



**AMENDMENT NO. 1 TO
CONSULTANT SERVICES AGREEMENT**

**Water System Upgrades Program
Project No. PW3-925-4631**

Council Date: February 22, 2024

THIS AMENDMENT NO. ONE ("Amendment No. 1") to the professional services agreement dated October 24, 2023 (the "Agreement") is made by and between the City of Chandler, an Arizona municipal corporation, ("City") and **Hazen and Sawyer, P.C., a New York professional corporation** ("Consultant"), on this ____ day of _____, 2024 ("Effective Date" by Clerk). (City and Consultant may individually be referred to as "Party" and collectively referred to as "Parties").

RECITALS

- A. The Parties entered into the Agreement for: **Consultant Services** ("Services") for the **Water System Upgrades Program** project.
- B. The Parties have determined that it is necessary and desirable for the Consultant to perform additional services for the City under the terms and conditions set forth in this Amendment No. 1 and the Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the premises and mutual promises contained in the Agreement and this Amendment No. 1, the Parties agree to amend and modify the Agreement as follows.

SECTION I - CONSULTANT'S SERVICES

The Consultant's Services are modified as described in the Exhibit "A" attached to and made part of this amendment by reference.

SECTION II – PERIOD OF SERVICE

The Period of Service is increased by 120 calendar days for a revised total of 360 calendar days.

SECTION III – PAYMENT OF COMPENSATION AND FEES

The Fees are increased by \$149,680 and will be payable in accordance with Exhibit "B" attached to and made part of this amendment by reference, for a revised total not to exceed \$845,400.

SECTION IV – CONFLICT AMONG DOCUMENTS

The Agreement, this amendment, and any previous amendments constitute the complete agreement between the Parties concerning the subject matter of the Agreement and replace any prior oral or written communications between the Parties. If a conflict or ambiguity arises between the Agreement and this amendment, the instrument in the following order prevails and controls: (1) this amendment; (2) any previous Amendments from most recent to oldest; and (3) the Agreement.

SIGNATURE PAGE TO FOLLOW

IN WITNESS WHEREOF, the Parties hereto have caused this Amendment No. 1 to be duly executed. Each Party warrants and represents that its respective signatories whose signatures appear below have been and are on the date of signature duly authorized to execute this Amendment No. 1.

"CITY" CITY OF CHANDLER

"CONSULTANT"

Hazen and Sawyer, P.C.

MAYOR

Curtis Courter

January 26, 2024

Signature

Date

RECOMMENDED BY:

Curtis Courter

Print Name

Associate Vice President

Jeremy Abbott
Public Works and Utilities Assistant
Director

Title

ccourter@hazenandsawyer.com

Signer Email Address

APPROVED AS TO FORM:

City Attorney

JWB

ATTEST:

City Clerk

Seal

Amendment No. 1 (cont.)
Project No. PW3-925-4631

These changes result in the following adjustments of Agreement amount and/or time:

Amendment authorized by Owner name: Danny Sargent		Date: 1/25/2024
Consultant email: ccourter@hazenandsawyer.com		
Original Agreement amount:	\$695,720	
Previous Amendment(s) total:	\$0	
Last Agreement amount approved by Council:	\$0	
This Amendment:	\$149,680	
This Amendment + previous Amendment(s) not approved by Council total:	\$149,680	
Revised Agreement total:	\$845,400	
Council Approval Required (yes indicates approval required)	Yes	No
Amendment(s) total over \$100,000:	☒	☐
Amendment(s) total causes Agreement to exceed \$100,000:	☒	☐
Agreement Time		
Agreement time prior to this Amendment (including previous amendments):	<u>240</u> Calendar Days	
Net change resulting from this Amendment:	<u>120</u> Calendar Days	
Revised Agreement time (including this Amendment):	<u>360</u> Calendar Days	
Council Approval (if applicable)		
Council Approval Date: <u>10/19/2023</u> Item No. <u>47</u>		

cc: Project Manager, Consultant, Owner, File

EXHIBIT A

SCOPE OF WORK

Introduction

During the execution of Task 3.4 of the Water System Program, which involved identifying opportunities to enhance the maximum process and hydraulic throughput of the Pecos Surface Water Treatment Plant (SWTP), several additional tasks are needed to improve water quality in 2024. These tasks are outlined in the subsequent sections.

Task 1 – High Rate Filtration Testing

Filtration rates up to 8.5 gallons per minute per square foot (gpm/sf) were determined to be hydraulically feasible through the existing filters at Pecos SWTP. Currently, the filters are designed and approved for a filtration rate of 5.0 gpm/sf. This task includes testing existing filters at increased filter loading rates to determine if the existing filters can be rated to utilize higher filtration rates for long-term planning to meet capacity needs. Two (2) filters, taken from Filters 1 through 4 will be selected for the test. These filters will operate at filtration rates greater than 5.0 gpm/sf for the duration of the test to allow for performance comparisons to the other filters operating in parallel operating at filtration rates necessary to meet production capacity needs.

- **Task 1.1 - MCESD Permitting**

In this task, Consultant will coordinate with Maricopa County Environmental Services Department (MCESD) for approval to conduct a full scale demonstration test.

Consultant will develop draft and final test plan for City and MCESD approval. One additional meeting is assumed for final approval of the test plan. After conclusion of full-scale testing, two meetings are allowed to discuss results with MCESD and request full-scale approval for increased filter loading rates.

- **Task 1.2 - Control System Modifications**

Consultant will develop a draft and final process control narrative (PCN) to document the control requirements to operate 2 filters at different flowrates, meeting target filtration rates, as compared to the remaining online filters needed to meet production needs. Two PCN workshops (Draft and Final) will be conducted with City's Control System Integrator. Consultant to attend in-person Factory Acceptance Test (FAT). Consultant to attend in-person Site Acceptance Test (SAT).

- **Task 1.3 - On Site Support**

Consultant to be present on site for first 3 days of full scale operations of new control philosophy. Consultant to hold daily check-ins with operations staff for the next 10 days of operation after, including weekends, to discuss operational results for each 24 hour time block.

- **Task 1.4 - Data Analysis and Reporting**

Consultant to analyze two months of operational data and present results to City.

Consultant will develop a draft and final report of findings to support the request of full-scale implementation of increased filtration rates for MCESD.

The official application for plant capacity rerating is not encompassed within this scope, primarily due to the uncertainty surrounding the level of effort required for rerating. The Consultant will collaborate with MCESD to determine the necessary efforts and work with the City to allocate Allowance funds, if required, for the rerate effort.

Task 2 - Other Process Testing

Hydraulic analysis conducted by Consultant indicates that hydraulic and/or process bottlenecks may occur as the Pecos SWTP operates at flowrates approaching 60 mgd or above. To clearly define these limitations, temporary testing of individual treatment units will aid in identifying these limitations and offer insights on methods of alleviating these performance issues.

- **Task 2.1 - Test Plan**

Consultant to write draft and final test plan to observe the following systems:

- Presedimentation - Process performance issues with solids carry over when a single train is operated at greater than 30 mgd.
- Ballasted Flocculation - Hydraulic bottlenecks when filters are at normal operating levels and total process flow exceeds 30 mgd through two trains.
- Conventional Sedimentation - Waves observed when Trains 1 and 3 are operated at greater than 10 mgd each. Operations staff has not indicated that Train 2 experiences waves and is excluded from this analysis.

- **Task 2.2 - On-Site Observation and Analysis**

- Consultant to observe each of the above systems on-site during operations.
- Consultant to report results in a presentation to City.

Task 3 - Near Term Control System Improvements

Multiple additional process control concerns have been identified in recent years. To improve operations during the summer of 2024 and to inform the long-term implementation of the SCADA system improvements currently underway (by others), control system modifications are recommended.

- **Task 3.1 - Control System Modifications**

Consultant will develop draft and final PCNs to document the following systems. The intent is to address these issues prior to Task 1.

- Backwash Equalizing Basin (BWEQ) Recycle System - Improve ability to accept flows into the storage basins and recycle water at a constant rate back to the head of the facility over the course of the 24 hour operational day. Draft PCN by others will be used as basis to begin work on this system.
- Filter Flow Control/Level Trim - Improve flow balance between Filters 1-8 and Filters 9-12, which currently differ greater than 5% much of the time.
- Raw Water Pump Station (RWPS) 2 Flow Control/Level Trim - Develop the ability of this pump station to operate completely independent of RWPS 1, allowing operations to operate Ballasted Flocculation without Conventional Sedimentation being online.
- Two (2) PCN workshops (Draft and Final) will be conducted with City's Control System Integrator. Consultant to attend in-person Factory Acceptance Test (FAT). Consultant to attend in-person Site Acceptance Test (SAT).

- **Task 3.2 - On Site Support**
 - Consultant to be present on site for first 3 days of full scale operations of new control philosophies. Consultant to hold daily check-ins with operations staff for the next 10 days of operation after, including weekends, to discuss operational results for each 24 hour time block.
- **Task 3.3 - Data Analysis and Reporting**
 - Consultant to analyze two months of operational data and present results to City. This analysis can be used to determine the best implementation methodology for the new SCADA system to be implemented at a later date. Results will be documented in a Technical Memorandum.

Assumptions

- It is expected that the test, once begun, will last a minimum of two (2) months to collect data. Longer testing may be required by MCESD or may be preferred by City staff if performance results are positive.
- Control System Integration will be performed by the City. Work to be conducted in existing Foxboro control system.
- Operational data, in 5 minute timesteps, to be exported in tabular format by City and provided to Consultant.
- Project Management activities, which are about 10% of the effort, will be covered under Water System Program, Task 100.

Schedule

The anticipated schedule is shown below.

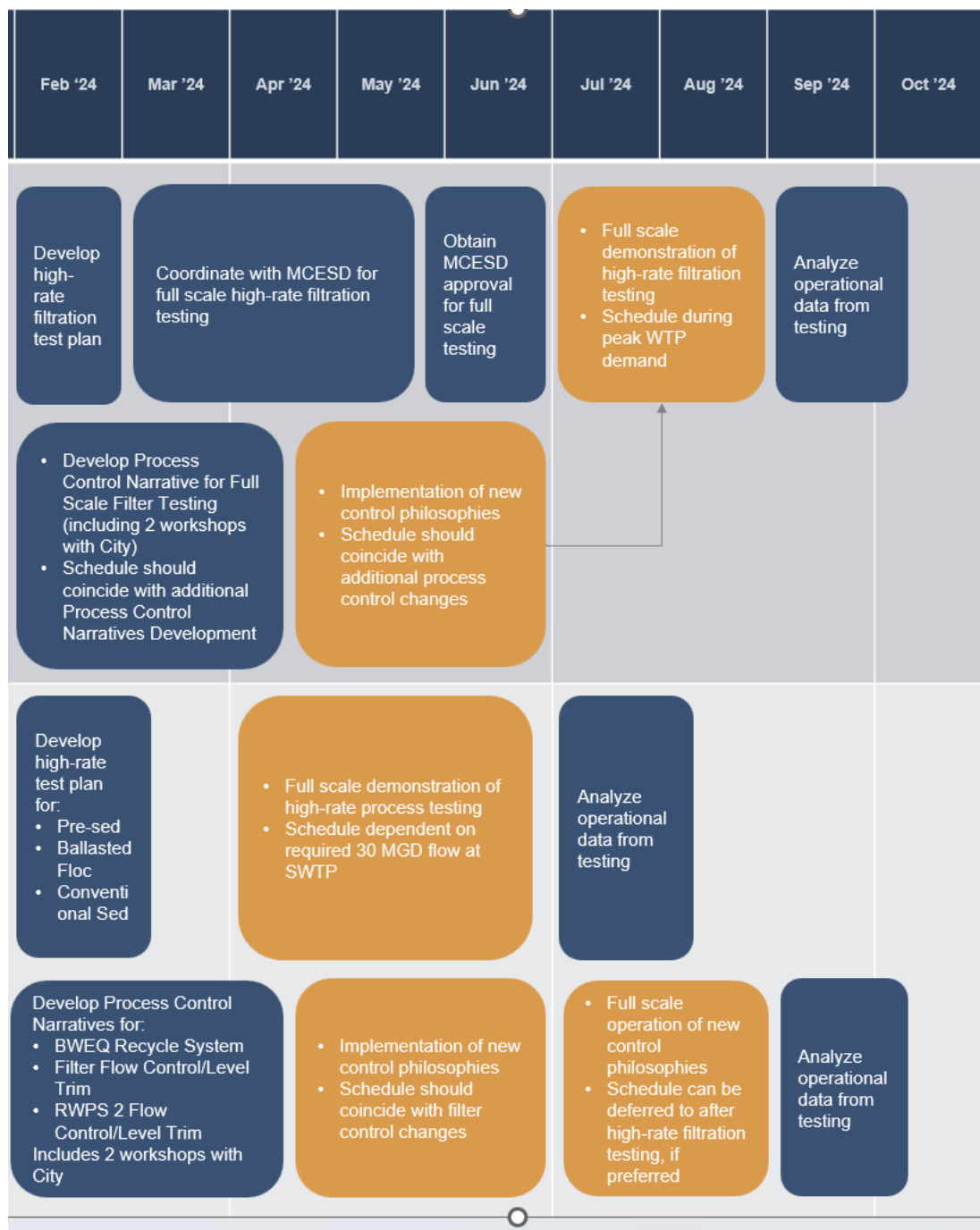


EXHIBIT B FEE SCHEDULE

The Lump sum fee for this effort is \$149,680, not including Owner's Allowance. Fee breakdown is shown below.

Client	City of Chandler										
Project	Pecos SWTP Filter Testing and Controls Improvements										
Date	1/13/2024										
		Name	Curtis Courter	Brinda D	Daniel a Panfil	Jason Curl	Katie Robles	Jacob Mitten	TASK SUBTOTAL	TOTAL FEE	TASK % OF TOTAL FEE
		Classification	Project Director	PM	Asst. PM	Technical Lead	Senior Project	Project Engineer			
			AVP	SA	SPE	SA	PE	AE			
		Hourly Rate	\$ 265	\$ 250	\$ 200	\$ 265	\$ 190	\$ 150			
Task	Description								(HOURS)		
			LEVEL OF EFFORT (HOURS)								
100	High Rate Filtration Testing								392	\$ 75,740.00	51%
1.1	MCESD Permitting					12	24	24	60	\$ 11,340.00	8%
1.2	Control System					24	32	32	88	\$ 17,240.00	12%
1.3	On-Site Support					40	40	40	120	\$ 24,200.00	16%
1.4	Data Analysis and Reporting					24	40	60	124	\$ 22,960.00	15%
200	Process High Rate Testing								112	\$ 21,140.00	14%
2.1	Test Plan					12	12	24	48	\$ 9,060.00	6%
2.2	On-Site Support					16	16	32	64	\$ 12,080.00	8%
300	Control System Improvements								224	\$ 43,800.00	29%
3.1	Control System					24	16	24	64	\$ 13,000.00	9%
3.2	On-Site Support					40	16	40	96	\$ 19,640.00	13%
3.3	Data Analysis and Reporting					8	16	40	64	\$ 11,160.00	7%
400	Other Direct Costs									\$ 9,000.00	6%
4.1	Travel and other reimbursable expenses									\$ 9,000.00	6%
500	Owner's Allowance										0%
	TOTAL FEE									\$ 149,680	