the development of property within the City as they may be amended from time to time. This includes, by way of example but not limitation: the Building Codes and Regulations (currently Chapter 9 of the Goodyear City Code), the City of Goodyear's Design Guidelines Standards, the City of Goodyear Engineering Design Standards and Policies as they all may be adopted and amended from time to time.

2.7. "EDS&PM means the City of Goodyear Engineering Design Standards and Policies Manual as it may be amended from time to time.

2.8. "Future Phase Buildings" means the construction of buildings and facilities on the Property not included in the Initial Phase and the expansion or change in use of the buildings included in the Initial Phase.

2.9. "Initial Phase" means the construction of five buildings on the Property consisting of three academic buildings (buildings with classroom), a building that will house administrative staff and pre-K students and a multipurpose and physical education building.

2.10. "Liberty" means Liberty Elementary School District No. 25, a political subdivision of the State of Arizona.

2.11. "Owner" means Liberty Elementary School District No. 25, a political subdivision of the State of Arizona and its successors and assigns, which includes any person or entity that succeeds to or is assigned any interest in all or part of the Property.

2.12. "Public Infrastructure" means infrastructure improvements that will be owned and maintained by the City and includes by way of example, but not limitation, street improvements, traffic signal improvements, water delivery lines that are located outside the boundaries of the Property, and wastewater transmission lines that are located outside the boundaries of the Property.

2.13. "Traffic Study" means any study, report or analysis that analyzes the traffic impacts the operation of the school on the Property will have on public streets and identifies infrastructure improvements needed to address such impacts.

2.14. "Warranty Bond" means a bond, in a form approved by the City Engineer, that warrants against defective workmanship and/or materials the Public Infrastructure Owner constructs in connection with the development of the Property for a two-year period.

2.15. Water/Wastewater In-Lieu Fee means the amount equivalent to all costs an Institutional User located within the boundaries of the City of Goodyear would pay to hook up to the city's water and wastewater system, which includes by way of example but not limitation, meter fees, hook-up fees, account set up and activation fees, and water and wastewater development impact fees, which are based on the size of the meters issued if the water meters required to serve the Property are 1.50 inches or less if water meters larger than 1.50 inches are required based on the per gallon costs of $21.21 (water) multiplied by the average day water demands of the Property, in gallons, from (1) the City of Goodyear Engineering Standards, (2) a submitted water study, or (3) other estimated water demand flows; and the per gallon costs of $27.76 per gallon (wastewater) multiplied by the average day wastewater flows from the Property, in gallons, from (1) the City of Goodyear Engineering Standards, (2) a submitted water study, or (3) other estimated wastewater flows from the Property.

3. **EFFECTIVE DATE.** The execution of this Agreement by the Parties, the approval of this Agreement by Resolution of the Goodyear City Council, are conditions precedent to this Agreement becoming effective. This Agreement shall take effect upon the later of (i) the full execution of this Agreement by the Parties and (ii) the date the Resolution approving this Agreement becomes effective.

4. **EXPIRATION DATE.** This Agreement shall expire after the obligations of the Parties have been fully satisfied. Notwithstanding the foregoing, this Agreement shall terminate on July 1, 2027 if the Property has not been annexed into the City of Goodyear by that date and it may be terminated earlier upon the mutual agreement, in writing, executed by the Parties.

GENERAL DEVELOPMENT OBLIGATIONS

5. **GENERAL OBLIGATIONS.** The following General Obligations apply to the development of the Property:

5.1. DEVELOPMENT REGULATIONS. Except as otherwise expressly provided in this Agreement and subject to the terms and conditions of this Agreement, the Parties agree that the development of the Property shall be governed by the Development Regulations in effect as of the date of this Agreement or in effect when the specific Development Application is approved, whichever is later. For example, future applications for building permits shall be subject to the Development Regulations in effect when the application is approved.

5.2. CONSTRUCTION STANDARDS. All Public Infrastructure Owner is required to design and construct or cause to be designed and constructed, shall be designed and constructed in accordance with applicable Development Regulations in effect when the application for permits for the construction of such infrastructure are approved.

5.3. AS-BUILT DRAWINGS. Upon the completion of the Public Infrastructure Owner is required to design and construct or cause to be designed and constructed, Owner shall notify the City in writing that the infrastructure has been completed and provide the City with "as-built" drawings and plans of the completed infrastructure. After receipt of the notice, the City Engineer or his/her designee shall inspect the infrastructure identified in the written notice to

determine whether it has been constructed in accordance with the applicable standards and the plans and specifications for the infrastructure. Upon completion of the inspection and review of the "as-built" drawings, the City shall deliver written notice to Owner either (1) approving the construction of the infrastructure and, agreeing to accept the conveyance of the infrastructure after the Property is annexed into the City; or (2) providing a punch list of specific items that are not in accordance with the applicable standards and/or the plans and specifications that are to be corrected by Owner. So long as such infrastructure is constructed in accordance with the applicable standards and plans and specifications, as verified by the City Engineer, following an inspection; all punch list items have been timely completed; and accurate "as built" drawings and plans of the completed Public Infrastructure Improvements have been provided to the City, the City shall accept the Public Infrastructure Improvements after the Property is annexed into the City.

5.4. REQUIREMENTS NOT ADDRESSED. The Parties acknowledge and agree that this Agreement addresses only certain issues with respect to the development of the Property and provides only those rights expressly set forth in this Agreement. Owner shall, at Owner's sole cost and expense, construct additional public or private infrastructure that may be required by applicable Federal, State, County or City laws, ordinances, codes, rules, regulations, standards, guidelines, conditions of approval and the like, for development of the Property, including by way of example, but not limitation, infrastructure needed for drainage, internal roads, and emergency access roads. Owner shall comply with the City's requirements concerning the development process for the development of the Property, including by way of example but not limitation, complying with applicable procedures and processes governing submission requirements, and Owner shall pay all applicable costs required by the City, including by way of example, but not limitation, permit fees, application fees, taxes, water development impact fees, wastewater development impact fees, and street development impact fees.

6. **OWNER'S OBLIGATIONS**. In addition to the obligations set forth above, and as a condition for the City annexing the Property, Owner agrees as follows:

6.1. As a condition of the City annexing the Property into the City of Goodyear and providing water and wastewater services to the Property, Owner agrees to pay the City a Water/Wastewater In-Lieu Fee. The City shall not annex the Property, issue any water meters needed for the City to provide water and wastewater services to the City, issue any Certificate of Occupancy for any building within the Property and/or provide water and/or wastewater services to the Property until the Water/Wastewater In-Lieu Fee has been paid to the City.

6.2. W. Lower Buckeye Road. Owner shall, at its sole cost and expense, design and construct or cause to be designed and constructed full half-street improvements to the north half of the section of W. Lower Buckeye adjacent to the Property, which shall be designed and constructed to City standard cross-section for a minor arterial street, which is currently set forth in Standard Detail G-3122 of the EDS&PM (the "Lower Buckeye North Half-Street Improvements"). The Lower Buckeye North Half-Street Improvements shall be constructed in accordance with the City's requirements as set forth in the EDS&PM. Following the completion of the Lower Buckeye North Half-Street Improvements, Owner shall comply with the requirements set forth in Section 5.3 and shall provide the City a Warranty Bond for the Lower Buckeye North Half-Street Improvements. The City shall not annex the Property or issue any Certificate of Occupancy for

any building within the Property until the Lower Buckeye North Half-Street Improvements have been completed, the Warranty Bond described herein has been provided to the City, Owner has complied with the Requirements set forth in Section 5.3, and the Property has been annexed into the City.

6.3. South 183rd Avenue. Owner shall, at its sole cost and expense, design and construct or cause to be designed and constructed full half-street improvements to the west half of the section of South 183rd Avenue adjacent to the Property, which shall be designed and constructed to City standard cross-section for a minor collector street, which is currently set forth in Standard Detail G-3124-1 of the EDS&PM (the "183rd Avenue West Half-Street Improvements"). The 183rd Avenue West Half-Street Improvements shall be constructed in accordance with the City's requirements as set forth in the EDS&PM. Following the completion of the 183rd Avenue West Half-Street Improvements, Owner shall comply with the requirements set forth in Section 5.3 and shall provide the City a Warranty Bond for the 183rd Avenue West Half-Street Improvements. The City shall not annex the Property or issue any Certificate of Occupancy for any building within the Property until the 183rd Avenue West Half-Street Improvements have been completed, the Warranty Bond described herein has been provided to the City, Owner has complied with the Requirements set forth in Section 5.3, and the Property has been annexed into the City.

6.4. Owner shall, at Owner's sole cost and expense, design and construct or cause to be designed and constructed a three-legged traffic signal at the intersection of South 183rd Avenue and West Lower Buckeye Road, including all improvements required for sidewalks, ramps required by the ADA, crosswalks, and infrastructure needed to connect the traffic signal to the City's interconnect fiber system (the "Lower Buckeye Traffic Signal Improvements"). The Lower Buckeye Traffic Signal Improvements shall be constructed in accordance with the City's requirements as set forth in the EDS&PM. Following the completion of the Lower Buckeye Traffic Signal, Owner shall comply with the requirements set forth in Section 5.3 and provide the City a Warranty Bond for the Lower Buckeye Traffic Signal Improvements. The City shall not annex the Property or issue any Certificate of Occupancy for any building within the Property until the Lower Buckeye Traffic Signal Improvements have been completed, the Warranty Bond described herein has been provided to the City, Owner has complied with the Requirements set forth in Section 5.3, and the Property has been annexed into the City.

6.5. Owner shall, at its sole cost and expense, design and construct or cause to be designed and constructed all infrastructure improvements identified by the City as being needed for the City to provide water and wastewater services to the Initial Phase, whether such improvements are needed within or outside the boundaries of the Property. The water and wastewater improvements shall be constructed in accordance with the City's requirements as set forth in the EDS&PM. Following the completion of the water and wastewater improvements, Owner shall, for all water and wastewater infrastructure improvements that are to be Public Infrastructure (the "Public Water and Wastewater Infrastructure"), comply with the requirements set forth in Section 5.3 and provide the City a Warranty Bond for the Public Water and Wastewater Infrastructure. The City shall not annex the Property or issue any Certificate of Occupancy for any building within the Property until the water and wastewater infrastructure improvements required for the City to provide water and wastewater services to the Property have been

completed, Owner has provided the City a Warranty Bond described herein for the Public Water and Wastewater Infrastructure, Owner has complied with the Requirements set forth in Section 5.3, and the Property has been annexed into the City.

6.6. Except as provided in Section 9, Owner shall not be issued water meters or be allowed to connect to the City's water delivery lines or the City's wastewater transmission lines until the Property has been annexed into the City and the City has been paid the Water/Wastewater In-Lieu Fee .

6.7. Owner shall, at its sole cost and expense, obtain approvals from all regulatory agencies whose approvals are required for the construction of water and wastewater infrastructure improvements required for the City to serve the Property and required for the connection to the City's water and wastewater system, which includes, but is not limited to, approvals from the Maricopa County Environmental Services Department.

6.8. Owner shall submit all civil and building plans for the development of the Property to the City for approval and shall follow the Maricopa County waiver process for onsite civil plans. Upon receipt of the approved plans for the Initial Phase development from the City, Owner shall submit the approved plans and all applicable fees to the Maricopa County Planning and Development Department, which will be responsible for permitting and inspecting the Initial Phase development until the property is annexed into the City.

6.9. Owner shall submit plans for fire alarms and fire sprinklers, including plans for underground fire lines to be constructed within the Property to the City for approval. Upon Owner's receipt of the approved plans for the Initial Phase development from the City, Owner shall submit the approved plans and all applicable fees to the State Fire Marshal, who shall be responsible for permitting and inspecting the Initial Phase development, including underground fire lines from public streets to the structures being constructed in the Initial Phase. Even if the City annexes the Property before Certificates of Occupancy have been issued for the Initial Phase, the State Fire Marshal shall complete the review of the plans and shall conduct all inspections, up to and through final inspections, but inspections shall be coordinated with the City's Building and Fire Code Official.

6.10. Owner shall submit all plans for off-site civil infrastructure improvements to the City and shall pay the City all applicable fees permitted by law, including by way of example, but not limitation, plan review fees, inspection fees, permit fees and the like.

6.11. Following the City's annexation of the Property, Owner shall, convey or cause to be conveyed to the City, at no cost to the City, all of the following:

6.11.1. The Lower Buckeye North Half-Street Improvements; fee ownership of the right-of-way required for the City to own the full north half-street of the section of West Lower Buckeye Road adjacent to the Property, a minor arterial street, which is a twenty-two (22) feet wide strip of the Property along the southern boundary of the Property; and a ten-feet-wide public utility easement, in a form reasonably acceptable to the City Attorney or his designee, adjacent to the north side of the right-of-way to be conveyed to the City as provided

herein.

6.11.2. The 183rd Avenue West Half-Street Improvements; fee ownership of the right-of-way required for the west half-street of South 183rd Avenue, a minor collector street, which is a thirty (30) foot wide strip of the Property along the eastern boundary of the Property; and a ten-foot-wide public utility easement, in a form acceptable to the City Attorney or his designee, adjacent to the western side of the right-of-way to be conveyed to the City as provided herein.

6.11.3. The Lower Buckeye Traffic Signal Improvements and the real property interests (easements and fee) required by the City for the City to own and operate the Lower Buckeye Traffic Signal Improvements.

6.11.4. All Public Water and Wastewater Infrastructure and the easements required by the City for such Public Water and Wastewater Infrastructure.

7. If Future Phase Buildings are constructed on the Property, Owner shall:

7.1. Design and construct or cause to be designed and constructed, at Owner's sole costs and expense, all infrastructure improvements identified by the City as being needed for the City to provide water and wastewater services to the Future Phase Buildings, whether such improvements are needed within or outside the boundaries of the Property. The water and wastewater improvements shall be constructed in accordance with the City's requirements as set forth in the EDS&PM. Following the completion of the water and wastewater improvements, Owner shall, for all Public Water and Wastewater Infrastructure, comply with the requirements set forth in Section 5.3 and provide the City a Warranty Bond for the Public Water and Wastewater Infrastructure. Owner shall, at no cost to the City, convey to the City the Public Water and Wastewater Infrastructure, and the real property interests required by the City for the Public Water and Wastewater Infrastructure. The City shall not issue any Certificate of Occupancy for any Future Phase Buildings until the water and wastewater infrastructure improvements required for the City to provide water and wastewater services to the Future Phase Buildings have been completed, Owner has: complied with the requirements set forth in Section 5.3; provided the City a Warranty Bond described herein for the Public Water and Wastewater Infrastructure; conveyed the Public Water and Wastewater Infrastructure to the City and conveyed the real property interests required by the City for the Public Water and Wastewater Infrastructure.

7.2. Pay, at the time of the issuance of a building permit or for each Future Phase Building, all applicable development impact fees. Building permits for Future Phase Buildings shall not be issued until all applicable development impact fees have been paid to the City.

7.3. Design and construct or cause to be designed and constructed, at Owner's sole cost and expense, all traffic infrastructure improvements identified in a Traffic Study approved by the City Engineer identified as being required to mitigate the traffic impacts from the operation of any Future Phase Building whether such improvements are needed within or outside the boundaries of the Property, including by way of example, but not limitation additional traffic signals. Following the completion of the traffic infrastructure improvements, Owner shall, for all

traffic infrastructure improvements that are to be Public Infrastructure (the "Public Traffic Infrastructure"), comply with the requirements set forth in Section 5.3 and provide the City a Warranty Bond for the Public Traffic Infrastructure. Owner shall, at no cost to the City, convey to the City the Public Traffic Infrastructure, and the real property interests required by the City for the Public Traffic Infrastructure. The City shall not issue any Certificate of Occupancy for any Future Phase Building until the traffic infrastructure improvements identified in a Traffic Study approved by the City Engineer identified as being required to mitigate the traffic impacts from the operation of any Future Phase Building have been completed, Owner has: complied with the requirements set forth in Section 5.3; provided the City a Warranty Bond described herein for the Public Traffic Infrastructure; conveyed the Public Traffic Infrastructure to the City, and conveyed the real property interests required by the City for the Public Traffic Infrastructure

7.4. Following the City's annexation of the Property, all civil and building plans for the Future Phase Buildings shall be submitted to the City for review and permitting and Owner shall comply with all applicable Development Regulations in effect at the time of development, including but not limited to, the requirements in the EDS&PM.

8. **CITY'S OBLIGATIONS**. The City agrees to:

8.1. Review civil plans for off-site infrastructure improvement plans submitted to the City, permit and inspect Public Infrastructure, including Public Water and Wastewater Infrastructure, being constructed off-site; and

8.2. Annex the Property into the City as provided herein. The City will annex the Property to the City if all of the following have been satisfied:

8.2.1. Owner has complied with the statutory requirements for annexation set forth in A.R.S. § 9-471; and

8.2.2. The Lower Buckeye North Half-Street Improvements have been completed, the City has been provided a Warranty Bond for the Lower Buckeye North Half-Street Improvements, and Owner or others on Owner's behalf have complied with the requirements in Section 5.3 as described in Section 6.2; and

8.2.3. The 183rd Avenue West Half-Street Improvements have been completed, the City has been provided a Warranty Bond for the 183rd Avenue West Half-Street Improvements, and Owner or others on Owner's behalf have complied with the requirements in Section 5.3 as described in Section 6.3; and

8.2.4. The Lower Buckeye Traffic Signal Improvements have been completed, the City has been provided a Warranty Bond for the Lower Buckeye Traffic Signal Improvements, and complied with the requirements in Section 5.3 as described in Section 6.4; and

8.2.5. The Public Water and Wastewater Infrastructure have been completed, the City has received a Warranty Bond for the Public Water and Wastewater Infrastructure, and Owner or others on Owner's behalf have complied with the requirements in

Section 5.3 as described in Section 6.5; and

8.2.6. Owner has complied with all requirements set forth in this Agreement related to the completion of the infrastructure improvements described in Section 8.2 and the subsections herein; and

8.3. Issue a water meter and provide water and wastewater services to the Property following the annexation of the Property and subject to Owner's compliance with the requirements set forth in this Agreement, including, but not limited to, the requirements in Sections 6.1 and 6.7; and

8.4. Review on-site civil and building plans for the development of the Initial Phase and provide Owner with approved plans to be submitted by Owner to the Maricopa County Planning and Development Department, and to provide inspections following the annexation of the Property; and

8.5. Provide Water and Sewer Notice of Will Serve Letters to Maricopa upon Owner's request and subject to satisfaction of the requirements in this Agreement, including the requirements in Section 6.7.

9. **COMPLETION BEFORE ANNEXATION**. If buildings on the Property have been completed prior to the City's annexation of the Property, the City agrees to provide Maricopa County with a Water and Sewer Notice of Will Serve, to issue a water meter for the Property, to ask that Maricopa County issue a Certificate of Occupancy for the completed buildings, and to provide water and wastewater services to the Property after all of the following have been satisfied:

9.1. The Lower Buckeye North Half-Street Improvements have been completed, the City has been provided a Warranty Bond for the Lower Buckeye North Half-Street Improvements, and Owner or others on Owner's behalf have complied with the requirements in Section 5.3 as described in Section 6.2; and

9.2. The 183rd Avenue West Half-Street Improvements have been completed, the City has been provided a Warranty Bond for the 183rd Avenue West Half-Street Improvements, and Owner or others on Owner's behalf have complied with the requirements in Section 5.3 as described in Section 6.3; and

9.3. The Lower Buckeye Traffic Signal Improvements have been completed, the City has been provided a Warranty Bond for the Lower Buckeye Traffic Signal Improvements, and complied with the requirements in Section 5.3 as described in Section 6.4; and

9.4. The Public Water and Wastewater Infrastructure have been completed, the City has received a Warranty Bond for the Public Water and Wastewater Infrastructure, and Owner or others on Owner's behalf have complied with the requirements in Section 5.3 as described in Section 6.5; and

9.5. Owner has complied with all requirements set forth in this Agreement

related to the completion of the infrastructure improvements described in Sections 6 and 8.2 and the subsections herein; and

9.6. Owner has complied with the requirements set forth in this Agreement, including, but not limited to, the requirements in Sections 6.1 and 6.7; and

9.7. All other requirements for the issuance of a Certificate of Occupancy have been satisfied.

10. **WAIVER**. Liberty understands and agrees that but for Liberty's agreement to the requirements set forth in this Agreement, including the payment of the Water/Wastewater In-Lieu Fee, the City would not provide water and/or wastewater services to the Property or annex the Property into the City. Accordingly, Liberty expressly waives any claims to challenge the obligation to complete the infrastructure improvements identified in this agreement and/or the obligation to pay the City the Water/Wastewater In-Lieu Fee and Liberty agrees to defend, hold harmless and indemnify the City against all claims, liabilities, causes of actions and damages of any kind asserted against the City related to or arising from the requirements set forth in this Agreement, including the requirement that Liberty pay the Water/Wastewater In-Lieu Fee. The terms of this Section 10 shall survive the expiration or earlier termination of this Agreement

11. **CHANGE IN OWNERSHIP**. Should Owner transfer all or part of the Property to another person or entity before annexation, the City shall have no obligation to annex the Property If Owner transfers all or part of the Property to another person or entity after the City has annexed the Property, no development shall occur until the Property has been rezoned if needed to accommodate the proposed development and the new owner shall, in addition to constructing the improvements set forth herein, comply with all City requirements and Development regulations applicable to the development of the Property, pay all development impact fees applicable to the development of the Property in accordance with A.R.S. § 9-500.18, construct, at owner's sole cost and expense, all infrastructure improvements (off-site and on-site) required by the City to provide City services to the Property, including Public Infrastructure and convey to the City, at no cost to the City all real property interests (fee ownership and/or easements) needed for the Public Infrastructure and required to be dedicated to the City pursuant to applicable development regulations.

12. **FUTURE CONDITIONS AND APPROVALS**. The Parties acknowledge and agree that this Agreement addresses only limited issues relative to the development of the Property and that the Agreement does not limit or preclude the City from imposing additional restrictions, requirements, contributions, conditions or the like for the development of the Future Phase Buildings as permitted by law. The Parties agree that nothing in this Agreement shall be deemed to require the City to grant any future administrative or legislative approvals related to the development of the Future Phase Buildings. Regardless of whether the action is provided for in this Agreement, the Parties acknowledge and agree that the City is not required to undertake any action if any federal, state, or local law requires formal action and approval by the City Council before undertaking such action until the City Council has taken the required formal action and has approved the action.

GENERAL TERMS

13. **ENTIRE AGREEMENT**. This Agreement constitutes the sole and entire agreement between the Parties with respect to the matters covered herein and supersede any prior or contemporaneous agreements, understandings or undertakings, written or oral, by or between Parties and/or by or between any of the Parties and any third parties regarding the matters covered herein.

14. **AMENDMENTS.** This Agreement shall only be modified, amended or restated by a writing executed by the Owner(s) and City. In order for an amendment of this Agreement to become effective, the Party seeking the amendment shall submit its proposed amendment in writing to the other Party for review. To be effective, amendments shall be approved by the City Council, signed by the Parties and attached to this Agreement as an addendum. Amendments shall also be recorded in the Official Records of Maricopa County within ten (10) days after execution.

15. **NOTICES AND FILINGS.** Any and all notices, filings, approvals, consents or other communications required or permitted by this Agreement shall be given in writing and personally delivered or sent by registered or certified mail, return receipt requested, postage prepaid, addressed as follows:

The City:
City of Goodyear
Attn: City Manager
1900 North Civic Square
Goodyear, Arizona 85395

Owner:
Superintendent
Liberty Elementary School District
19871 W. Fremont Road
Buckeye AZ 85326

With copy to:
City of Goodyear
Attn: Development Services Director
1900 North Civic Square
Goodyear, Arizona 85395

With copy to:
City of Goodyear
Attn: City Attorney
1900 North Civic Square
Goodyear, Arizona 85395

or to any other addresses as any of the Parties hereto may from time to time designate in writing and deliver in a like manner. Notices, filings, consents, approvals and communications shall be deemed to have been given as of the date of delivery if hand delivered, or as of twenty-four (24) hours following deposit in the U.S. Mail, postage prepaid and addressed as set forth above.

16. **COVENANTS RUNNING WITH THE LAND**. The rights and duties under this Agreement shall be for the benefit of, and a burden upon, the Property, and they shall be covenants

running with the land.

17. **SUCCESSORS AND ASSIGNS**. The provisions of this Agreement are binding upon and shall inure to the benefit of the Parties, and all of their Successors and Assigns; provided, however, that Owner's rights and obligations hereunder may be assigned in whole or in part only upon prior written consent by the City, however any assignment to any subsequent owner of all or any portion of the Property may be made without further consent from the City.

18. **NO AGENCY OR PARTNERSHIP**. Neither City nor Owner is acting as the agent of the other with respect to this Agreement, and this Agreement shall not be deemed to create a partnership, joint venture, or other business relationship between the City and Owner.

19. **CONFLICTS OF INTEREST**. This Agreement is subject to the provisions of A.R.S. § 38-511, and may be terminated by either Party in accordance with such provisions.

20. **DEFAULTS AND REMEDIES**. Any Party shall be in default under this Agreement ("Default"), if it fails to satisfy any term or condition as required under this Agreement within thirty (30) business days following written notice from the other Party ("Notice"); provided, however, that the Notice shall set forth the specific reasons for the determination that the Party has failed to satisfy any term of condition hereof. A Party shall not be in Default if the Party commences to cure any deficiencies within thirty (30) business days of receipt of Notice and cures such deficiencies within a reasonable time thereafter.

21. **NO WAIVER**. No delay in exercising any right or remedy shall constitute a waiver thereof, and no waiver by the City or Owner of the breach of any covenant or condition of this Agreement shall be construed as a waiver of any preceding or succeeding breach of the same or any other covenant or condition of this Agreement. The terms of this Section 21 shall survive the expiration or earlier termination of this Agreement.

22. **MEDIATION**. If a dispute arises out of or related to this Agreement, or breach thereof, the Parties agree first to try to settle the dispute through mediation before resorting to arbitration, litigation, or some other dispute resolution. In the event that the Parties cannot agree upon the selection of a mediator within seven (7) days, either Party may request a presiding judge of the Superior Court to assign a mediator from a list of mediators maintained by the Arizona Municipal Risk Retention Pool. If a dispute arises out of or relates to this Agreement, or the breach thereof, and if the dispute cannot be settled through negotiation, the Parties agree first to try to settle the dispute through mediation before resorting to arbitration, litigation or some other dispute resolution procedure. The terms of this Section 22 shall survive the expiration or earlier termination of this Agreement.

23. **WAIVER OF JURY TRIAL. UNLESS EXPRESSLY PROHIBITED BY LAW, EACH OF THE CITY AND OWNER KNOWINGLY, VOLUNTARILY, AND INTENTIONALLY WAIVES ITS RIGHT TO A TRIAL BY JURY IN ANY AND ALL ACTIONS OR OTHER LEGAL PROCEEDINGS AGAINST THE OTHER PARTY, ARISING OUT OF OR RELATING TO THIS AGREEMENT AND/OR THE TRANSACTIONS IT CONTEMPLATES, AND AGREES THAT ANY AND ALL**

ACTIONS OR OTHER LEGAL PROCEEDINGS ARISING OUT OF OR RELATING TO THIS AGREEMENT, THE TRANSACTIONS IT CONTEMPLATES, AND/OR THE WORK PERFORMED PURSUANT TO THIS AGREEMENT SHALL BE TRIED BEFORE A COURT AND NOT BEFORE A JURY. THIS WAIVER APPLIES TO ANY ACTION OR OTHER LEGAL PROCEEDING, WHETHER SOUNDING IN CONTRACT, TORT OR OTHERWISE. EACH PARTY ACKNOWLEDGES THAT IT HAS RECEIVED THE ADVICE OF COMPETENT COUNSEL. The terms of this Section 23 waiving the right to a jury trial shall survive the expiration or earlier termination of this Agreement.

24. **LIMITATION ON CLAIMS. IN NO EVENT SHALL CONSEQUENTIAL DAMAGES, EXPECTATION DAMAGES, AND/OR INCIDENTAL DAMAGES, WHICH INCLUDES, BUT IS NOT LIMITED, CLAIMS FOR LOST PROFITS, BE AWARDED AS DAMAGES FOR A BREACH OF THIS AGREEMENT, AND THE PARTIES EXPRESSLY WAIVE ANY RIGHT TO CONSEQUENTIAL DAMAGES, EXPECTATION DAMAGES, AND/OR INCIDENTAL DAMAGES IN THE EVENT OF A BREACH OF THIS AGREEMENT.** The terms of this Section 24 limiting the remedies available to the Parties in the event of a breach of the Agreement shall survive the expiration or earlier termination of this Agreement.

25. **SECTION HEADINGS**. The section headings contained in this Agreement are for convenience in reference only and are not intended to define or limit the scope of any provision of this Agreement.

26. **TERMINATION**. Except as provided in Section 4 above, this Agreement cannot be terminated except for material breach or mutual agreement of the parties. If the Agreement is terminated by the non-breaching party for material breach, the non-breaching party shall have all remedies provided by Arizona law for such breach.

27. **FAIR INTERPRETATION**. The terms and provisions of this Agreement represent the result of negotiations between the Parties, each of which has had the opportunity to consult with counsel of its own choosing and/or has been represented by counsel of its own choosing, and none of whom has acted under any duress or compulsion, whether economic or otherwise. Consequently, the Parties agree the terms and provisions of this Agreement shall be construed according to their usual and customary meanings, and the Parties each hereby waive the application of any rule of law (common law or otherwise) that ambiguous or conflicting terms be resolved against the Party who prepared, or whose attorney prepared, the executed Agreement or any earlier draft of same. The terms of this Section 27 shall survive the expiration or earlier termination of this Agreement.

28. **CHOICE OF LAW, VENUE, AND ATTORNEY'S FEES**. In any dispute under this Agreement, the successful Party shall be entitled to collect from the other Party its reasonable attorneys' fees, and other costs as determined by a Court of competent jurisdiction. The Parties agree that any dispute, controversy, claim or cause of action arising out of or related to this Agreement shall be governed by the laws of the State of Arizona. The Parties further agree that the venue for any dispute, controversy, claim or cause of action arising out of or related to this Agreement shall be Maricopa County and that any action filed shall be heard in a state court of

competent jurisdiction located in Maricopa County. The Parties expressly waive the right to object, for any reason, to the venue of Maricopa County. The terms of this Section 28 shall survive the expiration or earlier termination of this Agreement.

29. **SURVIVAL CLAUSE**. All provisions in this Agreement that should logically survive the expiration or earlier termination of this Agreement shall survive the expiration or earlier termination of this Agreement. This includes by way of example: all provisions imposing obligations that will not be triggered until the Agreement is terminated, all indemnification provisions; all limitation of remedies and damages provisions; all provisions waiving claims; and all provisions relieving any Party of liability for actions taken. The fact that certain provisions in this Agreement expressly state that such provisions shall survive the expiration or earlier termination of this Agreement shall not be construed as limiting the application of the Survival Clause set forth in this Section 29 to other provisions in the Agreement.

30. **REPRESENTATIONS AND WARRANTIES OF OWNER**. As of the date of the execution of this Agreement, Owner represents and warrants the following:

30.1. OWNERSHIP. Liberty Elementary School District No. 25, a political subdivision of the State of Arizona is the owner of the Property and has the full right and authority to submit its interest in the Property to the obligations hereunder.

30.2. AUTHORIZATION. Owner agrees that the persons executing this Agreement on behalf of Owner have been duly authorized to do so.

31. **REPRESENTATIONS AND WARRANTIES OF CITY**. As of the Effective Date of this Agreement, the City represents and warrants the following:

31.1. APPROVAL. City has approved this Agreement at a duly held and noticed public meeting by its Mayor and City Council, at which a quorum was duly present, and has authorized the execution hereof.

31.2. AUTHORIZATION. City agrees that the persons executing this Agreement on behalf of City have been duly authorized to do so.

32. **COUNTERPARTS**. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original and all of which, taken together, shall constitute one agreement, binding on the Parties. Further this Agreement may be executed and delivered by electronic transmission. A manually signed copy of this Agreement delivered by facsimile, email, or other means of electronic transmission shall be deemed to have the same legal effect as delivery of an original signed copy of this Agreement provided however, Owner shall deliver an original to the City for recordation in the Official Records of Maricopa County.

33. **PAGE NUMBERING**. The page numbering of this document is exclusive of the Exhibits attached hereto.

IN WITNESS WHEREOF, and agreeing to be bound by the terms of this Agreement the Parties have caused this Agreement to be executed by their duly appointed representatives.

OWNER:

Liberty Elementary School District No. 25,
a political subdivision of the State of Arizona

By: _____
Name: Cort Monroe
Title: Superintendent

CERTIFICATE OF NOTARIAL ACT

STATE OF ARIZONA)
) **ss.**
County of Maricopa)

This record was acknowledged, signed, and sworn to before me on the 16th day of April, 2025, by Cort Monroe, the Superintendent (title or office) of Liberty Elementary School District No 25 of Maricopa County, Arizona, on behalf of the District.

Brenda L. Rosalez
Notary Public

Stamp:

My commission expires: 11/2/2028

BRENDA L. ROSALEZ NOTARY PUBLIC STATE OF ARIZONA MARICOPA COUNTY COMMISSION # 676064 COMMISSION EXP. 11/02/2028

APPROVAL OF DISTRICT ATTORNEY

The foregoing Intergovernmental Agreement has been reviewed pursuant to A.R.S. §11-952 by the undersigned counsel who have determined that it is in proper form and is within the powers and authority granted under the laws of the State of Arizona.

Cyndi R. Dragseth
District Attorney

Signatures, Acknowledgments and Exhibit(s) on Following Pages

CITY:

CITY OF GOODYEAR, an Arizona municipal corporation

By: _____
Wynette Reed
Its: City Manager

CERTIFICATE OF NOTARIAL ACT

STATE OF ARIZONA)
) **ss.**
County of Maricopa)

This record was acknowledged, signed, and sworn to before me on the _____ day of _____, 2025, by Wynette Reed, the City Manager of the City of Goodyear, Arizona, an Arizona municipal corporation on behalf of the City.

_____
Notary Public

Stamp:

My commission expires: _____

APPROVAL OF CITY ATTORNEY

The foregoing Intergovernmental Agreement has been reviewed pursuant to A.R.S. §11-952 by the undersigned counsel who have determined that it is in proper form and is within the powers and authority granted under the laws of the State of Arizona.

_____
City Attorney

ATTEST:

_____
City Clerk

EXHIBIT "A"

PROPERTY LEGAL DESCRIPTION

(on the following pages)



LIBERTY 8
ANNEXATION
LEGAL DESCRIPTION

JOB NO. 23-0699

JUNE 27, 2024

A PARCEL OF LAND LYING IN THE SOUTHWEST QUARTER OF SECTION 15, TOWNSHIP 1 NORTH, RANGE 2 WEST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A FOUND CITY OF GOODYEAR BRASS CAP FLUSH AT THE SOUTH QUARTER CORNER OF SAID SECTION 15, FROM WHICH A FOUND CITY OF GOODYEAR BRASS CAP FLUSH AT THE SOUTHWEST CORNER OF SAID SECTION 15, BEARS NORTH 89 DEGREES 55 MINUTES 52 SECONDS WEST, (**BASIS OF BEARING**) 2,641.70 FEET;

THENCE, NORTH 89 DEGREES 55 MINUTES 52 SECONDS WEST, ALONG THE SOUTH LINE OF SAID SOUTHWEST QUARTER, 534.99 FEET;

THENCE, LEAVING SAID SOUTH LINE NORTH 00 DEGREES 00 MINUTES 55 SECONDS WEST, 1,323.17 FEET TO THE NORTH LINE OF THE SOUTH HALF OF SAID SOUTHWEST QUARTER;

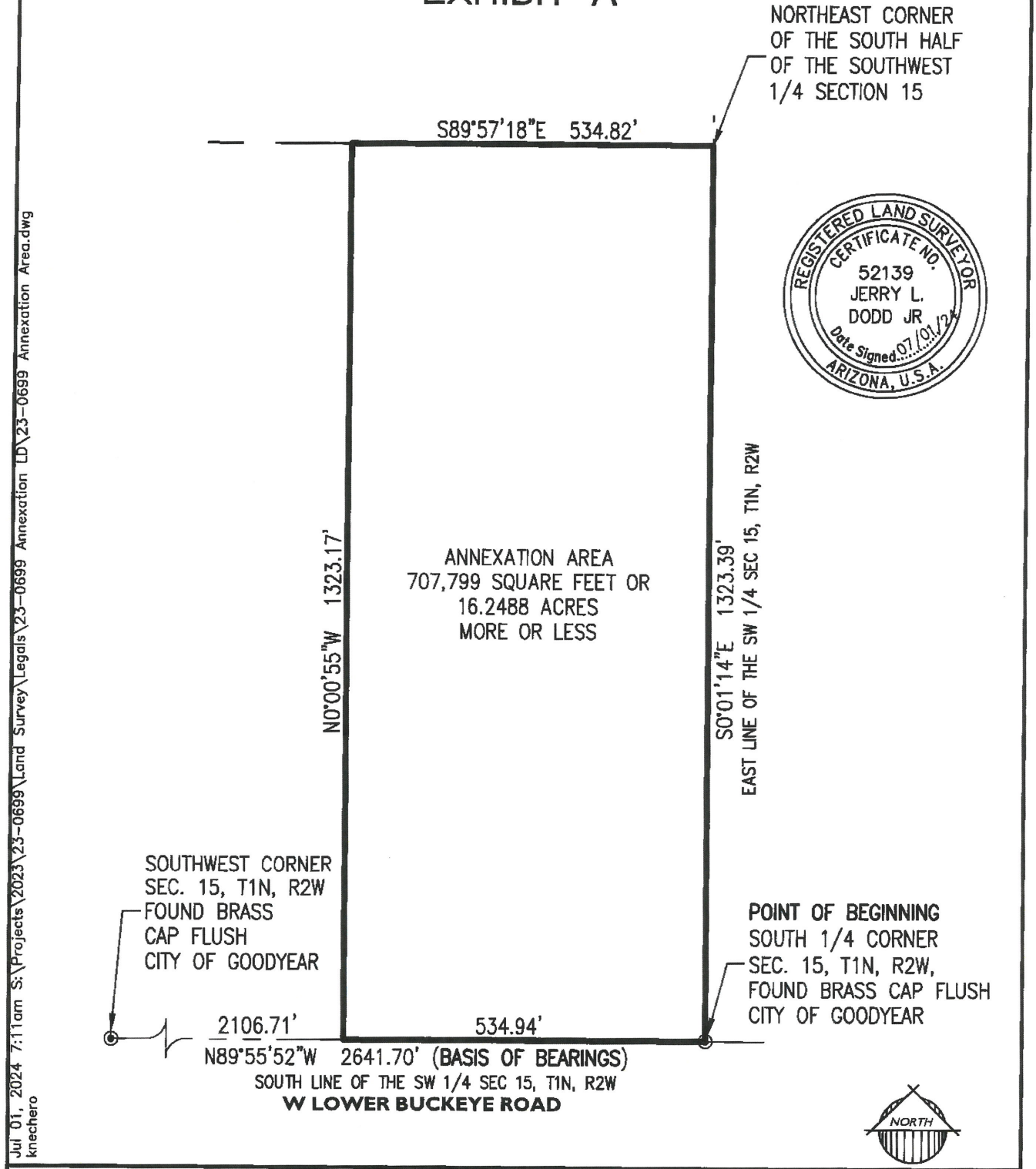
THENCE, SOUTH 89 DEGREES 57 MINUTES 18 SECONDS EAST ALONG SAID NORTH LINE, 534.82 FEET TO THE NORTHEAST CORNER THEREOF;

THENCE, SOUTH 00 DEGREES 01 MINUTES 14 SECONDS EAST ALONG THE EAST LINE THEREOF, 1,323.39 FEET, TO THE **POINT OF BEGINNING**.

SAID PORTION OF LAND CONTAINING **707,799**SQUARE FEET, OR **16.2488** ACRES, MORE OR LESS, AND BEING SUBJECT TO ANY EASEMENTS, RESTRICTIONS, AND/OR RIGHTS-OF-WAYS OF RECORD OR OTHERWISE.

THIS DESCRIPTION SHOWN HEREON IS NOT TO BE USED TO VIOLATE SUBDIVISION REGULATIONS OF THE STATE, COUNTY AND/OR MUNICIPALITY, OR ANY OTHER LAND DIVISION RESTRICTIONS.

EXHIBIT "A"



Jul 01, 2024 7:11am S:\Projects\2023\23-0699\Land Survey\Legals\23-0699 Annexation LD\23-0699 Annexation Area.dwg
knechero

23-0699	Drawn by: KFN	Reviewed by: JLD	Sheet Scale: 1" = 200'	Sheet No: 1 of 1

LIBERTY 8
ANNEXATION
EXHIBIT "A"

EPS GROUP
1130 N. Alma School Rd.
Ste. 120 Mesa, AZ 85201
T:480.503.2250 | F:480.503.2258
www.epsgroupinc.com

Intergovernmental Agreement - Liberty Elementary School District No. 25



It's a Great time to be in Goodyear.

Liberty Elementary School District No. 25

Previous and New Site Locations

- School was to be built half in Amber Meadows and half in La Privada
- LESD's timing for the school did not align with the development schedules



It's a Great time to be in Goodyear.

Liberty Elementary School District No. 25

Property Location

15.8 acre property located in unincorporated Maricopa County



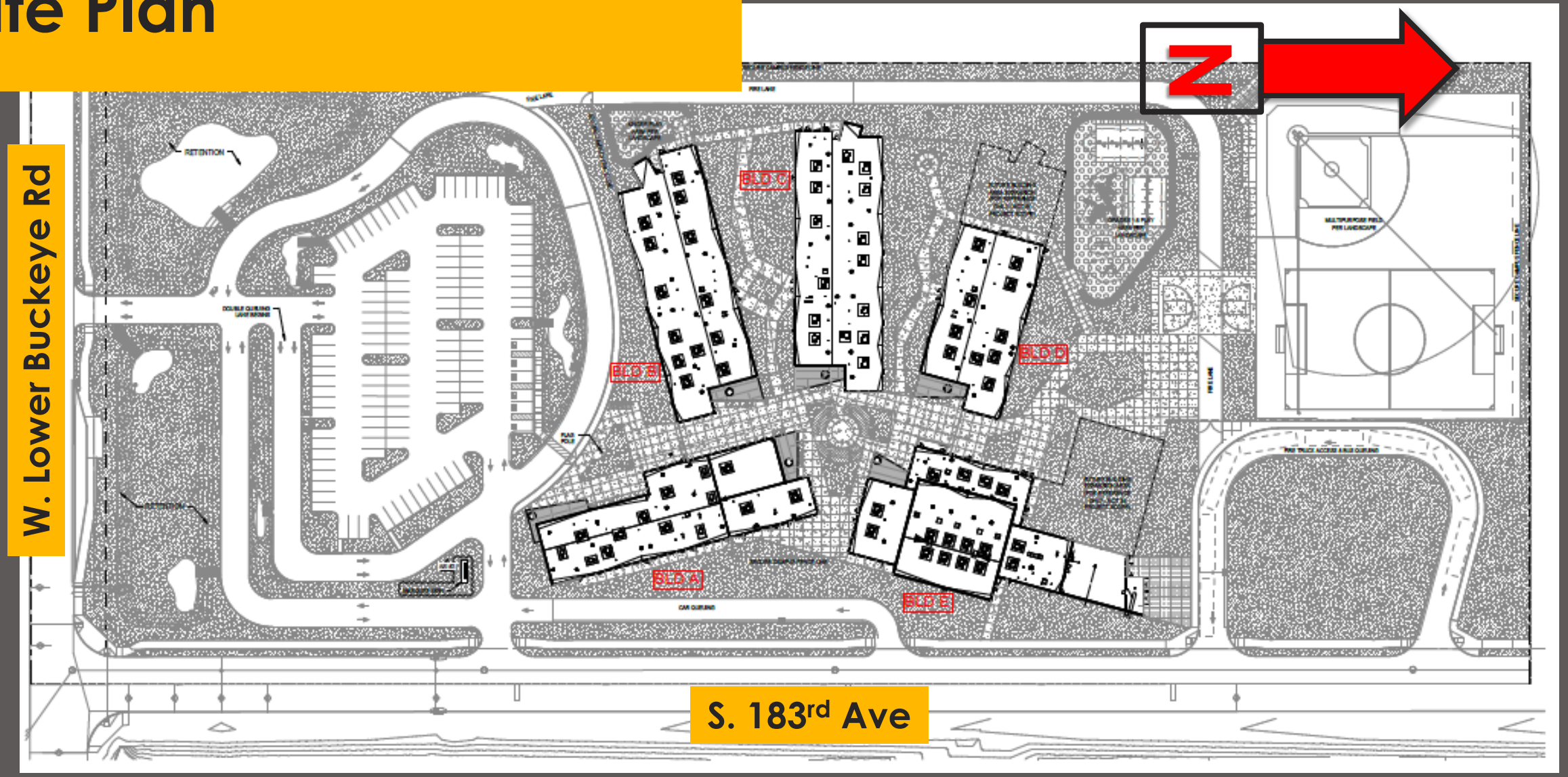
Background

- Large elementary school campus
  - Five buildings to accommodate ~850 students
  - Potential for future expansion
- Liberty has requested the City annex the property
  - Access city services, including police, fire, water and wastewater



Liberty Elementary School District No. 25

Site Plan



Liberty Elementary School District No. 25

Aerial Photo



Liberty's Responsibilities

- Construct full half-street improvements
- Provide two points of access
- Construct a traffic signal
- Construct all infrastructure improvements

City's Responsibilities

- Annex the Property upon Liberty's completion of required improvements
- Review on-site civil and building plans for the Initial Phase and provide inspections
- Provide water and wastewater services to the Property

Next Steps

APPROVE IGA

(LIBERTY RECEIVED IGA APPROVAL ON APRIL 15, 2025)

CONTINUE ANNEXATION PROCESS

SCHOOL OPENING

(AUGUST 2025)

Recommendation

Approve the proposed Intergovernmental Agreement for the Annexation and Provision of City Services to Liberty Elementary School District No. 25 Property

ITEM #: 12.
DATE: 04/28/2025
AI #:2614

CITY COUNCIL ACTION REPORT

SUBJECT: ANNEXATION NEAR PERRYVILLE AND YUMA ROADS

STAFF PRESENTER(S): Guadalupe Ortiz Cortez, Principal Planner

---

OTHER PRESENTER(S):
Susan E. Demmitt, Gammage & Burnham PLC

SUMMARY

Authorization to initiate the annexation of approximately 31.4 acres of property, generally located 650-feet east of the northeast corner of South Perryville Road and West Yuma Road.

STRATEGIC PLAN ALIGNMENT

INFRASTRUCTURE

RECOMMENDATION

Authorize staff to initiate the annexation of approximately 31.4 acres of property, generally located 650-feet east of the northeast corner of South Perryville Road and West Yuma Road. (Guadalupe Ortiz Cortez, Principal Planner)

FISCAL IMPACT

Annexation of land has a fiscal impact. A brief overview of the anticipated public infrastructure and services impact is included in the staff analysis section of this CAR. There is no fiscal impact associated with authorizing the staff to proceed with the state statutory requirements for annexation. Authorizing the process to move forward does not commit the City Council to approve the annexation.

BACKGROUND AND PREVIOUS ACTIONS

This item has not been previously presented to Council. The application request is for the annexation of approximately 31.4 acres of property (the “Property”), generally located 650-feet east of the northeast corner of South Perryville Road and West Yuma Road. The Property abuts a trailer park within Maricopa County (zoned RU-43) to the west, the future La Privada residential subdivision to the north, within the city of Goodyear, and Paseo Place residential subdivision to the east, also within the city of Goodyear. To the south is Yuma Road and across it, the future Las Ventanas residential subdivision, within the city of Goodyear. An

aerial photo of the property and vicinity can be found in Attachment A. The approximately 31.4-acre area encompasses three parcels: Parcel No. 502-40-268 owned by the Treguboff Family Trust and in the care of Fred and Patsy Darlene Treguboff, Parcel No. 502-40-267 owned by Arizona Public Service Company, and Parcel No. 502-40-280 owned by Michael A. and Joan D. Treguboff. The Annexation Map and Legal Description can be found in Attachment B. The largest parcel, Parcel No. 502-40-268 is expected to be acquired by Dominium, Inc. (Dominium), a development company focused on developing workforce housing communities, for the construction of a multifamily residential community. The applicant has submitted a concurrent application for this parcel, Parcel No. 502-40-268, to request a zoning change from the zoning designation the property would receive if annexed, AU (Agricultural Urban), to the multifamily residential R1-A zoning. The rezone application will be presented to the City Council at a later date.

STAFF ANALYSIS

Current Policy:

Arizona State Statue regulates annexation. Below is a brief summary of the annexation process:

- Staff determines whether the proposed annexation area meets the state legal requirements for annexation as set forth in A.R.S. § 9-471.
    - Staff has determined that the annexation area meets the state legal requirements for annexation pursuant to the provisions of A.R.S. § 9-471 (K).
- Assuming the proposed annexation area meets the state legal requirements for annexation, staff conducts a review of the annexation proposal to determine the desirability of the annexation.
- Staff provides an impact analysis of the annexation proposal to City Council. The City Council will consider the proposal and make a determination on whether to authorize staff to proceed with the annexation (tonight's meeting).
    - If authorization is not provided, then no further action on the annexation will be taken.
    - If authorization is provided, staff will move forward with the state statutory requirements for annexation.
- After further staff review of the proposal, a blank petition containing the legal description and an accurate map of the annexation territory is filed with the County Recorder and notice and a copy of the filing shall be given to the clerk of the board of supervisors and to the county assessor. The description shall identify the entity, if any, that will be responsible for maintaining the existing rights-of-way and roadways that are within or contiguous to the exterior boundaries of the area of the proposed annexation.
- After the blank petition is filed, there is a 30-day waiting period before signatures can be obtained.
- A public hearing must be held within the last 10 days of this 30-day waiting period to receive public input on the annexation.
- Once the 30-day waiting period is over, the blank petitions may be signed and collected.
- Once all petitions have been collected, the annexation may be scheduled for a City Council meeting for consideration.

Details of the Request:

There is one application request for your consideration:

- Annex approximately 31.4 acres of property, generally located 650-feet east of the northeast corner of South Perryville Road and West Yuma Road.

Approximately 26.76 acres out of the 31.4 acres are proposed to be acquired by Dominium for

the construction of a multifamily residential community.
The Property is located within the city's municipal planning area and meets State statutory requirements for annexation.
The City's General Plan designates the annexation area with a Neighborhood land use designation, which provides areas for residential neighborhoods and includes community facilities such as schools and places of worship. The existing County zoning for the annexation area is Rural-43 (RU-43). Upon annexation, the property would be designated the city-equivalent zoning district of Agricultural Urban (AU).
If the annexation is ultimately approved by Council, the applicant could continue with their application to rezone approximately 26.76-acres to R1-A.

CITY'S ANNEXATION POLICY
The Goodyear City Council adopted an annexation policy by Resolution 2001-768 that provides staff with guidelines for the evaluation of annexation requests:

A. The City's ability to provide basic services in a timely manner, which under state law requires the city to "have approved a plan, policy or procedure to provide the annexed territory with appropriate levels of infrastructure and services to serve anticipated development within ten years after the date the annexation becomes final (see A.R.S. § 9-471 (P)).
B. Long-term desirability for community development and economic growth
C. Likelihood of the area being developed in Maricopa County or being annexed by another city or town
D. Ability to control the quality of land uses and infrastructure standards
E. Compatibility with General Plan, infrastructure needs, and timing of development

Streets: The Property is located adjacent to S. Perryville Road to the west, a planned major arterial, within Maricopa County Department of Transportation (MCDOT) jurisdiction. The developer would be responsible in working with MCDOT to coordinate S Perryville improvements. The property is also located adjacent to W. Yuma Road to the south, a planned scenic arterial within city of Goodyear jurisdiction. The developer would be responsible for the construction of the Property's half-street improvements for W. Yuma Road. Additionally, staff will work to identify any regional road improvements warranted for the future development of the Dominium site and consider these improvements as part of Pre-Annexation Development Agreement. The annexation proposal does not include the hard corner of S Perryville Road and W Yuma Road. Thus, improvements for the intersection, including providing a traffic signal, may present challenges to work through. There could be benefit to including the hard corner in the annexation area, which will be further explored if Council authorizes the annexation to move forward.

Public Safety: The property is located within an existing Police patrol beat and the current level of service within the beat can accommodate the development of the property. Fire services will be provided by Station 188, which is located approximately 1.5 miles away from the site, and Station 184, located 3.2 miles west of the site.

Water/Wastewater: Although the Property is within the city's planning area in the Integrated Water Master Plan (IWMP), it is not in the City's service area, and the plans for this area did not include high-density residential development, as is being proposed in the re-zoning request nor does the IWMP commit water outside the boundaries of the City's service area. Moreover, the city's water supply in its current Designation of Assured Water Supply ("DAWS") has been fully committed. Although the City has submitted an application to renew its DAWS, until the DAWS has been renewed, water services' staff has expressed concern that approval

of annexations may cause ADWR to step in to prohibit continued platting within the city.

The applicant has been informed that it will need to provide a water supply. The applicant is proposing to acquire Long Term Storage Credits (“LTSCs”) from Gila River Water Storage (“GRWS”) that could be delivered through the city’s existing delivery agreements. If City Council authorizes staff to proceed with the annexation, staff will work with the applicant on a Pre-Annexation Development Agreement to ensure the applicant secures and provides the City the water resources necessary to serve the property before the annexation occurs. The pre-annexation agreement will condition the annexation on the provision of the water supply having been acquired and committed to the City upon annexation before the annexation ordinance is adopted. That way the City is assured the water supply exists before bringing the Property into the City limits because once the annexation ordinance is adopted, it becomes final 30 days later unless an objection is filed. The pre-annexation agreement will also require the Owner to pay the costs of amending the City’s DAWS to incorporate the water supply if the director of Water Services determines the amendment is required. The pre-annexation agreement will also include requirements regarding the construction of on-site and off-site infrastructure improvements that will be needed to serve the Property if the Property is annexed into the City. Although outside the city limits at the time, the Property was included in the West Goodyear Central Planning Area Master Water Study. This study analyzed water and wastewater demands for properties that would be served by the water and wastewater lines that the consortium of owners of property in West Goodyear had identified as being needed to serve their respective properties. The sizes of the water and wastewater lines proposed in the study were based on assumptions for the development of the properties that were to be served by the lines and the planning assumptions did not contemplate the densities being proposed by the applicant. The Property owner will need to construct the required infrastructure needed for the city to provide water and wastewater services to the Property.

STAFF FINDINGS

The annexation request is compatible with the General Plan provided that the water resources are provided as proposed, the developer constructs the water and wastewater infrastructure needed for the city provide services to the property, and any road improvements that will be required under the Engineering Design Standards and Polices to address the impacts of the development. The proposed annexation for the construction of a multifamily community in the area supports “complete neighborhoods” that support the needs of the residents, including a range of housing options, in the vicinity and the overall Goodyear community (General Plan Goal LC-4).

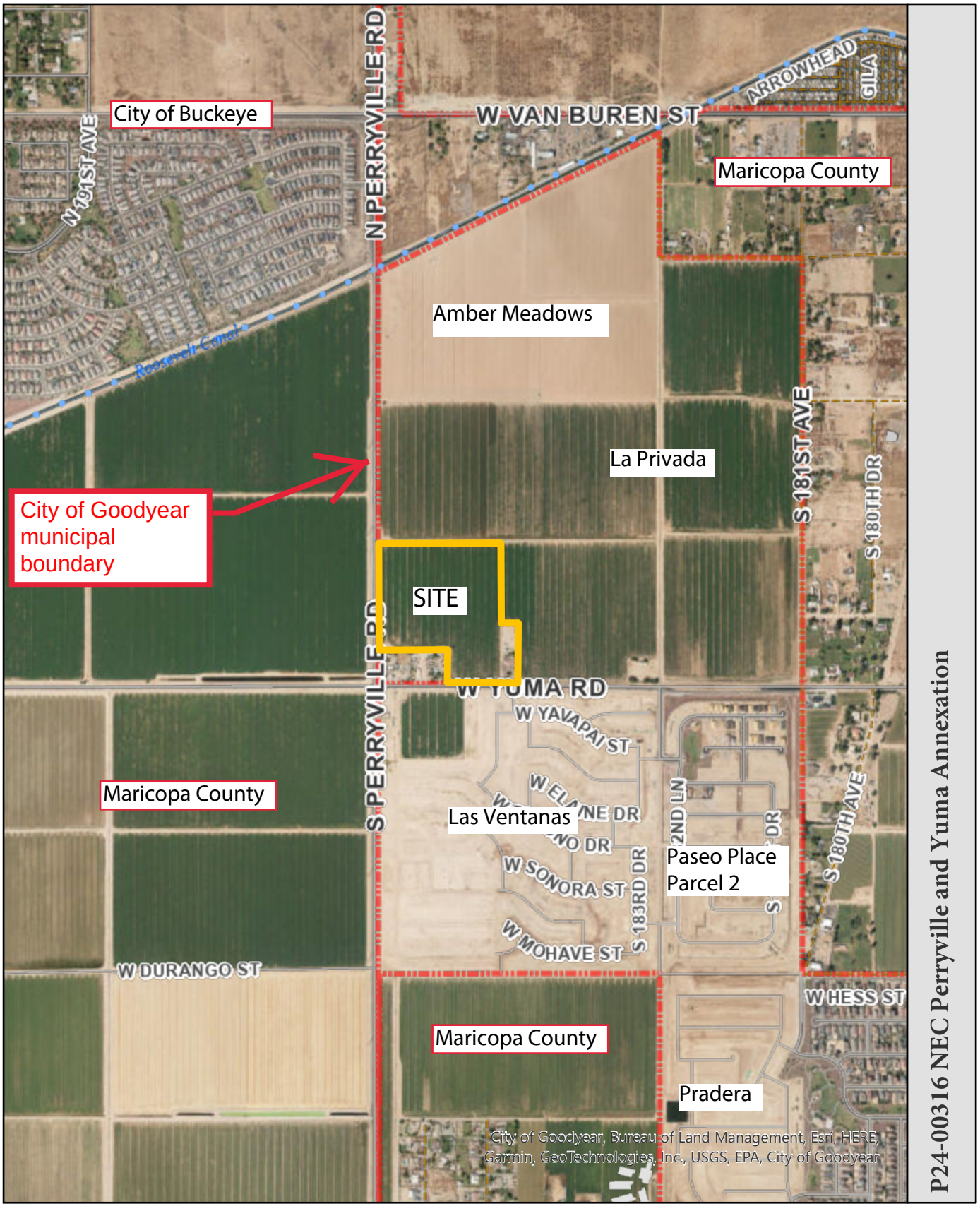
Attachments

Attachment A - Aerial Photos

Attachment B - Annexation Legal Description and Map

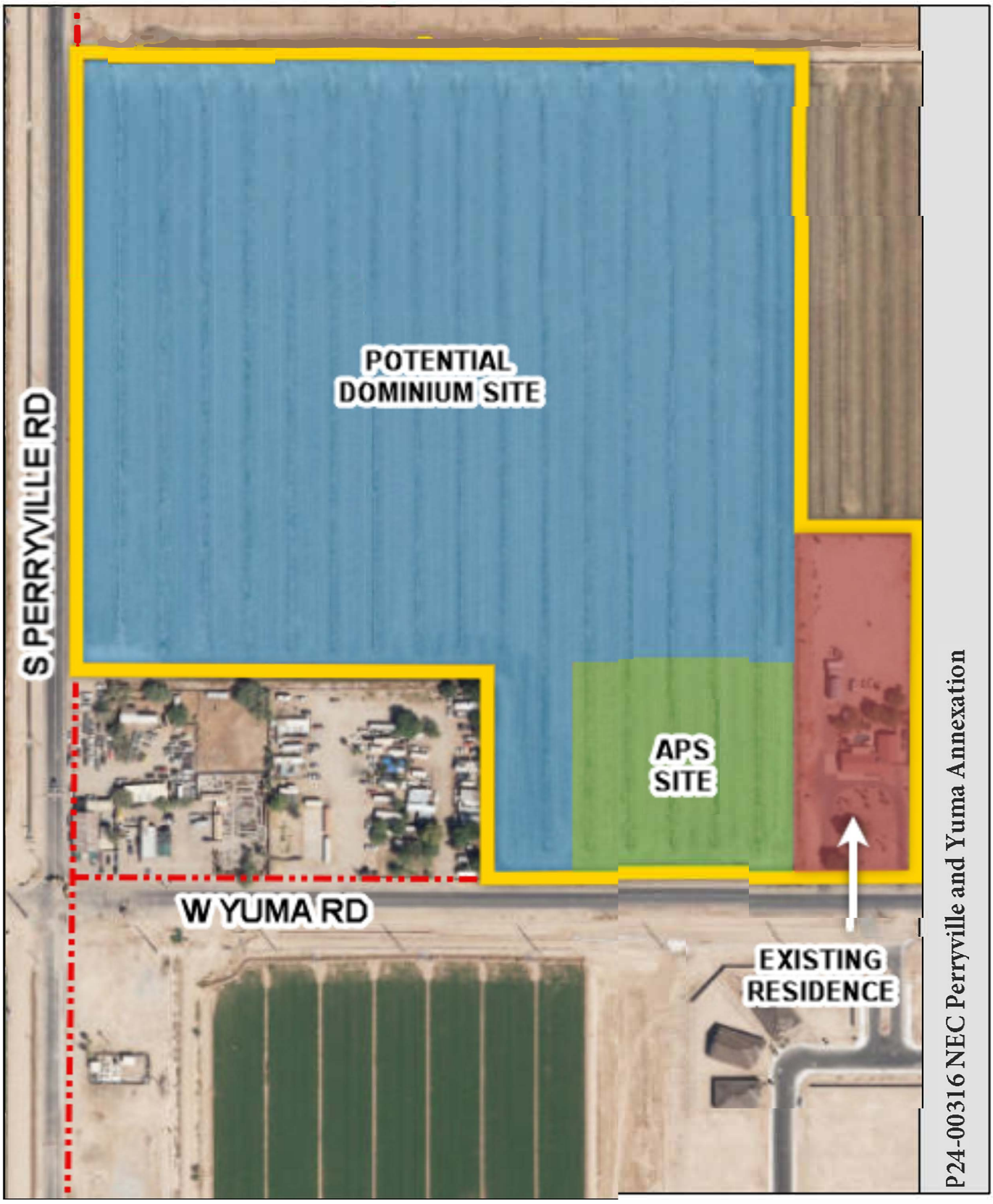
Staff Presentation

NEC Perryville and Yuma Annexation
East of S Perryville Road
North of W Yuma Road



P24-00316 NEC Perryville and Yuma Annexation

NEC Perryville and Yuma Annexation
East of S Perryville Road
North of W Yuma Road



ANNEXATION
LEGAL DESCRIPTION

BEARINGS AND DISTANCE RECITED HEREON PER ALTA/NSPS ALND TITLE SURVEY PREPARED BY BOWMAN CONSULTING DATED 2/28/24.

A PORTION OF THE SOUTHWEST QUARTER OF SECTION 10, TOWNSHIP 1 NORTH, RANGE 2 WEST OF THE GILA AND SALT RIVER MERIDIAN. MARICOPA COUNTY, ARIZONA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 10 FROM WHICH THE SOUTH QUARTER CORNER OF SAID SECTION 10 BEARS SOUTH 89°42'31" EAST, A DISTANCE OF 2644.95 FEET;

THENCE SOUTH 89°42'31" EAST, ALONG THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 10, A DISTANCE OF 1332.72 FEET;

THENCE NORTH 0°17'29" EAST, A DISTANCE OF 33.00 FEET TO THE POINT OF BEGINNING;

THENCE NORTH 89°42'31" WEST, ALONG A LINE PARALLEL WITH THE AND 33.00 FEET NORTH OF THE SOUTH LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 672.73 FEET;

THENCE NORTH 00°16'24" EAST, A DISTANCE OF 297.00 FEET;

THENCE NORTH 89°42'31" WEST, A DISTANCE OF 617.00 FEET;

THENCE NORTH 00°16'24" EAST, ALONG A LINE PARALLEL WITH AND 43.00 FEET EAST OF THE WEST LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 10, A DISTANCE OF 994.38 FEET

THENCE SOUTH 89°42'31" EAST, A DISTANCE OF 1133.23 FEET;

THENCE SOUTH 00°16'24" WEST, A DISTANCE OF 734.38 FEET TO THE NORTHWEST CORNER OF APN 502-40-280 AS DESCRIBED IN DOCUMENT NUMBER 2018-0621736, M.C.R.;

THENCE SOUTH 89°42'31" EAST, A DISTANCE OF 156.50 FEET;

THENCE SOUTH 00°16'24" WEST, ALONG THE EAST LINE OF SAID DOCUMENT NUMBER 2018-0621736, M.C.R., A DISTANCE OF 557.00 FEET TO THE POINT OF BEGINNING.

SAID DESCRIPTION CONTAINING 31.39 ACRES±.

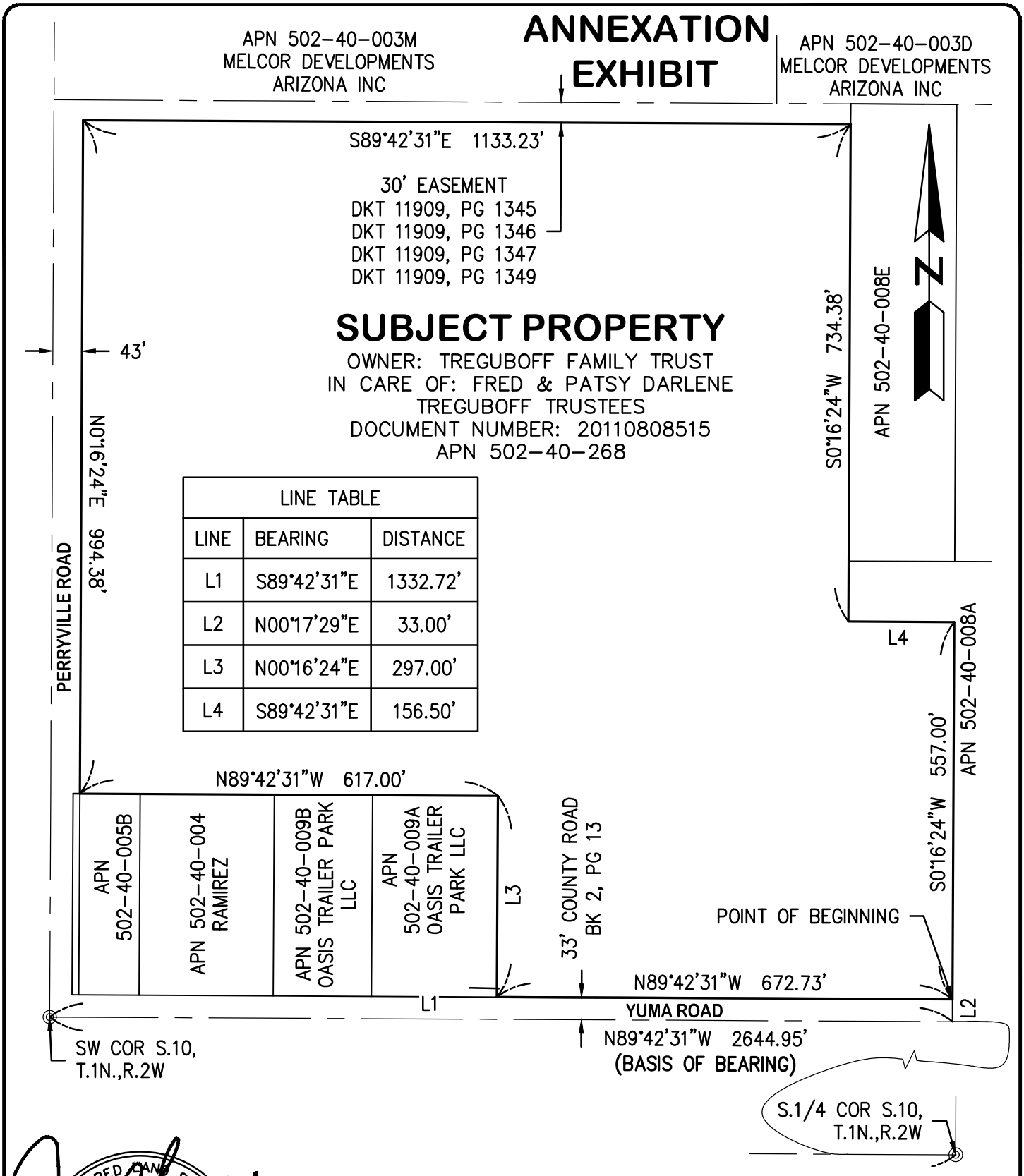
REGISTERED LAND SURVEYOR
CERTIFICATE NO.
29865
JAMES A.
BRUCCI
DATE SIGNED 1/15/25
ARIZONA U.S.A

TITLE:	XB01
SCALE:	N.T.S.
DATE:	1/15/2025
DESC:	ANNEXATION

HUNTER ENGINEERING
CIVIL AND SURVEY
10446 N. 74TH STREET,
SUITE 140
SCOTTSDALE, AZ 85258
T 480 991 3985
F 480 991 3986

PROJ.NO.DOMI011

ANNEXATION EXHIBIT



LINE TABLE		
LINE	BEARING	DISTANCE
L1	S89°42'31"E	1332.72'
L2	N00°17'29"E	33.00'
L3	N00°16'24"E	297.00'
L4	S89°42'31"E	156.50'

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
29865
JAMES A. BRUCCI
DATE SIGNED 1/15/25
ARIZONA U.S.A

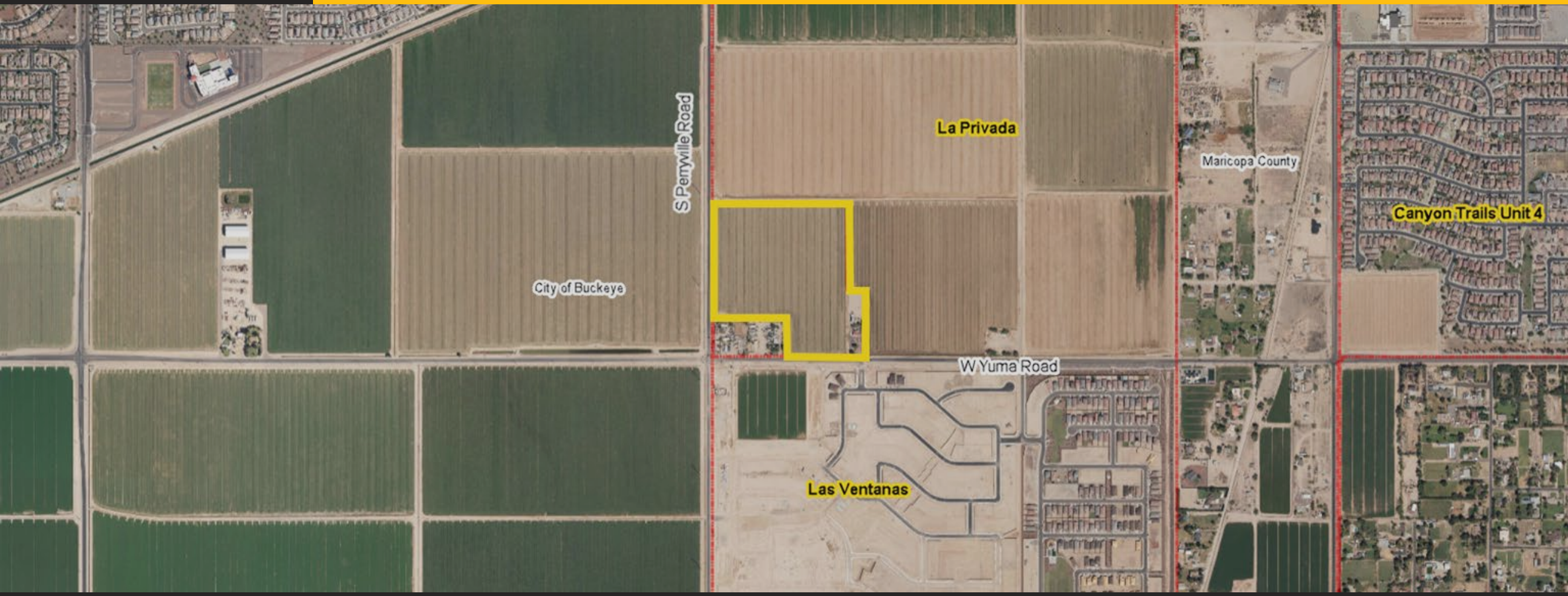
TITLE: **XB01**
SCALE: 1"=200'
DATE: 1/15/2025
DESC: ANNEXATION

HUNTER ENGINEERING
CIVIL AND SURVEY
10446 N. 74TH STREET,
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SCOTTSDALE, AZ 85258
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F 480 991 3986

PROJ.NO.DOMI011

It's a Great time to be in Goodyear.

ANNEXATION
NEAR PERRYVILLE RD AND YUMA RD



Annexation near Perryville and Yuma

Annexation Property

Approx. 31.4 acres



Process

Annexation near Perryville and Yuma Roads

- Tonight – Council authorization
- Next Step if authorized – first public hearing

Evaluation Criteria

Annexation near Perryville and Yuma Roads

- Ability of the City to provide basic services in a timely manner and with an acceptable revenue to cost ratio.
- Long term desirability for community development and economic growth.
- Likelihood of area proposed to be annexed being developed in the County and never wishing to be annexed by any other city.
- Ability to control the quality of land use types, appearance, and standards for constructing infrastructure.
- Compatibility with the General Plan, infrastructure needs, and timing of development.

Evaluation Criteria

Annexation near Perryville and Yuma Roads

- Ability of the City to provide basic services in a timely manner and with an acceptable revenue to cost ratio
  - Streets and transportation
  - Emergency services
  - Water and wastewater

Recommendation

Annexation near Perryville and Yuma Roads

- Authorize annexation of approx. 31.4 acres of property generally located 650-feet of the northeast corner of South Perryville Road and West Yuma Road.

ITEM #: 13.
DATE: 04/28/2025
AI #:2575

CITY COUNCIL ACTION REPORT

SUBJECT: SOUTH PERRYVILLE ROAD ANNEXATION, ADJACENT TO LA PRIVADA PARCEL 5

STAFF PRESENTER(S): Guadalupe Ortiz Cortez, Principal Planner

---

OTHER PRESENTER(S):

Rick Engineering

SUMMARY

Authorization to initiate the annexation of 0.978 acres of property along South Perryville Road, adjacent to La Privada Parcel 5.

STRATEGIC PLAN ALIGNMENT

INFRASTRUCTURE

RECOMMENDATION

Authorize staff to initiate the annexation of approximately 0.978 acres of property along South Perryville Road, adjacent to La Privada Parcel 5. (Guadalupe Ortiz Cortez, Principal Planner)

FISCAL IMPACT

Annexation of land has a fiscal impact. A brief overview of anticipated public infrastructure and services impacts is included in the staff analysis section of this report. If the annexation process continues, a detailed fiscal impact will be included in future City Council reports. There is no fiscal impact associated with authorizing the staff to proceed with the state statutory requirements for annexation. Authorizing the process to move forward does not commit the City Council to approve the annexation.

BACKGROUND AND PREVIOUS ACTIONS

The Property to be annexed into the City encompasses two pieces of land: an approximately 0.025-acre, 33 feet by 33 feet Property; and an approximately 0.0953, 33 feet by 1,258 feet Property, both totaling 0.978 acres (42,594 square feet). Both properties are part of the 33-foot-wide eastern section of Perryville Road adjacent to Parcel 5 of La Privada residential development. Attachment A contains Legal Descriptions and Maps. The Property is to be developed as the eastern half of South Perryville Road to City standards.

La Privada subdivision was originally rezoned from AU (Agricultural Urban) to PAD (Planned Area Development), for a residential subdivision with R1-6 and R1-7 underlying zoning, with City Council adoption of Ordinance No. 2006-1014 on June 28, 2006. This zoning was modified in 2018 with City Council adoption of Ordinance No. 2018-1411 to include property with underlying R1-4 zoning. La Privada zoning was last modified by City Council adoption of Ordinance No. 2021-1505 on July 19, 2021. The 2021 zoning modified La Privada property to add the recently acquired former Paseo Place Parcel 1 property and added reduced R1-4 development standards to the PAD. The subject Property, Parcel 5, is the parcel furthest west in La Privada property and the only parcel adjacent to South Perryville Road. Attachment B provides an aerial map of La Privada and the Annexation Property. This item has not been previously presented to Council.

STAFF ANALYSIS

Arizona State Statutes (A.R.S.) regulate annexation. Below is a brief summary of the annexation process:

- Staff determines whether the proposed annexation area meets the state legal requirements for annexation as set forth in A.R.S. § 9-471.
    - Staff has determined that the annexation area meets the state legal requirements for annexation pursuant to the provisions of A.R.S. § 9-471 (S).
- Assuming the proposed annexation area meets the state legal requirements for annexation, staff conducts a review of the annexation proposal to determine the desirability of the annexation.
- Staff provides an impact analysis of the annexation proposal to City Council. The City Council will consider the proposal and make a determination on whether to authorize staff to proceed with the annexation (tonight's meeting).
    - If authorization is not provided, then no further action on the annexation will be taken.
    - If authorization is provided, staff will move forward with the state statutory requirements for annexation.
- After further staff review of the proposal, a blank petition containing the legal description and an accurate map of the annexation territory is filed with the County Recorder and notice and a copy of the filing shall be given to the Clerk of the Board of Supervisors and to the County Assessor. The description shall identify the entity, if any, that will be responsible for maintaining the existing rights-of-way and roadways that are within or contiguous to the exterior boundaries of the area of the proposed annexation.
- After the blank petition is filed, there is a 30-day waiting period before signatures can be obtained.
- A public hearing must be held within the last 10 days of this 30-day waiting period to receive public input on the annexation.
- Once the 30-day waiting period is over, the blank petitions may be signed and collected.
- Once all petitions have been collected, the annexation may be scheduled for a City Council meeting for consideration.

Details of the Request:
There is one application request including two properties for your consideration:

- Annex an approximately 0.025-acre property
- Annex an approximately 0.0953-acre property

The Property that the annexation is requested for totals approximately 0.978-acres and is owned by Melcor Developments Arizona Inc., owner of La Privada residential subdivision properties. La Privada subdivision is being developed, and the property owners are required to complete full half-street improvements for the east half of S. Perryville Road adjacent to their respective property in Parcel 5. Although privately owned, the assessor's map reflects the property as being a county-maintained road. Accordingly, to allow the half-street improvements to S. Perryville Road to be constructed pursuant to the city's standards, the property owner is seeking to have the remainder of their respective property annexed into the City.

The City's General Plan designates this area as Neighborhoods. The existing County zoning for both properties is Rural-43 (RU-43). Upon annexation, the property would be designated the city-equivalent zoning district of Agricultural Urban (AU), but would be later dedicated as City public right-of-way.

The property is located within the city's municipal planning area and meets State statutory requirements for annexation.

City's Annexation Policy
The Goodyear City Council adopted an annexation policy by Resolution 2001-768 that provides staff with guidelines for the evaluation of annexation requests:

A. The City's ability to provide basic services in a timely manner
B. Long-term desirability for community development and economic growth
C. Likelihood of the area being developed in Maricopa County or being annexed by another city or town
D. Ability to control the quality of land uses and infrastructure standards
E. Compatibility with General Plan, infrastructure needs, and timing of development

In this case, the annexation involves the annexation of property that will be dedicated to the city as right-of-way for the east half of S. Perryville Road (The right-of-way is to be recorded with Final Plat for La Privada Phase 1 Parcel 2, E23-02623; La Privada Parcel 5 is to be platted with Final Plat E23-03054) and will be improved by the adjacent property owner to meet city standards as part of the development of La Privada. The proposed annexation will not result in any increase in service requirements on the part of the City other than additional maintenance responsibilities for road improvements for the east-half of S. Perryville Road adjacent to La Privada. It is not likely that Maricopa County will improve this stretch of S. Perryville Road between W. Yuma Road and W. Van Buren Street nor is it likely that the City of Buckeye, which has annexed to the western boundary of S. Perryville Road, will either annex past the center line of S. Perryville Road or develop the east half of S. Perryville Road. This annexation will allow the city to ensure its infrastructure standards are met, and is compatible with the City's General Plan, the city's infrastructure needs, and the timing of development as the improvements to S. Perryville Road will support the development of La Privada residential subdivision.

Attachments

Attachment A - Legal Description and Map
Attachment B - Aerial Photo
Staff Presentation

PERRYVILLE 33' x 33' SECTION
LA PRIVADA PHASE 1 PARCEL 2
LEGAL DESCRIPTION

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 10, TOWNSHIP 1 NORTH, RANGE 2 WEST, OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE WEST QUARTER CORNER OF SAID SECTION 10, MARKED BY A BRASS CAP, IN HANDHOLE, STAMPED "MARICOPA COUNTY HIGHWAY DEPARTMENT," FROM WHICH THE SOUTHWEST CORNER OF SAID SECTION 10, MARKED BY AN ALUMINUM CAP, FLUSH, STAMPED "MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION," BEARS SOUTH 00 DEGREES 28 MINUTES 00 SECONDS WEST, A DISTANCE OF 2645.12 FEET;

THENCE SOUTH 89 DEGREES 29 MINUTES 21 SECONDS EAST, ALONG THE NORTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 10, A DISTANCE OF 33.00 FEET;

THENCE SOUTH 00 DEGREES 28 MINUTES 00 SECONDS WEST, PARALLEL WITH AND 33 FEET EAST OF THE WEST LINE OF SAID SECTION 10, A DISTANCE OF 33.00 FEET;

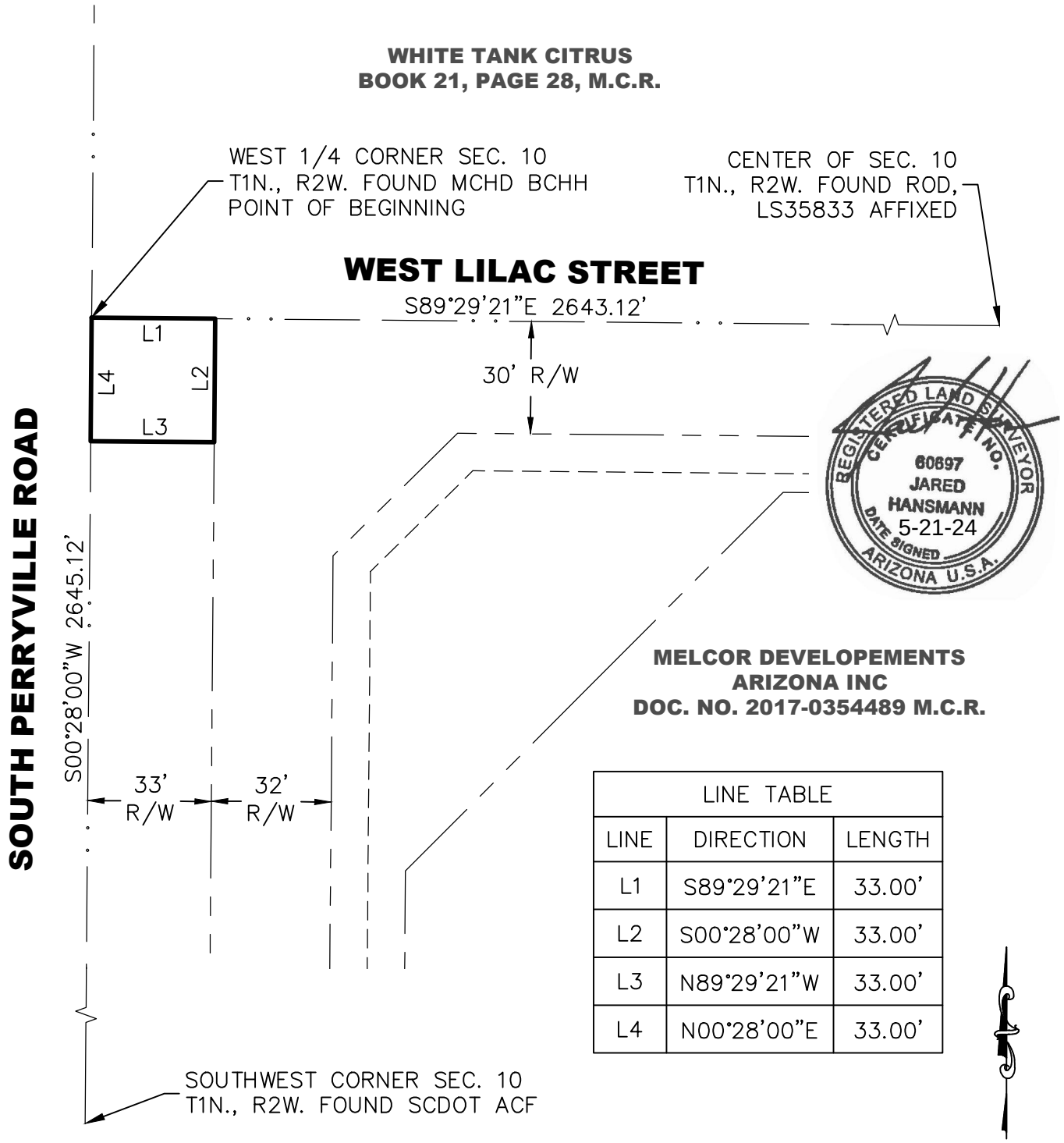
THENCE NORTH 89 DEGREES 29 MINUTES 21 SECONDS WEST, PARALLEL WITH AND 33 FEET SOUTH OF THE SAID NORTH LINE OF THE SOUTHWEST QUARTER OF SECTION 10, A DISTANCE OF 33.00 FEET;

THENCE NORTH 00 DEGREES 28 MINUTES 00 SECONDS EAST, ALONG THE SAID WEST LINE OF SECTION 10, A DISTANCE OF 33.00 FEET TO THE SAID WEST QUARTER CORNER OF SECTION 10 AND THE **POINT OF BEGINNING.**

SAID PARCEL CONTAINS 1,089 SQUARE FEET OR 0.025 ACRES, MORE OR LESS.



5-21-24



LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S89°29'21"E	33.00'
L2	S00°28'00"W	33.00'
L3	N89°29'21"W	33.00'
L4	N00°28'00"E	33.00'

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PHOENIX, AZ 85029
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rickengineering.com
San Diego - Riverside - San Luis Obispo - Sacramento - Orange - Tucson - Phoenix - Las Vegas - Denver

LEGAL DESCRIPTION

PERRYVILLE 33' X 33' SECTION

GOODYEAR, ARIZONA

DRAWING:	33'X33'STUBOUT.DWG				
JOB#	4684	SCALE:	NTS	SHT:	1 OF 1
DRAFTER:	DB	CHK:	JH	DATE:	5/20/24

PERRYVILLE ROAD 33' SECTION
LA PRIVADA

A PARCEL LOCATED IN THE SOUTHWEST QUARTER OF SECTION 10, TOWNSHIP 1 NORTH, RANGE 2 WEST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 10, A MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION ALUMINUM CAP FLUSH, FROM WHICH THE WEST QUARTER CORNER BEARS NORTH 00 DEGREES 28 MINUTES 00 SECONDS EAST, A DISTANCE OF 2645.12 FEET;

THENCE NORTH 00 DEGREES 28 MINUTES 00 SECONDS EAST, ALONG THE WEST LINE OF SAID SECTION 10, A DISTANCE OF 1,354.38 FEET TO THE POINT OF BEGINNING;

THENCE CONTINUING, NORTH 00 DEGREES 28 MINUTES 00 SECONDS EAST, ALONG SAID WEST LINE, A DISTANCE OF 1,257.74 FEET;

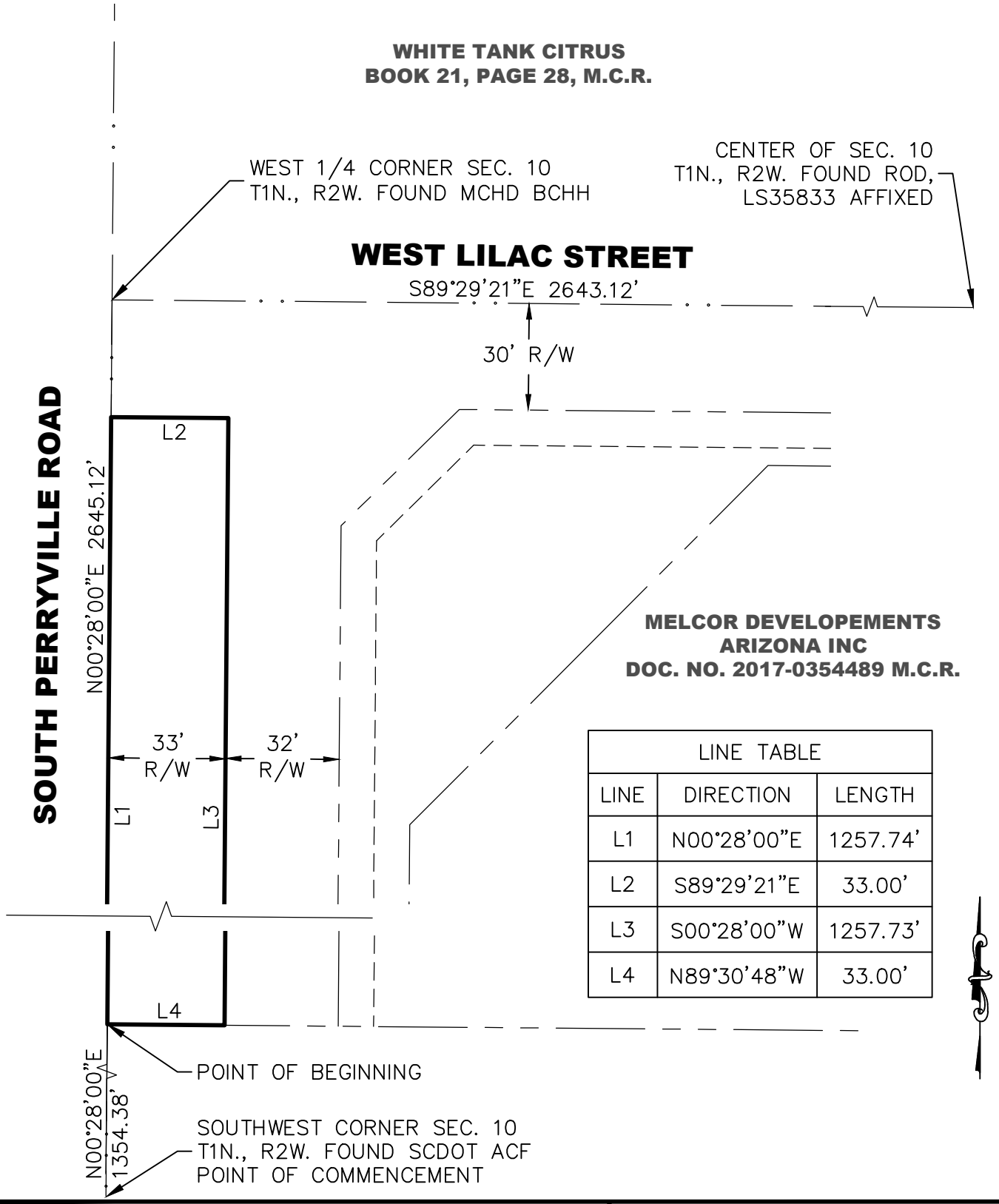
THENCE SOUTH 89 DEGREES 29 MINUTES 21 SECONDS EAST, A DISTANCE OF 33.00 FEET;

THENCE SOUTH 00 DEGREES 28 MINUTES 00 SECONDS WEST, ALONG A LINE PARALLEL WITH AND 33.00 FEET EAST OF SAID WEST LINE, A DISTANCE OF 1,257.73 FEET;

THENCE NORTH 89 DEGREES 30 MINUTES 48 SECONDS WEST, A DISTANCE OF 33.00 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINS 41,505 SQUARE FEET OR 0.953 ACRES, MORE OR LESS.





LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N00°28'00"E	1257.74'
L2	S89°29'21"E	33.00'
L3	S00°28'00"W	1257.73'
L4	N89°30'48"W	33.00'

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rickengineering.com
San Diego - Riverside - San Luis Obispo - Sacramento - Orange - Tucson - Phoenix - Las Vegas - Denver

LEGAL DESCRIPTION
PERRYVILLE 33' SECTION
GOODYEAR, ARIZONA

DRAWING:	PERRYVILLE–33'–SECTION.DWG				
JOB#	4684	SCALE:	NTS	SHT:	1 OF 1
DRAFTER:	TW	CHK:	MB	DATE:	10/09/24

South Perryville Road Annexation, adjacent to La Privada Parcel 5
East of S. Perryville Road
North of W. Yuma Road



It's a Great time to be in Goodyear.

Annexation for S. Perryville Road adjacent to La Privada Parcel 5



S. Perryville Road Annexation

Annexation Property

Approx. .978 acres



Annexation Process

S. Perryville Road

- Tonight – Council authorization
- Next Step if authorized – first public hearing

Annexation Recommendation

S. Perryville Road

- Authorize annexation of approx. .978 acres of property generally located along South Perryville Road, adjacent to La Privada Parcel 5.