

**CITY OF CAMAS**  
**WATER SYSTEM PFAS EVALUATION AND WELL 13 PFAS TREATMENT DESIGN**  
**AMENDMENT 2: CONSTRUCTION SERVICES - SCOPE OF WORK**

**BACKGROUND**

Like many Washington communities on the Lower Columbia River, the City of Camas (City) is proactively developing a strategy to discuss and address the public health concerns associated with per and polyfluoroalkyl substances (PFAS) in its drinking water. PFAS has been detected in groundwater at the City's Lower Washougal Wellfield (LWWF) and threatens both the quality and quantity of its primary supply source. The need for response is urgent; PFAS levels from LWWF Well 13 exceeds Washington State Action Levels (SAL), and other LWWF wells have yielded results that exceed the United States Environmental Protection Agency's (USEPA) maximum contaminant levels (MCL).

Carollo Engineers, Inc (Consultant) has completed the detailed design for PFAS treatment facilities for Well 13. The design includes a replacement of the electrical service to the site, the Well 13 pump and associated yard piping, installation of new PFAS treatment system (and associated ancillary facilities), replacing and relocating the existing backup generator and expanding the existing Well 13 Building with a new Electrical Room. This plan optimizes both near-term, and long-term use of the Well 13 site, by accommodating future expansion to both wellfield capacity and PFAS treatment in the future, providing the City the ultimate flexibility in future water supply.

This Amendment addresses services during construction for this work, and shall become part of the Contract; all previous provisions of the contract apply.

## **ABBREVIATIONS**

|       |                                                       |
|-------|-------------------------------------------------------|
| ATS   | automatic transfer switch                             |
| BODR  | Basis of Design Report                                |
| CAMP® | Concentrated Accelerated Motivational Problem-Solving |
| City  | City of Camas                                         |
| CMP   | Construction Management Plan                          |
| CO    | Change Order                                          |
| COR   | Change Order Request                                  |
| CPU   | Clark County Public Utilities                         |
| DCN   | Design Change Notice                                  |
| DOH   | Department of Health (Washington)                     |
| EOM   | electronic operations and maintenance                 |
| EOR   | engineer of record                                    |
| FTE   | full time equivalent                                  |
| GWUI  | groundwater under the influence                       |
| H&S   | Health and Safety                                     |
| HMA   | hot-mix asphalt                                       |
| IBC   | International Building Code                           |
| LWWF  | Lower Washougal Wellfield                             |
| MCL   | maximum contaminant level                             |
| NNC   | Notices of Nonconformance                             |
| O&M   | operations and maintenance                            |
| OCM   | owner's construction manager                          |
| ODC   | other direct costs                                    |
| OPCC  | opinions of probable construction cost                |
| PFAS  | per and polyfluoroalkyl substances                    |
| PFD   | process flow diagram                                  |
| PLC   | programmable logic controller                         |
| QM    | quality management                                    |
| RFI   | Requests for Information                              |
| SAL   | State Action Levels                                   |
| SOP   | standard operating procedures                         |
| SWPPP | Storm Water Pollution Protection Plan                 |
| USEPA | United States Environmental Protection Agency         |

## 1.0 SCOPE OF SERVICES

### GENERAL PROJECT ASSUMPTIONS

- Carollo Engineers, Inc. and partner Consultants are referred to as "Consultant" in this document.
- The City of Camas and its staff are referred to as "City" in this document.
- To minimize travel costs, all meetings will allow remote participation, unless otherwise stated in specific scope task descriptions.
- The total duration of the construction phase is 26 months (112 weeks).
- Draft submittals shall be provided in electronic copy (.pdf and .docx) and transmitted via email or secure file transfer. City comments and Consultant responses to draft submittals will be tracked via 'red line' markups incorporated into an electronic version of the submittal and formal 'comment/response' logs.
- Record drawings shall be provided in electronic copy (.pdf) and transmitted via email or secure file transfer.
- Meeting notes and related materials shall be transmitted electronically (.pdf and/or .docx) via email.
- The City will print and produce additional copies of all documents, as necessary, for its use.
- The City will facilitate coordination and review with local jurisdictions and state regulatory agencies.
- In providing opinions of probable construction cost (OPCC), financial analyses, economic feasibility projections, and schedules for potential projects, Consultant has no control over cost or price of labor and material; unknown or latent conditions of existing equipment or structures that may affect operation and maintenance costs; competitive bidding procedures and market conditions; time or quality of performance of third parties; quality, type, management, or direction of operating personnel; and other economic and operational factors that may materially affect the ultimate project cost or schedule. Therefore, Consultant makes no warranty that the City's actual project costs, financial aspects, economic feasibility, or schedules will not vary from Consultant's opinions, analyses, projections, or estimates.
- Consultant shall be entitled to use and rely upon all such information and services provided by the City or others in performing Consultant's services under this Agreement.
- Deliverables shall comply with Carollo's general CAD standards where applicable.
- Consultant shall be entitled to the following Other Direct Costs (ODC) for out-of-state and local travel:
  - » Out-of-town trips: hotel meals and mileage at U.S. General Services Administration (GSA) Rates,, and flight (flight for trips over 200 miles) minimum of \$200.
  - » In town trips: at current GSA rates.
- The City's Integrator, S&B, will be performing the work described in Specification Sections 40\_61\_00, 40\_61\_10, and 40\_70\_00, and Appendix A of the Bid Documents. The City's Integrator will be contracted to perform the work with the City and coordinate with the Contractor as described in the bid documents to successfully complete the required system integration.
- Consultant shall not be responsible for the means, methods, techniques, sequences, or procedures of construction selected by construction contractors or the safety precautions and programs incident to

the work of construction contractors and will not be responsible for construction contractors' failure to carry out work in accordance with the construction documents.

- The parties agree that in the City's contract with the construction contractor, Consultant shall be indemnified by the construction contractor to the fullest extent permitted by law for all claims, damages, losses and expense including attorney's fees arising out of or resulting from the construction contractor's performance of work including injury to any worker on the job site. Additionally, Consultant shall be named as additional primary insured(s) by the construction contractor's General Liability and Builders All Risk insurance policies without offset and be included in any waivers of subrogation, and all construction documents and insurance certificates shall include wording acceptable to the parties herein with reference to such provisions.

## 2.0 TASKS

To meet the objectives of this scope of services, the Consultant shall complete the tasks, as summarized in the table below and discussed in detail in the following subsections.

| Task                                                                | Title                                               |
|---------------------------------------------------------------------|-----------------------------------------------------|
| <b>Task 1200 - Additional Planning, Design and Bidding Services</b> |                                                     |
| Task 1205                                                           | Additional Final Design                             |
| Task 1207                                                           | Additional Design-related Permitting Support        |
| <b>Task 1400 - Additional Support Services</b>                      |                                                     |
| Task 1401                                                           | Additional Geotechnical Services                    |
| <b>Task 4000 - Additional Project Management Services</b>           |                                                     |
| Task 4101                                                           | Project Management During Construction              |
| Task 4102                                                           | Construction Management and Health and Safety Plans |
| Task 4103                                                           | Monthly Progress Reports and Invoices               |
| Task 4106                                                           | Progress Meetings                                   |
| Task 4107                                                           | Project Logs                                        |
| <b>Task 5000 - Optional Services/Contingency Activities</b>         |                                                     |
| Task 5100                                                           | Cost Escalation (2025 – 2028)                       |
| <b>Task 6000 - Construction Services</b>                            |                                                     |
| Task 6100                                                           | Office Services During Construction                 |
| Task 6200                                                           | Field Services During Construction                  |
| Task 6300                                                           | Materials Testing and Special Inspection Services   |
| Task 6400                                                           | Start-up and Commissioning Services                 |
| Task 6500                                                           | Operations and Maintenance Manual                   |
| Task 6600                                                           | Project Close-out                                   |

## **TASK 1200 - ADDITIONAL PLANNING, DESIGN AND BIDDING SERVICES**

The following additional design services were not included in the original scope of work, but were required for project completion.

### ***Task 1200 Activities***

#### **1205. Additional Final Design**

1. Electrical Design Modifications/Service Entrance Equipment: Electrical design modifications for the new service entrance equipment (one-lines and electrical plan layouts) from approved CAMP®/Basis of Design Report (BODR) electrical design per 60 percent design review comment required partial redesign efforts to locate all new City electrical equipment in the new Well 13 Electrical Room and eliminate outdoor activity associated with required City operations and maintenance (O&M) activities:
  - a. Eliminated new outdoor service entrance switchboard.
  - b. Designed new indoor service entrance switchboard, eliminated automatic transfer switch (ATS) and consolidated ATS functionality (utility and generator source transfers) within indoor switchboard.
  - c. Additional coordination with S&B and Siemens (switchboard manufacturer via S&B) to modify new switchboard specifications and factory design drawings. This is for efforts (additions) to Task 1205 Item 2 below as outdoor service entrance switchboard and new ATS details had been previously coordinated with S&B.
  - d. Modified electrical one-line diagram and electrical room plans. Provided one additional electrical one-line diagram. All future Well 13 electrical provisions defined in BODR maintained. Minimized impacts to other disciplines.
2. S&B Coordination: Consultant provided additional efforts not included in original/Base scope related to coordination with the City's Integrator. Required coordination efforts have allowed Well 13 to maintain consistency with existing City facilities/long term goals (network security hardening) and provided Well 13 project schedule benefits in terms of early procurement of major equipment in form of equipment specification coordination/equipment shop drawing development and review. Specific activities included:
  - a. Design coordination and design modifications:
    - i. Consultant provided S&B with new and updated existing equipment tagging for consistency.
    - ii. Assisted S&B with: control philosophy/control strategy development for new and modified systems, programmable logic controller (PLC) replacement coordination, new system interface with PLC, and construction sequencing requirements with new. Includes coordination meeting time as well as Consultant's time to review S&B design iterations for accuracy and completeness.
    - iii. Coordination for Instrumentation and Control system commissioning requirements.
    - iv. Wireless communication upgrades
    - v. Chemical flow meter additions.
  - b. Early procurement of major electrical equipment:
    - i. Review of major electrical equipment S&B factory drawings and equipment specifications required for early procurement of major electrical equipment (switchboard, variable frequency drive, PLC control panel) to support equipment procurement and mitigate schedule issues or delays associated with procurement.
  - c. General project coordination with S&B for 90 percent and 100 percent/Final/Bid Set deliverables and associated packaging. Three S&B provided specifications and Appendix A S&B drawings.

3. Security Design: Coordination with City to understand City's security standards and Well 13 design implications. Design additions associated with security equipment and field device locations to provide electrical conduits and space provisions to prepare Well 13 site for security installation as part of City's upcoming security standards implementation. Partial security systems are provided in current Well 13 design (Bid Set) including door intrusion switches and associated alarming. Future provisions include master security control panel location and spare conduits/electrical hand holes for exterior access gates. Future security cameras and electrical provisions (conduit/cabling to master security panel) to be provided by Others.
4. Electric Utility/Clark County Public Utilities (CPU) Coordination: Provided technical support in form of new service application, coordination with CPU engineering, review of CPU design, coordination meetings with CPU to discuss required construction sequencing associated with CPU work to maintain Well 13 operation during critical periods, CPU transformer procurement, coordination with CPU and telecommunication company to confirm feasibility to remove existing CPU pole on Well 13 site. These efforts provide both schedule advantage and project cost savings in terms of the City's ability to procure a new required CPU electric service transformer and to provide Contractor with detailed information related to the required CPU upgrades as part of the Bid documents.

#### **1207. Additional Design-related Permitting Support**

1. Efforts associated with designing the Ion Exchange vessels to the south of the shoreline buffer on the Well 13 Site.
  - a. Additional permitting support effort for building within the designated shoreline.
    - i. Additional meeting support during land use hearing process.
    - ii. Additional shoreline permitting efforts, including justification narratives for design.
  - b. Efforts to obtain WA Department of Health (DOH) approval for a future well at the Well 13 site, supporting new site utilization intent.
    - i. Coordination efforts to support approval of a new well construction variance request with DOH.
  - c. Development of renderings and models to support design and permitting process.
    - i. Architectural renderings were developed to support required documentation in land use applications.
    - ii. 3D modelling efforts were undertaken to better communicate design intent to stakeholders and support operations staff review of design.
  - d. Additional design efforts required for land use process.
    - i. A conceptual design of a future well and chemical building to the north of existing infrastructure on the Well 13 site was accomplished to support land use efforts and plan for future site capacity.
    - ii. Investigations on potential impacts of groundwater under the influence (GWUI) at the Well 13 site. Evaluations were conducted on the suitability of the future well's location given previous GWUI findings at abandoned Well 4. Further, evaluations were conducted to understand required infrastructure investments if Well 13 became impacted by GWUI. While this situation is not likely, understanding the required infrastructure for this scenario was important to understand and allow space on site to minimize the possibility of stranded investments at Well 13.

### ***Task 1200 Workshop Summary***

1. Workshop 1205a: Site Utilization Workshop II.
2. Workshop 1207: Additional Design-related Permitting Support.
  - a. Two meetings with DOH to coordinate approval for future siting of additional capacity at Well 13.
  - b. Coordination meeting for site utilization and program of future Phase 2 buildings.
  - c. Architectural support team attendance at two public meetings/hearings.

### ***Task 1200 Assumptions (not used, as work has been completed.)***

### ***Task 1200 City Deliverables***

1. Review of Consultant deliverables.
2. Schedule DOH review meetings.
3. Review additional permitting support documents.
4. Approval of CPU transformer procurement approach.

### ***Task 1200 Consultant Deliverables***

1. Sub-task 1205 - Revised electrical and instrumentation design documents.
2. Sub-task 1207 - Additional Design-related Permitting Support:
  - a. Phase 2 building plans.
  - b. Elevations (colored) for both Phase 1 and Phase 2.
  - c. Site Perspectives, Phase 1 and Phase 2 (view from NE and NW and two bird's eye views).
  - d. Digital Material Reference on the drawings.

## **TASK 1400 - ADDITIONAL SUPPORT SERVICES**

Efforts associated with Task 1207, above, relocated the PFAS treatment infrastructure from the north, to the south end of the property. Previous geotechnical investigations recommended additional analysis should new treatment infrastructure be located near the southern edge of the property. The purpose of Task 1400 is to provide the recommended additional geotechnical support required to complete the design and delivery of Well 13 PFAS treatment infrastructure improvements.

### ***Task 1400 Activities***

#### **1401. Additional Geotechnical Services**

1. Additional Geotechnical Explorations. Additional geotechnical explorations will be completed at the south end of the site where improvements are planned near the top of an existing slope. The additional explorations include 1 mud rotary drilled soil boring to 60 feet and infiltration testing inside a hollow stem auger drilled to a depth of about 7 feet.
2. Slope Stability, Displacement and Lateral Spread Analysis:
  - a. The slope at the south end of the site will be modeled in RocScience software SLIDE2 using the data obtained from the additional explorations. The slope will be evaluated at its existing state and from the proposed improvements under static and seismic conditions.
  - b. Potential lateral spreading and seismic slope displacements considering the proposed improvements will be evaluated. Our seismic evaluation will consider parameters based on 2,475 and 975-year return events.

3. Geotechnical Engineering Analysis and Reports:
  - a. Develop geotechnical design and setback recommendations for the proposed improvements at the south end of the property based on the results of our analyses. The results of our additional geotechnical evaluations will be incorporated into a Technical Memorandum intended to supplement our Geotechnical Engineering Report for the project.

***Task 1401 - Workshops***

1. None.

***Task 1401 - Assumptions***

1. Site soils are assumed to be “clean” and drilling cuttings and fluids will be disposed off site.
2. Infiltration testing and mud rotary drilling will be completed in 1 day.
3. Infiltration testing will be completed at a depth around 7 feet below the surface, inside a hollow stem auger in general accordance with Section 6.6 of the Clark County Stormwater Manual (November 2009).
4. High Water Elevation in our analyses will be provided by others.
5. Bathometry of Lacamas Creek will be assumed in our analyses, unless provided by others.
6. The ground surface topography of the south slope of the property will be based on publicly available data and the record drawings for the Well No. 13 project.

***Task 1401 - City Deliverables***

1. Review and comment on Draft and Final documents provided by Consultant.

***Task 1401 - Consultant Deliverables***

1. Draft and Final supplemental Technical Memorandum to the Geotechnical Engineering Report.

**TASK 4000 - ADDITIONAL PROJECT MANAGEMENT ACTIVITIES**

**4101. Project Management During Construction**

The purpose of this task is to direct all project activities, while maintaining the project within the contracted scope, schedule, and budget. This includes project administration, monthly invoicing, City and team coordination and quality assurance/quality control review necessary to successfully the project to the City's expectations.

**4102. Construction Management and Health and Safety Plans**

1. Prepare a Construction Management Plan (CMP) that describes project roles and responsibilities, lists contact information for the project team, and describes communications protocols, quality management (QM), including the scope of work, schedule and budget. The Draft CMP shall be introduced and discussed with the City's project team as part of the Construction-phase Kick-off Meeting. A revised, Final CMP shall be delivered following incorporation of City Comments. QM includes, but is not limited to the following elements:
  - a. Project Manager overview of all primary documents to verify technical consistency and compliance with the contract requirements.
  - b. Designate and assign qualified Consultant staff to develop assigned project deliverables, and manage Consultant staff for schedule, quality and budget relative to assigned deliverables.

- c. Protocol for maintaining a decision log, tracking all decisions as they occur.
  - d. Protocol for continuing to maintain a risk register identifying all potential project risks and opportunities with input from City, Contractor and other key stakeholders.
2. The Consultant shall prepare a draft and final site-specific Health and Safety (H&S) plan for acceptance by the City, covering field work to be performed by the Consultant and Subcontractor(s) staff for the construction of the Well 13 PFAS Treatment project. The Consultant shall facilitate Consultant and Subcontractor (who perform field work) compliance with these requirements. The Consultant shall comply with applicable federal, state, and local environmental, health, and safety legislation, regulations, and codes.
- a. The Consultant shall provide a draft site-specific H&S plan with the CMP. Updates for specific, planned field work shall be provided by the Consultant for the City to review and comment, to confirm compliance with overall City safety goals.
  - b. Before the start of Well 13 PFAS Treatment construction, the Consultant shall update their site-specific H&S Plan for acceptance by the City. The Consultant's H&S Plan shall be coordinated with the Contractor's H&S plan. Updates for specific, planned fieldwork shall be provided by the Consultant for the City to review and comment, to confirm compliance with overall project safety goals.

#### **4103. Monthly Progress Reports and Invoices**

1. This subtask includes assisting the project team members in the implementation of the task items, reviewing the work-in-progress reports and monthly invoices. Consultant shall prepare and submit monthly activity reports showing current project scope, budget and schedule status, identifying key issues, or elements of the project that will need to be addressed in the proceeding weeks. An electronic version of the monthly progress reports and invoices shall be sent to City for review and approval.

#### **4106. Progress Meetings**

1. Bi-weekly Project Status conference calls shall be held to review project status, including scope, budget, and schedule. Prepare an agenda and document discussions, including action items and decisions, in meeting minutes which shall serve as the following week's agenda.
2. Quarterly Project Summary Meetings to provide project status updates to the City leadership and/or key stakeholders, as required.

#### **4107. Project Logs**

Consultant shall maintain the following logs, which shall be reviewed on a bi-weekly basis with the City's Project Manager.

1. Consultant shall maintain a log of key Action Items throughout the project duration, summarizing key actions, due dates and status of all action items identified throughout the project duration.
2. Consultant shall maintain a log of key Decisions made throughout the project, focusing on key decisions that impact cost and/or operability.
3. Consultant shall maintain a log of key Design Changes to identify items that may significantly change construction costs from the previous deliverable.

**Task 4100 Workshop Summary**

1. None.

**Task 4100 Assumptions**

1. Consultant's original contract was signed April 3, 2024, and included two years of project management activities (through March 2026). Assuming Amendment 2 begins in September 2025, there are seven months of overlap. Therefore, durations for Task 4000 activities are assumed to be  $(26 - 7 = 19)$  months.
2. Bi-weekly Project Status Meetings shall either be held via conference call, or shall be scheduled to coincide with a field visit; participation limited to Consultant and City Project Managers. Total duration for each meeting is one hour, with one hour of preparation time. A total of 38 meetings are anticipated.
3. Quarterly Project Summary Meetings to provide project status updates to the City Leadership and/or key stakeholders will require participation from the Consultant Principal in Charge and Project Manager. Total duration for each meeting is one hour, with one hour of preparation time. A total of five meetings are anticipated.
4. Project Logs shall be updated on a weekly basis; the Consultant's Project Manager and Construction Manager shall dedicate one hour/week for log updates.

**Task 4100 City Deliverables**

1. Review and comment on draft and final draft documents provided by Consultant.
3. Updated team member contact information.
4. Respond to data requests in a timely manner.
5. Receive, review, and process Consultant invoices in a timely manner.
6. Render decisions and provide guidance in a timely manner.

**Task 4100 Consultant Deliverables**

1. Draft and Final Construction Management and H&S Plans.
2. Monthly progress reports and invoices.
3. Bi-weekly Project Status Meeting agendas and minutes.
4. Quarterly Project Summary Meeting agendas and minutes.
5. Preliminary project logs, with weekly status updates throughout the duration of the project.

## **TASK 5000 - OPTIONAL SERVICES/CONTINGENCY ACTIVITIES**

Items listed under Task 5000 are a combination of actual and anticipated items. For anticipated items, the following scope and associated level of effort are intended as placeholders based on the Consultants' current understanding of these efforts, for use as part of future contract amendments.

### **5100. COST ESCALATION (2025-2028)**

The original proposed billing rates are based on 2024 dollars, and do not include escalations for future years. The escalation clause included in the City's standard agreement allows increases to billing rates. To help the City plan for these future escalations, we originally included an escalation of 5 percent per year to help the City plan for the future expenditure. As part of this Amendment, we escalation contingency will remain a 'placeholder' for City planning for years 2025 and beyond.

#### **5101. 2025 Escalation of Costs**

1. To be finalized following determination of 2026 activities.

#### **5102. 2026 Escalation of Costs**

1. To be finalized following determination of 2026 activities.

#### **5103. 2027 Escalation of Costs**

1. To be finalized following determination of 2027 activities.

#### **5104. 2028 Escalation of Costs (not anticipated to be needed)**

1. To be finalized following determination of 2028 activities.

### **5300. ADDITIONAL SERVICES DURING CONSTRUCTION**

#### **5301. Electronic-Operations and Maintenance Manual**

Consultant shall provide an integrated, electronic O&M Manual (EOM) for the PFAS treatment system and ancillary facilities. Efforts include:

1. Final Storyboard Workshop. Immediately following the Pre-Construction Conference, Consultant shall conduct a final storyboarding Workshop with City staff to finalize the of EOM platform.
2. Data Collection and Organization.
  - a. Data collected and developed under Task 6501 will be digitized and made suitable for the EOM platform, which will serve as the basis of the EOM.
3. EOM System Set-up and Procurement.
  - a. Consultant shall work with the City to procure and implement the EOM option selected in the Final Storyboard Workshop. Consultant shall provide a recommended system specification that defines the preferred configuration, including a site map with navigation structure for EOM chapters and templates, for the City's review and approval. This specification will be finalized based on comments received.
  - b. Review Content and Finalize EOM. Consultant shall facilitate a meeting to review City comments on the EOM content. Final comments shall be incorporated into the final version of the EOM. After finalizing, the manual shall be submitted to DOH for review and approval if required.

4. Training:
  - a. To facilitate consistent level of detail and organization moving forward, the Consultant shall provide a reference guide for EOM content contributors and developers. The reference guide will provide basic instructions for managing the EOM, including user accounts and security as well as future content revisions (including adding, deleting and revising information based on future needs.) Three tiers of training shall also be provided to the City staff; attendance at each of these trainings will be defined by the staff's level of interface with the EOM.
    - i. General System User Training. Consultant shall provide a 2 hour training class on the general EOM use for City staff. The basic system user training will be provided to the operations staff that will access, search and find information in the system as part of their daily operations. City will provide a list of staff that will participate in the user training sessions and coordinate the schedules for efficient use of training time.
    - ii. Content Management Training. Consultant shall provide a 2 hour training class on EOM content management for City staff. The content management training will be provided for staff that will be updating and maintaining the information in the EOM moving forward. City shall provide a list of staff that will participate in the content management training sessions and coordinate the schedules for efficient use of training time. As part of the training, the EOM reference guide will provide documentation on the content administration of the EOM including use of all editing tools, web site management tools, and content development standards.
    - iii. System Administration Training. Consultant shall provide a 2 hour training class on EOM system administration for City staff. The system administration training shall be provided for staff on EOM system administration, maintenance, security and general support. The reference guide will provide documentation on the system administration of the EOM including the system configuration, administration functions and technical support resources.
5. Assumptions: This adder assumes the City will select an integrated EOM, either a SharePoint Online Subscription or a Locally Managed Web Interface. EOM related workshops shall be attended by the Consultant's Project Manager, Project Engineer and EOM lead. Each workshop shall be two hours. All three EOM training sessions shall be held in one 8 hour day. The trainings shall be facilitated by the Consultant's Project Engineer and Task Lead. The Draft EOM content will be prepared in Microsoft Word, and provided to the City in native format and as a PDF suitable for review electronically. The City will review documents electronically. Since this is an existing facility, EOM Placeholder Libraries shall be created for the following additional, City-provided content:
  - a. Existing operations documents.
  - b. Vendor O&M Manuals.
  - c. Drawings.
  - d. Lab Diagrams.
  - e. Lab SOPs.
  - f. Other Lab Documents.
6. Estimated project cost adder for Task 5301: \$150,000

## **5302. Additional Specialty Services – Water Quality observations and Testing (\$50,000)**

1. Water quality observations and testing (Confluence).
  - a. Treatment Startup Monitoring and Response Plan: This plan would help the City prepare for upcoming Task 6400 activities by working with the City operations team, on-site, to develop a plan for monitoring for PFAS impacts on other constituents of concern that impact system stability (such as pH, chlorides, and sulfates). This plan would provide operators direction on how often to monitor, what ports to monitor, include analysis of monitoring data and breakthrough estimates (or for the below constituents, estimating tailing of breakthrough if those phenomenon are occurring).
  - b. Estimated project cost adder for task 5302: \$50,000.

## **TASK 6000 - CONSTRUCTION SERVICES**

The objective of Task 6000 is to support the construction-phase activities for the installation of PFAS treatment at Well 13.

### **TASK 6100 ACTIVITIES: OFFICE SERVICES DURING CONSTRUCTION**

#### **6101. Pre-Construction Conference and Weekly Construction Progress Meetings**

1. Pre-Construction Conference: A Preconstruction Conference shall be held to review the overall project schedule, key project goals, risks/opportunities, overall constraints and drivers to ensure the entire project team has the same baseline project understanding. Agenda shall include:
  - a. A preliminary list of submittals and a draft Schedule of Values will be provided by the contractor in advance of this meeting for owner's construction manager (OCM) and engineer of record (EOR) review; resolution to any outstanding items/issues shall be determined during the workshop.
  - b. Communications protocols, critical for this highly visible project, will be established, including:
    - i. With the press and public.
    - ii. With the OCM, EOR.
    - iii. With City Inspections, Engineering, Operations and Leadership.
  - c. Operational constraints with the existing infrastructure.
  - d. Opportunities to accelerate the schedule to deliver PFAS free water to the City prior to final project completion.
  - e. Anticipated schedule.
  - f. Payment application schedule/submittal days for draft and final applications.
  - g. Other contract requirements, including funding constraints, as needed.
2. Weekly Construction Progress Meetings:
  - a. The OCM will facilitate weekly coordination meetings to maintain a collaborative and transparent working environment among the Contractor, design team/EOR, and City staff. These meetings will encourage proactive problem-solving, and ensure that all parties remain aligned with the City's goals and priorities. In addition, these meetings will support timely decision-making by clearly communicating risks, recommendations, and the potential impacts of key project issues.

**6102. Schedule of Values Review**

1. Consultant shall review the awarded Contractor's proposed Schedule of Values; provide comments/adjustments, as needed, to serve as the basis for tracking project progress, and validating payment requests approval throughout the duration of the construction project.

**6103. Document Management System**

1. Consultant shall initiate a construction documentation storage and tracking system using Autodesk Construction Cloud for this project. A training session will be held for City, designer and Contractor personnel. The system will be tailored to meet the needs of each party and will be maintained by the OCM for the duration of the project. After the project is completed, the documentation system will be maintained for the warranty period then delivered to the City on indexed, searchable USB drive.

**6104. Submittal Review**

1. Consultant shall receive and log shop drawings, material samples, and other submittals and review them for conformance to the intent of the Contract Documents. Consultant shall compile written comments and return shop drawings to City upon completion of the review process. Additionally, Consultant shall receive, log and provide written responses to all form Requests for Information (RFI) received from the Contractor. Consultant shall maintain a shop drawing submittal file/tracking system.

**6105. Request for Information**

1. Consultant shall receive, log and provide written responses to all form Requests for Information (RFI) received from the Contractor. Consultant shall maintain an RFI file/tracking system.

**6106. Change Orders Requests (COR) and Change Orders(CO)**

1. In the event changes to the Contract Documents are required, the Consultant shall assist the City in review of Change Order Requests (COR) and preparation of Change Orders (CO). Consultant shall review the CORs prepared by the Contractor, provide recommendations to the City regarding acceptance or rejection of the requests, and will review Change Order documents provided by the City for approval of the items accepted.

**6107. Design Change Notices (DCN)**

1. Consultant shall support engineer- or owner-initiated design changes. Consultant shall review or generate design change proposals and provide recommendations to the City for incorporation into the Contract. Once approved by the City, Consultant shall prepare modifications to the Contract documents.

***Task 6100 Workshop Summary***

1. Workshop 6101: Pre-Construction Conference.
2. Workshop 6107: City and Contractor-initiated Design Change Workshop(s)

***Task 6100 Assumptions***

1. Sub-task 6101 - Pre-Construction Conference and Weekly Construction Progress Meetings.
  - a. Pre-construction Conference to be attended by Consultant's Project Manager, Project Engineer and OCM.
  - b. Pre-Construction Conference shall be four hours in duration, and require eight hours of preparation time.

- c. Weekly Construction Meetings shall be attended by the OCM and one EOR. Duration for the weekly construction meetings shall be two hours.
  - d. Contractor to provide preliminary submittal log (including number and dates of submittals), and Schedule of Values prior to the Pre-Construction Conference.
  - e. Weekly Construction Progress Meetings shall be held at the Contractor's construction trailer at the project site. Duration for these meetings shall be one hour, and require two hours of preparation time each.
- 2. Sub-task 6102 - Schedule of Values Review:
  - a. Contractor to provide a draft Schedule of Values prior to the Pre-Construction Conference.
- 2. Sub-task 6103 - Document Management System.
  - a. Consultant shall use e-Builder for the Document Management System.
  - b. Hard copies of construction documentation shall not be maintained at the job site; all files shall be managed electronically.
- 3. Sub-task 6104 - Submittal Review.
  - a. Consultant shall respond to up to 135 submittals, based on an average of 0.85 submittals per specification section, plus an average of 0.85 submittals per CIV standard detail (15 total, used in lieu of specifications). In addition, it is assumed that 66 percent shall require resubmittals. Based on data from similar projects, review effort will be five hours per submittal and three hours per resubmittal.
  - b. Consultant shall return submittals within 30 calendar days of receipt. Large or complex submittals may require longer review times, and Consultant shall notify the City and Contractor within five days of submittal receipt if and how much additional time will be required.
  - c. Submittals related to temporary construction activities and/or contractor means and methods (e.g. shoring, formwork, erosion control and dewatering facilities) shall not be reviewed for content, compliance or calculations, and shall be accepted and filed for compliance with submittal requirements only.
  - d. Geotechnical submittal reviews shall be limited to materials testing requirements, as outlined in Task 6300.
  - e. Level of effort to review requests for substitutions are difficult to anticipate, and are therefore estimated to be 60 hours for up to 3 such requests. Consultant costs for substitution review efforts in excess of this value is out of scope.
- 4. Sub-task 6105 - Request for Information (RFI).
  - a. Consultant will respond to up to 62 RFIs, based on half an RFI per drawing. Consultant's average review effort will be four hours per RFI.
  - b. Consultant shall return RFIs within 10 calendar days of receipt. Large or complex RFIs may require longer review times, and Consultant shall notify contractor within two days of RFI receipt and estimate how much additional time will be required.
- 5. Sub-task 6106 - Change Order Requests (COR) and Change Orders (CO).
  - a. The budget is based on an estimate of 12 CORs/COs at 8 hours each.
- 6. Sub-task 6107 - Design Change Notices (DCN).
  - a. The budget assumes 10 Design Changes will be generated, requiring an average of 12 hours each.

**Task 6100 City Deliverables**

1. Attendance at Pre-Construction Conference.
2. City-preferred communication protocol to be followed throughout the construction period.
3. Review and approval of Consultant responses to Submittals and RFIs, as needed.
4. Development of City-initiated design change requests.
5. Review/approval of CORs and recommended COs and DCNs.

**Task 6100 Consultant Deliverables**

1. Sub-task 6101 - Pre-Construction Conference and Weekly Construction Progress Meetings.
  - a. Comments to the Contractor's draft Submittal Schedule.
  - b. Communications protocols.
  - c. Draft and Final Meeting Agendas and Minutes.
  - d. Updated Project Logs.
3. Sub-task 6102 - Schedule of Values Review.
  - a. Comments to the Contractor's draft Schedule of Values.
2. Sub-task 6103 - Document Management System.
  - a. Draft and Final System Architecture
  - b. Logs for all related contract documentation.
  - c. Read-access to the System for City use.
3. Sub-task 6104 - Submittal Review.
  - a. Submittal comment sheets.
4. Sub-task 6105 - Request for Information (RFI).
  - a. RFI responses.
5. Sub-task 6106 - Change Order Requests (COR) and Change Orders (CO).
  - a. Review comments and EOR recommendations to proposed CORs; formal documentation filed within the document management system.
  - b. Final CO documentation and recommendations.
6. Sub-task 6107 - Design Change Notices (DCN).
  - a. Recommendations for incorporation of design changes.
  - b. DCN documents.

**TASK 6200 ACTIVITIES: FIELD SERVICES DURING CONSTRUCTION****6201. Owner's Construction Manager and Administration**

The OCM will be provided by Consultant and will support the City during the construction phase to ensure the facility is delivered in alignment with the design intent, with appropriate levels of quality, and within the established schedule and budget. Acting as the City's representative, the OCM will oversee the performance of the Contractor, the Engineer of Record, and special inspection services to protect the City's interests throughout construction and closeout.

1. Communication of Construction Management Plan: The project-specific Construction Management Plan, created as part of Task 4000 activities, shall be created for the project to establish project

communication protocols and Construction Management procedures. The OCM shall update this plan, as needed, to accommodate on-site construction activities.

2. Documentation of Existing Site Conditions: Consultant shall prepare video and photographic records of initial site conditions before the contractor begins construction. Video documentation will be accompanied by a verbal description of existing conditions. A copy of the video and photographic documentation will be provided to the City.
3. Monthly Project Reports: Consultant shall prepare a monthly report for the City, detailing the construction progress along with photographs of the work. The report will contain a description of work performed, upcoming milestones, a log of expenditures to date and forecast of upcoming payments, a log of change orders executed and potential changes, and upcoming work to be completed in the following month.
4. Construction Inspection: Consultant shall provide a qualified inspector to monitor the contractor's compliance with the specification requirements. Consultant shall inspect and ensure conformance with the specifications on the placement and installation of structures and equipment. Installations will be monitored for compliance with all applicable codes and the contract documents.
5. Manage Material Testing: A materials testing laboratory will be hired by the Consultant to take independent quality assurance samples throughout construction; results will be shared with and coordinated by the Consultant. Costs associated with coordinating materials testing services is included in the Consultant's scope. Testing results will be monitored for compliance with the contract documents. Discrepancies will be noted and the contractor will be directed to make necessary corrections.
6. Manage Field Inspection Personnel: The OCM shall manage the activities of the EOR and City field inspection personnel, including the materials testing consultant. OCM shall work with Consultant's inspectors to prepare daily inspection reports, and summary monthly inspection reports to the City.
7. Monitor Contractor's Compliance with Contract Documents: OCM shall review and monitor the contractor's work against the contract documents to ensure compliance. OCM shall report any non-conformances and deficiencies to the City and contractor and will work with the contractor to correct these deficiencies in a timely manner to the satisfaction of the City.
8. Track Submittals: OCM shall coordinate and manage the shop drawing and submittal review process between the EOR and the contractor. All submittals will be handled using the project document management system. OCM shall screen all submittals and determine their completeness before reviewing them or forwarding them to the design engineer for review.
9. Notices of Nonconformance (NNC): The OCM will issue NNCs to the contractor notifying and documenting work with significant deficiencies and requiring repair or re-work to conform to the requirements of the plans and specifications.
10. Track Requests for Information: OCM shall coordinate and manage the Request for Information (RFI) process between the design engineer and the contractor. All RFIs will be handled using the project document system. OCM will screen all RFIs and determine their validity before responding to them or forwarding them to the EOR for response.
11. Review Monthly Progress Payment Applications: OCM shall evaluate the contractor's monthly progress payment applications and recommend payment by the City if requirements are met.

Consultant shall compare requested quantities to the actual quantities completed and negotiate the appropriate progress payment application with the contractor.

12. Review Construction Schedule: OCM shall review and approve the contractor's construction schedule, including updates and revisions, in accordance with the contract documents. OCM's review will focus on key elements such as logic, duration of activities, duration of startup and testing, and construction sequencing constraints and milestones.
13. Review Change Order Requests: OCM shall review CO requests in conjunction with the EOR to determine changes in scope and conditions. Consultant shall prepare independent cost estimates and negotiate with the contractor, as needed. OCM shall prepare and process approved change orders and incorporate them into the contract. OCM shall prepare a log for tracking all potential change orders and agreed upon change orders.
14. Review Labor Compliance: OCM shall monitor project records and review labor compliance of the contractor. OCM shall work with the contractor to correct any deficiencies found and report status to the City.
15. Review installation and maintenance of Best Management Practices and Implementation of the Storm Water Pollution Protection Plan (SWPPP): OCM shall monitor the SWPPP proposed and installed by the contractor and work with them to maintain and monitor its effectiveness in accordance with the current state regulations.
16. Monitor and Review Record Drawings: OCM shall monitor and coordinate the contractor's recording and maintenance of field changes to plans and specifications during construction on a monthly basis, or as required. At the 50-, 75-, and 90-percent project completion levels, consultant shall perform a review of the contractor's working record drawings for general completeness and advise the City of status.

## **6202. Engineer of Record (EOR) Observation and Inspection**

Consultant shall provide engineering observation and inspection services during construction to assess the progress and quality of the work, and determine if the work is proceeding in accordance with the Contract Documents. Services shall include the following:

1. Structural observations and inspections, as required by the building code.
2. EOR on-site observation, as needed, of construction progress for general conformance with the design intent, and to help identify and mitigate impacts of the construction activities on the operations of Well 13.

## **6203. Specialty Services**

Additional specialty services include:

1. Geotechnical observations and testing (Delve).
  - a. Geotechnical EOR shall spend 4 days on-site for additional coordination.
2. Civil observations and testing (MacKay Sposito).
  - a. Civil EOR shall spend 4 days on-site for additional coordination.
3. Hydrogeological observations and testing (Mott MacDonald).
  - a. None.

4. Archeological observations and witnessing (Archaeological Services).
  - a. None.
5. Architectural observations and testing (MWA).
  - a. Architect of Record shall spend 4 days on-site for additional coordination.

***Task 6200 Workshop Summary***

1. None.

***Task 6200 Assumptions***

1. Sub-task 6201 - Construction Management and Administration.
  - a. OCM observation of work performed under this contract shall not relieve the Contractor from responsibility for performing work in accordance with the Contract Documents.
  - b. OCM services shall be performed in accordance with industry-recognized standard practices.
  - c. Costs for this service assume one on-site part-time (0.4 full time equivalent [FTE]) throughout the construction duration. NOTE: Given the nature and importance of this project, additional OCM presence may be required above/beyond the 0.4 FTE assumed. This work, if requested, would be out of scope, and funded through a future contract amendment.
  - c. A per diem has been included, to cover OCM expenses for lodging, vehicle and travel. OCM will be reimbursed at a rate of \$691.75/week in addition to mileage billed at the GSA rate. The budget assumes a per diem rate for 10 days/month for each month of construction activities.
  - d. When full-time observation is not required by the Contractor activities, OCM may assist with other activities such as shop drawing reviews, responses to RFIs and review of CORs, when these activities are within their capabilities and expertise.
  - e. The draft and final payment application will be submitted by Contractor on a monthly basis, on the days agreed upon during the Pre-Construction Conference. One payment application is assumed to occur for each month of construction.
  - f. OCM will collect certified payroll information from the Contractor and conduct payroll interviews. Certified payroll will be uploaded into the document management system.
  - g. Contractor will submit monthly schedule updates with payment applications; one schedule review will occur for each month of construction.
  - h. OCM shall generate NCCs from responses to RFIs, design changes, Contractor-initiated changes, City-initiated changes, or observed deficiencies in the field.
2. Sub-task 6202 – Engineer of Record (EOR) Observations and Inspections.
  - a. EOR observation of work performed under this contract shall not relieve the Contractor from responsibility for performing work in accordance with the Contract Documents.
  - b. EOR mileage assumed is 55 miles per trip and will be billed at the GSA rate.
  - c. Site visits shall be performed by individuals with experience inspecting the actual construction activities and may change over the lifecycle of the construction activities.
  - d. The budget is based on the Consultant's EOR being present on-site 1 day every other week. Task 6202 activities shall be limited to one day every other week over the entire construction period.
  - e. Additional EOR inspectors shall be made available upon City request.
  - f. EOR shall coordinate on-site inspections to align with and help facilitate in-person participation in weekly construction meetings.

- g. EOR observation and inspection services are supplemental to on-site quality and specialty inspection.
  - h. Urgent information or recommendations will be provided to the OCM before the EOR leaves the site on the day of observation or inspection.
3. Sub-task 6203 - Specialty Services.
    - a. Assume Contractor is responsible for hiring Archeological observation services, per the Contract Documents.
    - b. The budget is based on four additional site visits at 8 hours each, for the Geotechnical EOR, Civil EOR and Architect of Record.

***Task 6200 City Deliverables***

1. Comments on draft report or acceptance of reports, as submitted.

***Task 6200 Consultant Deliverables***

1. Sub-task 6201 – Construction Management and Administration.
  - a. Construction Management Plan Updates, as required.
  - b. Video and verbal documentation of existing site conditions.
  - c. Draft and final monthly progress reports.
  - d. Construction inspection logs, as required.
  - e. Notices of Contractor non-compliance.
  - f. Construction documentation logs (Submittal, RFIs, CORs, COs, DCNs, etc.).
  - g. Payment Application and Construction Schedule review comments and recommendations.
  - h. COR comments and recommendations.
  - i. Final punch-list.
  - j. Periodic record drawing review comments.
2. Sub-task 6202 - Engineer of Record (EOR) Observations and Inspections.
  - a. EOR on-site observation summary.
3. Sub-task 6203 - Specialty Services.
  - a. Draft and Final Treatment Startup Monitoring and Response Plan.

**TASK 6300 ACTIVITIES: MATERIALS TESTING AND SPECIAL INSPECTION SERVICES**

**6301. Consultant Controlled Testing and Inspection Services**

Provide special inspection and testing services required by the International Building Code (IBC), project structural notes, and City Building Department for designated structural components of construction. Services will be completed in accordance with ASTM International test methods and applicable sections contained in the American Concrete Institute Manual of Concrete Practice, and American Welding Society Structural Welding Code.

1. Specific activities conducted by the Consultant shall include the following:
  - a. *Earthwork*: Includes periodic observation during soil improvement, site preparation, in-place density testing of structural fill placed a building floor slab, foundation grade, hot-mix asphalt (HMA) pavements, and within utility trenches.

- b. *Reinforced Concrete*: Includes mix design review; periodic reinforcing steel placement inspection; field testing for slump, unit weight, entrained air and temperature; preparing concrete test cylinders; and inspection during site-cast structural concrete placement for foundations, floor slabs, columns, and walls.
- c. *Structural Steel Framing/Anchorages/High-Strength Bolts*: Review and inspect structural steel materials; high-strength bolts; anchor bolts and threaded rods; weld filler material; welding procedures and welder qualifications; framing requirements; reviewing high-strength bolting materials and procedures; and periodic inspection of field-welded structural steel connectors.
- d. *Sample Retrieval and Laboratory Testing*: Collect and transport samples of on-site and imported soil that will be used as structural fill, concrete samples obtained from the project site to laboratories in Portland, Oregon or Vancouver, Washington. Laboratory services will include compaction tests and gradation analyses of structural fill and curing and unconfined compression testing of concrete samples. HMA samples will be analyzed for theoretical Rice density, oil content, and gradation of extracted aggregate.
- e. *Daily Field Reports*: At the completion of each site visit, Consultant's field personnel will prepare a preliminary field report to document field test results, observations, and discussions applicable to the project.
- f. *Final Report*: At the conclusion of testing services, provide a stamped and signed final letter report as required by IBC Chapter 17 to summarize observations and test results, and opinions regarding applicable Contractor's general compliance with the project plans and specifications.

#### ***Task 6300 Workshop Summary***

- 1. None

#### ***Task 6300 Assumptions***

- 1. Subconsultant will perform testing in accordance with construction contract documents and other recognized/applicable standards.
- 2. The consultant has included a subconsultant fee of \$25,000.00 for materials testing and special inspections; however, actual cost will be based on actual time and materials required to conduct materials testing and special inspections.
- 3. Subconsultant will have a lab within 25 miles of the City of Camas Well 13.

#### ***Task 6300 City Deliverables***

- 1. None.

#### ***Task 6300 Consultant Deliverables***

- 1. Summaries of daily reports, materials testing information and special inspections.
- 2. Final report in accordance with IBC Chapter 17.

### **TASK 6400 ACTIVITIES: STARTUP AND COMMISSIONING SERVICES**

#### **6401. Training**

- 1. Consultant shall monitor all required equipment Manufacture's Field Services and training of City operations personnel, as required in the Contract Documents and coordinated by the Contractor.
- 2. Review and provide comments for Contractor-provided equipment training agendas and training material outlines as required by the Contractor in the Contract Documents.

3. Coordinate vendor/manufacture training schedule with Contractor and City Operations, Maintenance and Engineering staff.
4. Monitor vendor training on behalf of the City.

#### **6402. Startup and Commissioning Services**

1. Consultant shall provide startup services as follows:
  - a. Prepare initial testing, startup, and commissioning sequences for each element of the Project. Note that these initial sequences will be refined by the contractor to coordinate with their selected means and methods.
  - b. Preparation of initial startup, testing and commissioning plan that includes a plan on how to flush water through the system, a disinfection plan for treatment processes that require disinfection prior to being put in service, and a disposal plan for the water used during testing and start up. Note that these initial plans will be refined by the contractor to coordinate with their selected means and methods.
  - c. Collaborate with the Contractor to refine the testing, startup and commissioning plan for the following pieces of equipment:
    - i. Well 13 Replacement Pump and Ancillary Facilities.
    - ii. Pre-treatment Facilities.
    - iii. PFAS Treatment.
    - iv. Modified Chemical Handling and Feed Facilities.
  - d. Provide startup and Commissioning assistance for the above-mentioned pieces of equipment.

#### ***Task 6400 Workshop Summary***

1. Workshop 6401 a-e: Equipment and Vendor Training(s).
2. Workshop 6402 a-d: Startup and Commissioning Services.
  - a. Up to two startup, testing and commissioning planning workshops during early construction activities.
  - b. Up to two workshops with the Contractor prior to initiation of testing and startup.

#### ***Task 6400 Assumptions***

1. The budget assumes eight hours of EOR review is required for the monitoring of Manufacture's Field Services for each of four process areas, for a total of 32 hours of review time.
2. The budget assumes eight hours, for each of four training areas, or a total of 32 hours for the EOR to review the training materials and monitor the vendor trainings.
3. Contractor shall refine and finalize the Consultant's initial startup and commissioning plans, using Consultant derived sequences as articulated in the Contract Documents.
4. Review of the startup and commissioning plans assumes 4 hours per plan, for each of four process areas, or a total of 16 hours the EOR.
5. The budget assumes four hours, for each of four startup and commissioning workshops (two for planning, two prior to initiation), for a total of 16 hours of workshop attendance for the EOR.
6. Startup and commissioning assistance assumes 4 days at 8 hours each for each of four areas, for a total of 128 hours; an additional 64 hours are assumed for process subject matter expert assistance as needed.

7. City operations staff will participate in workshops.
8. Sampling and analysis of any raw, intermediate or finished water constituents, as required, for Contract or regulatory compliance to be provided by others.

#### ***Task 6400 City Deliverables***

1. Summary of operations constraints.
2. Review of draft materials.
3. Observation and acceptance of all SCADA system commissioning activities.

#### ***Task 6400 Consultant Deliverables***

1. Revisions to startup, testing and commissioning plan included in Contract Documents, as needed, to accommodate the City's operational constraints.
2. Feedback to Contractor(s) on their proposed or ongoing testing, startup and commissioning activities.

### **TASK 6500 ACTIVITIES: OPERATIONS AND MAINTENANCE MANUAL**

#### **6501. Operations and Maintenance Manual**

Consultant shall provide an O&M Manual for the PFAS treatment system and ancillary facilities. This manual shall build upon previous Task 1208 - Early Operations and Maintenance Manual Efforts activities. The following scope of work outlines the recommended strategy for developing this O&M Manual .

7. Data Collection and Organization.
  - a. Review and Confirmation of Existing Information. Consultant shall review all existing plant documentation, and provide a draft plant process flow diagram (PFD) based on their current understanding of the Well 13 facilities. City will review and provide corrections, as needed. The final PFD will serve as the basis of the EOM. Based on the final PFD, Consultant shall create process-specific PFDs, including:
    - i. Well 13 Replacement Pump and Ancillary Facilities.
    - ii. Pre-treatment Facilities.
    - iii. PFAS Treatment.
    - iv. Modified Chemical Handling and Feed Facilities.
  - b. Collection of Detailed Operations Information and Content Development. Consultant shall visit the WTP and step through each operation, utilizing the process-specific PFDs. Operators shall be interviewed to capture 'institutional knowledge' when developing and finalizing existing process descriptions. Information for each section, including standard operating procedures (SOP) shall be developed. This information shall be formatted according to the preferred template. SOPs shall be developed for each of the process-specific PFDs listed above.
  - c. Review Content and Finalize the O&M manual. Consultant shall facilitate a meeting to review City comments on the O&M content. Final comments shall be incorporated into the final version of the O&M manual. After finalizing, the manual shall be submitted to DOH for review and approval.

#### ***Task 6500 Assumptions***

1. This scope assumes the City will not select an integrated EOM. Refer to Task 5301 for more information.

2. Draft EOM content will be prepared in Microsoft Word, and provided to the City in native format and as a PDF suitable for review electronically.
3. The City will review documents electronically.
4. The final O&M will serve as an appendix to the City's existing O&M manual for Well 13.
5. No Hazardous Materials Management Plan is required.

***Task 6500 City Deliverables***

1. Existing O&M manual(s) for Well 13.
2. Equipment O&M Manuals.
3. Draft O&M review comments.

***Task 6500 Consultant Deliverables***

1. Draft and Final O&M content (in Word and PDF format, respectively).

**TASK 6600 ACTIVITIES: PROJECT CLOSE-OUT**

**6601. General Close-out Activities**

At the conclusion of the project, the Consultant shall perform the following activities:

1. Review Contractor's substantial completion submittal for compliance with Contract requirements.
  - a. Verify submittal of all required documents.
  - b. Verify completion of all outstanding punch-list items.
  - c. Schedule substantial completions inspection.
2. Conduct substantial completion inspection, including:
  - a. Compiled list of any outstanding punch-list items, and schedule for resolution.
  - b. Prepare Certificate of Substantial Completion for City review/approval.
  - c. Issue Certificate of Substantial Completion.
3. Conduct final completion Inspection.
4. Perform final Close-out Activities:
  - a. Obtain final approval and acceptance of all Consultant project deliverables.
  - b. Transfer all project documentation to the City.
  - c. Finalize all risk management activities.
  - d. Capture lessons learned from the project; present a summary in collaboration with the City management, at the local conferences to help other municipalities leverage the City's experience.

**6602. Record Drawings**

1. Consultant prepare final Record Drawings based on construction records provided by the Contractor, City inspectors and OCM.

***Task 6600 Workshop Summary***

1. None.

***Task 6600 Assumptions***

1. Sub-task 6601 - General Close-out Activities.
  - a. Substantial Completion and Final Completion Inspections will occur at the project site.
  - b. The budget is based on two, eight hour inspections attended by the OCM.
2. Record Sub-task 6602 - Record Drawings.
  - a. Record drawings may be prepared by modifying the model files or individual 2D sheet files, at Consultant's discretion.
  - b. Record drawings will be delivered electronically as 2D sheet files in DWG and PDF formats.
  - c. Record drawings shall be delivered within two months of receipt of Contractor and City inspector redlines.
  - d. Consultant will not independently verify information on redlines provided by Contractor, and may reasonably rely on the information provided.
  - e. Consultant shall update each drawing; average review effort will be one hour per drawing.

***Task 6600 City Deliverables***

1. Final approval and acceptance of all project deliverables.
2. Collaboration in developing list of lessons learned on the project.
3. Contractor's redlines.
4. Response to Consultant's questions or comments on redlines.

***Task 6600 Consultant Deliverables***

1. All final deliverables.
2. Completed risk register.
3. Record drawings in both native CAD and PDF formats.

### 3.0 WORKSHOP AND DELIVERABLE SUMMARY

The following tables provide an overview of the Workshops and Deliverables for the Camas PFAS Evaluation and Design Project. NOTE: Task 5000 information is not included in these summaries.

| Summary of Workshops |                                                           |
|----------------------|-----------------------------------------------------------|
| Workshop 1205a       | ■ Site Utilization Workshop II                            |
| Workshop 1207        | ■ Additional Design-related Permitting Support            |
| Workshop 6101        | ■ Pre-Construction Conference                             |
| Workshop 6107        | ■ City and Contractor-initiated Design Change Workshop(s) |
| Workshop 6401 a-e    | ■ Equipment and Vendor Training(s)                        |
| Workshop 6402 a-d    | ■ Startup and Commissioning Services                      |
| Workshop 6501a       | ■ O&M Manual Final Storyboard Workshop                    |
| Workshop 6502 b-d    | ■ O&M Manual Training Workshops                           |

| Summary of Deliverables |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Task 1200               | <ul style="list-style-type: none"> <li>■ Sub-task 1205 - Additional Final Design               <ul style="list-style-type: none"> <li>» Revised electrical and instrumentation design documents.</li> </ul> </li> <li>■ Sub-task 1207 - Additional Design-related Permitting Support               <ul style="list-style-type: none"> <li>» Phase 2 building plans.</li> <li>» Elevations (colored) for both Phase 1 and Phase 2.</li> <li>» Site Perspectives, Phase 1 and Phase 2 (view from NE and NW and two bird's eye views).</li> <li>» Digital Material Reference on the drawings.</li> </ul> </li> </ul> |
| Task 1400               | <ul style="list-style-type: none"> <li>■ Sub-task 1401 - Additional Geotechnical Services               <ul style="list-style-type: none"> <li>» Draft and Final Geotechnical Engineering Report.</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                          |
| Task 4000               | <ul style="list-style-type: none"> <li>■ Sub-task 4101 - Project Management During Construction               <ul style="list-style-type: none"> <li>» Draft and Final Project Management and Health and Safety Plans.</li> <li>» Monthly progress reports and invoices.</li> <li>» Bi-weekly Project Status Meeting agendas and minutes.</li> <li>» Quarterly Project Summary Meeting agendas and minutes.</li> <li>» Preliminary project logs, with weekly status updates throughout the duration of the project.</li> </ul> </li> </ul>                                                                        |

## Summary of Deliverables

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| Task 6000 | <ul style="list-style-type: none"> <li>■ Sub-task 6101 - Pre-Construction Conference and Weekly Construction Progress Meetings <ul style="list-style-type: none"> <li>» Comments to the Contractor's draft Submittal Schedule.</li> <li>» Communications protocols.</li> <li>» Draft and Final Meeting Agendas and Minutes.</li> <li>» Updated Project Logs.</li> </ul> </li> <li>■ Sub-task 6102 - Schedule of Values Review <ul style="list-style-type: none"> <li>» Comments to the Contractor's draft Schedule of Values.</li> </ul> </li> <li>■ Sub-task 6103 - Document Management System <ul style="list-style-type: none"> <li>» Draft and Final System Architecture.</li> <li>» Logs for all related contract documentation.</li> <li>» Read-access to the System for City use.</li> </ul> </li> <li>■ Sub-task 6104 - Submittal Review <ul style="list-style-type: none"> <li>» Submittal comment sheets.</li> </ul> </li> <li>■ Sub-task 6105 - Request for Information (RFI) <ul style="list-style-type: none"> <li>» RFI responses.</li> </ul> </li> <li>■ Sub-task 6201 - Construction Management and Administration <ul style="list-style-type: none"> <li>» Construction Management Plan Updates, as required.</li> <li>» Video and verbal documentation of existing site conditions.</li> <li>» Draft and final monthly progress reports.</li> <li>» Construction inspection logs, as required.</li> <li>» Notices of Contractor non-compliance.</li> <li>» Construction documentation logs (Submittal, RFIs, CORs, COs, DCNs, etc.).</li> <li>» Payment Application and Construction Schedule review comments and recommendations.</li> <li>» COR comments and recommendations.</li> <li>» Final punch-list.</li> <li>» Periodic record drawing review comments.</li> </ul> </li> <li>■ Sub-task 6202 - Engineer of Record (EOR) Observations and Inspections <ul style="list-style-type: none"> <li>» EOR on-site observation summary.</li> </ul> </li> <li>■ Sub-task 6203 - Specialty Services <ul style="list-style-type: none"> <li>» Draft and Final Treatment Startup Monitoring and Response Plan.</li> </ul> </li> <li>■ Sub-task 6300 - Consultant Controlled Testing and Inspection Services <ul style="list-style-type: none"> <li>» Summaries of daily reports, materials testing information and special inspections.</li> <li>» Final report in accordance with IBC Chapter 17.</li> </ul> </li> <li>■ Sub-task 6400 - Startup and Commissioning Services <ul style="list-style-type: none"> <li>» Revisions to startup, testing and commissioning plan included in Contract Documents, as needed, to accommodate the City's operational constraints.</li> <li>» Feedback to Contractor(s) on their proposed or ongoing testing, startup and commissioning activities.</li> </ul> </li> <li>■ Sub-task 6500 - Operations and Maintenance Manual <ul style="list-style-type: none"> <li>» Draft and Final O&amp;M content (in Word and PDF format, respectively).</li> <li>» EOM documents in preferred electronic format.</li> </ul> </li> <li>■ Sub-task 660 – Project Close-out <ul style="list-style-type: none"> <li>» All final deliverables.</li> <li>» Completed risk register.</li> <li>» Record drawings in both native CAD and PDF formats.</li> </ul> </li> </ul> |
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## 5.0 LEVEL OF EFFORT

The following tables provide a summary of the Level of Effort anticipated for Amendment 2 of the Camas PFAS Evaluation, Design and Construction Project.



CITY OF CAMAS  
PFAS TREATMENT AND WATER SYSTEM PFAS EVALUATION AND WELL 13 PFAS TREATMENT DESIGN  
CONSULTANT LEVEL OF EFFORT

| TASK / DESCRIPTION                                                      | CAROLLO HOURS AND COSTS |                             |                          |                               |                |                      |                          |                      |                |                            |              |                     | SUBCONTRACTOR COSTS | DIRECT EXPENSE          |                    |                         | TOTAL COST          |
|-------------------------------------------------------------------------|-------------------------|-----------------------------|--------------------------|-------------------------------|----------------|----------------------|--------------------------|----------------------|----------------|----------------------------|--------------|---------------------|---------------------|-------------------------|--------------------|-------------------------|---------------------|
|                                                                         | PM<br>\$275             | Principal<br>Prof.<br>\$275 | Senior<br>Prof.<br>\$237 | Project Prof.<br>OCM<br>\$214 | Prof.<br>\$201 | Staff Prof.<br>\$165 | Senior<br>Tech.<br>\$167 | Asst. Prof.<br>\$156 | Tech.<br>\$152 | Document<br>Proc.<br>\$117 | Total Hours  | Labor Cost          | Total Subs          | Other Direct<br>Charges | PECE @ \$/hr<br>15 | Total Direct<br>Charges |                     |
| <b>TASK 1000: FAST-TRACK MITIGATION</b>                                 | <b>40</b>               | <b>40</b>                   | <b>60</b>                | <b>5</b>                      | <b>200</b>     | <b>20</b>            | <b>200</b>               | <b>200</b>           | <b>120</b>     | <b>60</b>                  | <b>945</b>   | <b>\$ 170,650</b>   | <b>\$ 36,212</b>    | <b>\$ -</b>             | <b>\$ 14,175</b>   | <b>\$ 14,175</b>        | <b>\$ 221,037</b>   |
| <b>Task 1200. Planning, Design, and Bidding</b>                         | <b>40</b>               | <b>40</b>                   | <b>60</b>                | <b>5</b>                      | <b>200</b>     | <b>20</b>            | <b>200</b>               | <b>200</b>           | <b>120</b>     | <b>60</b>                  | <b>945</b>   | <b>\$ 170,650</b>   | <b>\$ 16,060</b>    | <b>\$ -</b>             | <b>\$ 14,175</b>   | <b>\$ 14,175</b>        | <b>\$ 200,885</b>   |
| 1205 Additional Final Design                                            | 40                      | 40                          | 60                       | 5                             | 200            | 20                   | 200                      | 200                  | 120            | 60                         | 945          | \$ 170,650          | \$ -                | \$ -                    | \$ 14,175          | \$ 14,175               | \$ 184,825          |
| 1207 Additional Design-related Permitting Support                       | 0                       | 0                           | 0                        | 0                             | 0              | 0                    | 0                        | 0                    | 0              | 0                          | 0            | \$ -                | \$ 16,060           | \$ -                    | \$ -               | \$ -                    | \$ 16,060           |
| <b>Task 1400. Support Services</b>                                      | <b>0</b>                | <b>0</b>                    | <b>0</b>                 | <b>0</b>                      | <b>0</b>       | <b>0</b>             | <b>0</b>                 | <b>0</b>             | <b>0</b>       | <b>0</b>                   | <b>0</b>     | <b>\$ -</b>         | <b>\$ 20,152</b>    | <b>\$ -</b>             | <b>\$ -</b>        | <b>\$ -</b>             | <b>\$ 20,152</b>    |
| 1401 Geotechnical Services                                              | 0                       | 0                           | 0                        | 0                             | 0              | 0                    | 0                        | 0                    | 0              | 0                          | 0            | \$ -                | \$ 20,152           | \$ -                    | \$ -               | \$ -                    | \$ 20,152           |
| <b>TASK 4000: PROJECT MANAGEMENT ACTIVITIES</b>                         | <b>150</b>              | <b>4</b>                    | <b>0</b>                 | <b>0</b>                      | <b>198</b>     | <b>24</b>            | <b>0</b>                 | <b>0</b>             | <b>0</b>       | <b>92</b>                  | <b>468</b>   | <b>\$ 96,872</b>    | <b>\$ -</b>         | <b>\$ -</b>             | <b>\$ 7,020</b>    | <b>\$ 7,020</b>         | <b>\$ 103,892</b>   |
| <b>Task 4100. Project Management during Design</b>                      | <b>150</b>              | <b>4</b>                    | <b>0</b>                 | <b>0</b>                      | <b>198</b>     | <b>24</b>            | <b>0</b>                 | <b>0</b>             | <b>0</b>       | <b>92</b>                  | <b>468</b>   | <b>\$ 96,872</b>    | <b>\$ -</b>         | <b>\$ -</b>             | <b>\$ 7,020</b>    | <b>\$ 7,020</b>         | <b>\$ 103,892</b>   |
| 4102 Project Management and H&S Plans                                   | 40                      | 4                           | 0                        | 0                             | 36             | 24                   | 0                        | 0                    | 0              | 16                         | 120          | \$ 25,168           | \$ -                | \$ -                    | \$ 1,800           | \$ 1,800                | \$ 26,968           |
| 4103 Monthly Progress Reports and Invoices                              | 38                      | 0                           | 0                        | 0                             | 38             | 0                    | 0                        | 0                    | 0              | 76                         | 152          | \$ 26,980           | \$ -                | \$ -                    | \$ 2,280           | \$ 2,280                | \$ 29,260           |
| 4106 Progress Meetings                                                  | 48                      | 0                           | 0                        | 0                             | 48             | 0                    | 0                        | 0                    | 0              | 0                          | 96           | \$ 22,848           | \$ -                | \$ -                    | \$ 1,440           | \$ 1,440                | \$ 24,288           |
| 4107 Project Logs                                                       | 24                      | 0                           | 0                        | 0                             | 76             | 0                    | 0                        | 0                    | 0              | 0                          | 100          | \$ 21,876           | \$ -                | \$ -                    | \$ 1,500           | \$ 1,500                | \$ 23,376           |
| <b>TASK 5000: OPTIONAL SERVICES / CONTINGENCY ACTIVITIES</b>            | <b>0</b>                | <b>0</b>                    | <b>0</b>                 | <b>0</b>                      | <b>0</b>       | <b>0</b>             | <b>0</b>                 | <b>0</b>             | <b>0</b>       | <b>0</b>                   | <b>0</b>     | <b>\$ -</b>         | <b>\$ -</b>         | <b>\$ -</b>             | <b>\$ -</b>        | <b>\$ -</b>             | <b>\$ -</b>         |
| <b>Task 5100. Cost Escalation</b>                                       | <b>0</b>                | <b>0</b>                    | <b>0</b>                 | <b>0</b>                      | <b>0</b>       | <b>0</b>             | <b>0</b>                 | <b>0</b>             | <b>0</b>       | <b>0</b>                   | <b>0</b>     | <b>\$ -</b>         | <b>\$ -</b>         | <b>\$ -</b>             | <b>\$ -</b>        | <b>\$ -</b>             | <b>\$ -</b>         |
| 5101 2025 Escalation Costs (@ 2.5% = \$15k)                             | 0                       | 0                           | 0                        | 0                             | 0              | 0                    | 0                        | 0                    | 0              | 0                          | 0            | \$ -                | \$ -                | \$ -                    | \$ -               | \$ -                    | \$ -                |
| 5102 2026 Escalation Costs (@ 5% = \$45k)                               | 0                       | 0                           | 0                        | 0                             | 0              | 0                    | 0                        | 0                    | 0              | 0                          | 0            | \$ -                | \$ -                | \$ -                    | \$ -               | \$ -                    | \$ -                |
| 5103 2027 Escalation Costs (@ 5% = \$38k)                               | 0                       | 0                           | 0                        | 0                             | 0              | 0                    | 0                        | 0                    | 0              | 0                          | 0            | \$ -                | \$ -                | \$ -                    | \$ -               | \$ -                    | \$ -                |
| 5104 2028 Escalation Costs (not anticipated to be needed)               | 0                       | 0                           | 0                        | 0                             | 0              | 0                    | 0                        | 0                    | 0              | 0                          | 0            | \$ -                | \$ -                | \$ -                    | \$ -               | \$ -                    | \$ -                |
| <b>Task 5300. Additional Services During Construction</b>               | <b>0</b>                | <b>0</b>                    | <b>0</b>                 | <b>0</b>                      | <b>0</b>       | <b>0</b>             | <b>0</b>                 | <b>0</b>             | <b>0</b>       | <b>0</b>                   | <b>0</b>     | <b>\$ -</b>         | <b>\$ -</b>         | <b>\$ -</b>             | <b>\$ -</b>        | <b>\$ -</b>             | <b>\$ -</b>         |
| 5301 e-Operations and Maintenance Manual (~\$150,000)                   | 0                       | 0                           | 0                        | 0                             | 0              | 0                    | 0                        | 0                    | 0              | 0                          | 0            | \$ -                | \$ -                | \$ -                    | \$ -               | \$ -                    | \$ -                |
| 5302 Additional Specialty Services - WQ Obs & Testing (~\$50,000)       | 0                       | 0                           | 0                        | 0                             | 0              | 0                    | 0                        | 0                    | 0              | 0                          | 0            | \$ -                | \$ -                | \$ -                    | \$ -               | \$ -                    | \$ -                |
| <b>TASK 6000: CONSTRUCTION SERVICES</b>                                 | <b>102</b>              | <b>48</b>                   | <b>16</b>                | <b>3,158</b>                  | <b>318</b>     | <b>312</b>           | <b>140</b>               | <b>152</b>           | <b>50</b>      | <b>28</b>                  | <b>4,324</b> | <b>\$ 894,220</b>   | <b>\$ 102,500</b>   | <b>\$ 95,573</b>        | <b>\$ 64,860</b>   | <b>\$ 160,433</b>       | <b>\$ 1,157,153</b> |
| <b>Task 6100. Office Services During Constrution</b>                    | <b>42</b>               | <b>48</b>                   | <b>0</b>                 | <b>550</b>                    | <b>318</b>     | <b>252</b>           | <b>48</b>                | <b>152</b>           | <b>30</b>      | <b>16</b>                  | <b>1,456</b> | <b>\$ 286,108</b>   | <b>\$ 78,544</b>    | <b>\$ -</b>             | <b>\$ 21,840</b>   | <b>\$ 21,840</b>        | <b>\$ 386,492</b>   |
| 6101 Pre-Construction Conference & Weekly Construcion Progress Meetings | 8                       | 0                           | 0                        | 224                           | 0              | 0                    | 0                        | 0                    | 0              | 0                          | 232          | \$ 50,136           | \$ -                | \$ -                    | \$ 3,480           | \$ 3,480                | \$ 53,616           |
| 6102 Schedule of Values Review                                          | 16                      | 0                           | 0                        | 16                            | 0              | 0                    | 0                        | 0                    | 0              | 0                          | 32           | \$ 7,824            | \$ -                | \$ -                    | \$ 480             | \$ 480                  | \$ 8,304            |
| 6103 Document Management System                                         | 4                       | 0                           | 0                        | 16                            | 0              | 0                    | 48                       | 0                    | 0              | 16                         | 84           | \$ 14,412           | \$ -                | \$ -                    | \$ 1,260           | \$ 1,260                | \$ 15,672           |
| 6104 Submittal Review                                                   | 8                       | 40                          | 0                        | 200                           | 220            | 200                  | 0                        | 120                  | 0              | 0                          | 788          | \$ 151,940          | \$ 50,970           | \$ -                    | \$ 11,820          | \$ 11,820               | \$ 214,730          |
| 6105 Request for Information (RFI)                                      | 0                       | 8                           | 0                        | 50                            | 62             | 40                   | 0                        | 24                   | 0              | 0                          | 184          | \$ 35,706           | \$ 14,221           | \$ -                    | \$ 2,760           | \$ 2,760                | \$ 52,687           |
| 6106 Change Orders Requests (CORs) and Change Orders (COs)              | 4                       | 0                           | 0                        | 24                            | 24             | 0                    | 0                        | 0                    | 12             | 0                          | 64           | \$ 12,884           | \$ 6,318            | \$ -                    | \$ 960             | \$ 960                  | \$ 20,162           |
| 6107 Design Change Notices (DCNs)                                       | 2                       | 0                           | 0                        | 20                            | 12             | 12                   | 0                        | 8                    | 18             | 0                          | 72           | \$ 13,206           | \$ 7,036            | \$ -                    | \$ 1,080           | \$ 1,080                | \$ 21,322           |
| <b>Task 6200. Field Services During Construction</b>                    | <b>0</b>                | <b>0</b>                    | <b>0</b>                 | <b>2,240</b>                  | <b>0</b>       | <b>0</b>             | <b>0</b>                 | <b>0</b>             | <b>0</b>       | <b>0</b>                   | <b>2,240</b> | <b>\$ 479,360</b>   | <b>\$ 18,973</b>    | <b>\$ 70,573</b>        | <b>\$ 33,600</b>   | <b>\$ 104,173</b>       | <b>\$ 602,506</b>   |
| 6201 Owner's Construction Manager (OCM) and Administration              | 0                       | 0                           | 0                        | 1792                          | 0              | 0                    | 0                        | 0                    | 0              | 0                          | 1792         | \$ 383,488          | \$ -                | \$ 70,073               | \$ 26,880          | \$ 96,953               | \$ 480,441          |
| 6202 Engineer of Record                                                 | 0                       | 0                           | 0                        | 448                           | 0              | 0                    | 0                        | 0                    | 0              | 0                          | 448          | \$ 95,872           | \$ -                | \$ 500                  | \$ 6,720           | \$ 7,220                | \$ 103,092          |
| 6203 Specialty Services                                                 | 0                       | 0                           | 0                        | 0                             | 0              | 0                    | 0                        | 0                    | 0              | 0                          | 0            | \$ -                | \$ 18,973           | \$ -                    | \$ -               | \$ -                    | \$ 18,973           |
| <b>Task 6300. Materials Testing and Special Inspection Services</b>     | <b>0</b>                | <b>0</b>                    | <b>0</b>                 | <b>0</b>                      | <b>0</b>       | <b>0</b>             | <b>0</b>                 | <b>0</b>             | <b>0</b>       | <b>0</b>                   | <b>0</b>     | <b>\$ -</b>         | <b>\$ -</b>         | <b>\$ 25,000</b>        | <b>\$ -</b>        | <b>\$ 25,000</b>        | <b>\$ 25,000</b>    |
| 6301 Consultant Controlled Testing and Inspection Services              | 0                       | 0                           | 0                        | 0                             | 0              | 0                    | 0                        | 0                    | 0              | 0                          | 0            | \$ -                | \$ -                | \$ 25,000               | \$ -               | \$ 25,000               | \$ 25,000           |
| <b>Task 6400. Startup and Commissioining Services</b>                   | <b>0</b>                | <b>0</b>                    | <b>0</b>                 | <b>288</b>                    | <b>0</b>       | <b>0</b>             | <b>0</b>                 | <b>0</b>             | <b>0</b>       | <b>0</b>                   | <b>288</b>   | <b>\$ 61,632</b>    | <b>\$ -</b>         | <b>\$ -</b>             | <b>\$ 4,320</b>    | <b>\$ 4,320</b>         | <b>\$ 65,952</b>    |
| 6401 Training                                                           | 0                       | 0                           | 0                        | 64                            | 0              | 0                    | 0                        | 0                    | 0              | 0                          | 64           | \$ 13,696           | \$ -                | \$ -                    | \$ 960             | \$ 960                  | \$ 14,656           |
| 6402 Startup and Commissioning                                          | 0                       | 0                           | 0                        | 224                           | 0              | 0                    | 0                        | 0                    | 0              | 0                          | 224          | \$ 47,936           | \$ -                | \$ -                    | \$ 3,360           | \$ 3,360                | \$ 51,296           |
| <b>Task 6500. Operations and Maintenance Manual</b>                     | <b>12</b>               | <b>0</b>                    | <b>16</b>                | <b>80</b>                     | <b>0</b>       | <b>60</b>            | <b>0</b>                 | <b>0</b>             | <b>20</b>      | <b>12</b>                  | <b>200</b>   | <b>\$ 38,556</b>    | <b>\$ -</b>         | <b>\$ -</b>             | <b>\$ 3,000</b>    | <b>\$ 3,000</b>         | <b>\$ 41,556</b>    |
| 6501 Operations and Maintenance Manual                                  | 12                      | 0                           | 16                       | 80                            | 0              | 60                   | 0                        | 0                    | 20             | 12                         | 200          | \$ 38,556           | \$ -                | \$ -                    | \$ 3,000           | \$ 3,000                | \$ 41,556           |
| <b>Task 6600. Project Close-out</b>                                     | <b>48</b>               | <b>0</b>                    | <b>0</b>                 | <b>0</b>                      | <b>0</b>       | <b>0</b>             | <b>92</b>                | <b>0</b>             | <b>0</b>       | <b>0</b>                   | <b>140</b>   | <b>\$ 28,564</b>    | <b>\$ 4,983</b>     | <b>\$ -</b>             | <b>\$ 2,100</b>    | <b>\$ 2,100</b>         | <b>\$ 35,647</b>    |
| 6601 General Close-out Activities                                       | 48                      | 0                           | 0                        | 0                             | 0              | 0                    | 0                        | 0                    | 0              | 0                          | 48           | \$ 13,200           | \$ -                | \$ -                    | \$ 720             | \$ 720                  | \$ 13,920           |
| 6602 Record Drawings                                                    | 0                       | 0                           | 0                        | 0                             | 0              | 0                    | 92                       | 0                    | 0              | 0                          | 92           | \$ 15,364           | \$ 4,983            | \$ -                    | \$ 1,380           | \$ 1,380                | \$ 21,727           |
| <b>TOTAL (TASK 1000 - 6000)</b>                                         | <b>292</b>              | <b>92</b>                   | <b>76</b>                | <b>3,163</b>                  | <b>716</b>     | <b>356</b>           | <b>340</b>               | <b>352</b>           | <b>170</b>     | <b>180</b>                 | <b>5,737</b> | <b>\$ 1,161,742</b> | <b>\$ 138,712</b>   | <b>\$ 95,573</b>        | <b>\$ 86,055</b>   | <b>\$ 181,628</b>       | <b>\$ 1,482,082</b> |



CITY OF CAMAS  
PFAS TREATMENT AND WATER SYSTEM PFAS EVALUATION AND WELL 13 PFAS TREATMENT DESIGN  
CONSULTANT LEVEL OF EFFORT

| TASK / DESCRIPTION                                                      | CAROLLO HOURS AND COSTS |                     | SUBCONTRACTOR COSTS |                  |                  |                      |                   | DIRECT EXPENSE       |                  |                      | TOTAL COST          |
|-------------------------------------------------------------------------|-------------------------|---------------------|---------------------|------------------|------------------|----------------------|-------------------|----------------------|------------------|----------------------|---------------------|
|                                                                         | Total Hours             | Labor Cost          | Delve Underground   | MacKay Sposito   | MWA Architects   | Total Sub Markup 10% | Total Subs        | Other Direct Charges | PECE @ \$/hr 15  | Total Direct Charges |                     |
| <b>TASK 1000: FAST-TRACK MITIGATION</b>                                 | <b>945</b>              | <b>\$ 170,650</b>   | <b>\$ 18,320</b>    | <b>\$ -</b>      | <b>\$ 14,600</b> | <b>\$ 3,292</b>      | <b>\$ 36,212</b>  | <b>\$ -</b>          | <b>\$ 14,175</b> | <b>\$ 14,175</b>     | <b>\$ 221,037</b>   |
| <b>Task 1200. Planning, Design, and Bidding</b>                         | <b>945</b>              | <b>\$ 170,650</b>   | <b>\$ -</b>         | <b>\$ -</b>      | <b>\$ 14,600</b> | <b>\$ 1,460</b>      | <b>\$ 16,060</b>  | <b>\$ -</b>          | <b>\$ 14,175</b> | <b>\$ 14,175</b>     | <b>\$ 200,885</b>   |
| 1205 Additional Final Design                                            | 945                     | \$ 170,650          | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ -                 | \$ 14,175        | \$ 14,175            | \$ 184,825          |
| 1207 Additional Design-related Permitting Support                       | 0                       | \$ -                | \$ -                | \$ -             | \$ 14,600        | \$ 1,460             | \$ 16,060         | \$ -                 | \$ -             | \$ -                 | \$ 16,060           |
| <b>Task 1400. Support Services</b>                                      | <b>0</b>                | <b>\$ -</b>         | <b>\$ 18,320</b>    | <b>\$ -</b>      | <b>\$ -</b>      | <b>\$ 1,832</b>      | <b>\$ 20,152</b>  | <b>\$ -</b>          | <b>\$ -</b>      | <b>\$ -</b>          | <b>\$ 20,152</b>    |
| 1401 Geotechnical Services                                              | 0                       | \$ -                | \$ 18,320           | \$ -             | \$ -             | \$ 1,832             | \$ 20,152         | \$ -                 | \$ -             | \$ -                 | \$ 20,152           |
| <b>TASK 4000: PROJECT MANAGEMENT ACTIVITIES</b>                         | <b>468</b>              | <b>\$ 96,872</b>    | <b>\$ -</b>         | <b>\$ -</b>      | <b>\$ -</b>      | <b>\$ -</b>          | <b>\$ -</b>       | <b>\$ -</b>          | <b>\$ 7,020</b>  | <b>\$ 7,020</b>      | <b>\$ 103,892</b>   |
| <b>Task 4100. Project Management during Design</b>                      | <b>468</b>              | <b>\$ 96,872</b>    | <b>\$ -</b>         | <b>\$ -</b>      | <b>\$ -</b>      | <b>\$ -</b>          | <b>\$ -</b>       | <b>\$ -</b>          | <b>\$ 7,020</b>  | <b>\$ 7,020</b>      | <b>\$ 103,892</b>   |
| 4102 Project Management and H&S Plans                                   | 120                     | \$ 25,168           | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ -                 | \$ 1,800         | \$ 1,800             | \$ 26,968           |
| 4103 Monthly Progress Reports and Invoices                              | 152                     | \$ 26,980           | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ -                 | \$ 2,280         | \$ 2,280             | \$ 29,260           |
| 4106 Progress Meetings                                                  | 96                      | \$ 22,848           | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ -                 | \$ 1,440         | \$ 1,440             | \$ 24,288           |
| 4107 Project Logs                                                       | 100                     | \$ 21,876           | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ -                 | \$ 1,500         | \$ 1,500             | \$ 23,376           |
| <b>TASK 5000: OPTIONAL SERVICES / CONTINGENCY ACTIVITIES</b>            | <b>0</b>                | <b>\$ -</b>         | <b>\$ -</b>         | <b>\$ -</b>      | <b>\$ -</b>      | <b>\$ -</b>          | <b>\$ -</b>       | <b>\$ -</b>          | <b>\$ -</b>      | <b>\$ -</b>          | <b>\$ -</b>         |
| <b>Task 5100. Cost Escalation</b>                                       | <b>0</b>                | <b>\$ -</b>         | <b>\$ -</b>         | <b>\$ -</b>      | <b>\$ -</b>      | <b>\$ -</b>          | <b>\$ -</b>       | <b>\$ -</b>          | <b>\$ -</b>      | <b>\$ -</b>          | <b>\$ -</b>         |
| 5101 2025 Escalation Costs (@ 2.5% = \$15k)                             | 0                       | \$ -                | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ -                 | \$ -             | \$ -                 | \$ -                |
| 5102 2026 Escalation Costs (@ 5% = \$45k)                               | 0                       | \$ -                | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ -                 | \$ -             | \$ -                 | \$ -                |
| 5103 2027 Escalation Costs (@ 5% = \$38k)                               | 0                       | \$ -                | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ -                 | \$ -             | \$ -                 | \$ -                |
| 5104 2028 Escalation Costs (not anticipated to be needed)               | 0                       | \$ -                | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ -                 | \$ -             | \$ -                 | \$ -                |
| <b>Task 5300. Additional Services During Construction</b>               | <b>0</b>                | <b>\$ -</b>         | <b>\$ -</b>         | <b>\$ -</b>      | <b>\$ -</b>      | <b>\$ -</b>          | <b>\$ -</b>       | <b>\$ -</b>          | <b>\$ -</b>      | <b>\$ -</b>          | <b>\$ -</b>         |
| 5301 e-Operations and Maintenance Manual (~\$150,000)                   | 0                       | \$ -                | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ -                 | \$ -             | \$ -                 | \$ -                |
| 5302 Additional Specialty Services - WQ Obs & Testing (~\$50,000)       | 0                       | \$ -                | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ -                 | \$ -             | \$ -                 | \$ -                |
| <b>TASK 6000: CONSTRUCTION SERVICES</b>                                 | <b>4,324</b>            | <b>\$ 894,220</b>   | <b>\$ 16,200</b>    | <b>\$ 38,802</b> | <b>\$ 38,180</b> | <b>\$ 9,318</b>      | <b>\$ 102,500</b> | <b>\$ 95,573</b>     | <b>\$ 64,860</b> | <b>\$ 160,433</b>    | <b>\$ 1,157,153</b> |
| <b>Task 6100. Office Services During Constrution</b>                    | <b>1,456</b>            | <b>\$ 286,108</b>   | <b>\$ 10,440</b>    | <b>\$ 30,624</b> | <b>\$ 30,340</b> | <b>\$ 7,140</b>      | <b>\$ 78,544</b>  | <b>\$ -</b>          | <b>\$ 21,840</b> | <b>\$ 21,840</b>     | <b>\$ 386,492</b>   |
| 6101 Pre-Construction Conference & Weekly Construcion Progress Meetings | 232                     | \$ 50,136           | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ -                 | \$ 3,480         | \$ 3,480             | \$ 53,616           |
| 6102 Schedule of Values Review                                          | 32                      | \$ 7,824            | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ -                 | \$ 480           | \$ 480               | \$ 8,304            |
| 6103 Document Management System                                         | 84                      | \$ 14,412           | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ -                 | \$ 1,260         | \$ 1,260             | \$ 15,672           |
| 6104 Submittal Review                                                   | 788                     | \$ 151,940          | \$ 9,000            | \$ 18,096        | \$ 19,240        | \$ 4,634             | \$ 50,970         | \$ -                 | \$ 11,820        | \$ 11,820            | \$ 214,730          |
| 6105 Request for Information (RFI)                                      | 184                     | \$ 35,706           | \$ 1,440            | \$ 5,568         | \$ 5,920         | \$ 1,293             | \$ 14,221         | \$ -                 | \$ 2,760         | \$ 2,760             | \$ 52,687           |
| 6106 Change Orders Requests (CORs) and Change Orders (COs)              | 64                      | \$ 12,884           | \$ -                | \$ 2,784         | \$ 2,960         | \$ 574               | \$ 6,318          | \$ -                 | \$ 960           | \$ 960               | \$ 20,162           |
| 6107 Design Change Notices (DCNs)                                       | 72                      | \$ 13,206           | \$ -                | \$ 4,176         | \$ 2,220         | \$ 640               | \$ 7,036          | \$ -                 | \$ 1,080         | \$ 1,080             | \$ 21,322           |
| <b>Task 6200. Field Services During Construction</b>                    | <b>2,240</b>            | <b>\$ 479,360</b>   | <b>\$ 5,760</b>     | <b>\$ 5,568</b>  | <b>\$ 5,920</b>  | <b>\$ 1,725</b>      | <b>\$ 18,973</b>  | <b>\$ 70,573</b>     | <b>\$ 33,600</b> | <b>\$ 104,173</b>    | <b>\$ 602,506</b>   |
| 6201 Owner's Construction Manager (OCM) and Administration              | 1792                    | \$ 383,488          | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ 70,073            | \$ 26,880        | \$ 96,953            | \$ 480,441          |
| 6202 Engineer of Record                                                 | 448                     | \$ 95,872           | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ 500               | \$ 6,720         | \$ 7,220             | \$ 103,092          |
| 6203 Specialty Services                                                 | 0                       | \$ -                | \$ 5,760            | \$ 5,568         | \$ 5,920         | \$ 1,725             | \$ 18,973         | \$ -                 | \$ -             | \$ -                 | \$ 18,973           |
| <b>Task 6300. Materials Testing and Special Inspection Services</b>     | <b>0</b>                | <b>\$ -</b>         | <b>\$ -</b>         | <b>\$ -</b>      | <b>\$ -</b>      | <b>\$ -</b>          | <b>\$ -</b>       | <b>\$ 25,000</b>     | <b>\$ -</b>      | <b>\$ 25,000</b>     | <b>\$ 25,000</b>    |
| 6301 Consultant Controlled Testing and Inspection Services              | 0                       | \$ -                | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ 25,000            | \$ -             | \$ 25,000            | \$ 25,000           |
| <b>Task 6400. Startup and Commissioining Services</b>                   | <b>288</b>              | <b>\$ 61,632</b>    | <b>\$ -</b>         | <b>\$ -</b>      | <b>\$ -</b>      | <b>\$ -</b>          | <b>\$ -</b>       | <b>\$ -</b>          | <b>\$ 4,320</b>  | <b>\$ 4,320</b>      | <b>\$ 65,952</b>    |
| 6401 Training                                                           | 64                      | \$ 13,696           | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ -                 | \$ 960           | \$ 960               | \$ 14,656           |
| 6402 Startup and Commissioning                                          | 224                     | \$ 47,936           | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ -                 | \$ 3,360         | \$ 3,360             | \$ 51,296           |
| <b>Task 6500. Operations and Maintenance Manual</b>                     | <b>200</b>              | <b>\$ 38,556</b>    | <b>\$ -</b>         | <b>\$ -</b>      | <b>\$ -</b>      | <b>\$ -</b>          | <b>\$ -</b>       | <b>\$ -</b>          | <b>\$ 3,000</b>  | <b>\$ 3,000</b>      | <b>\$ 41,556</b>    |
| 6501 Operations and Maintanance Manual                                  | 200                     | \$ 38,556           | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ -                 | \$ 3,000         | \$ 3,000             | \$ 41,556           |
| <b>Task 6600. Project Close-out</b>                                     | <b>140</b>              | <b>\$ 28,564</b>    | <b>\$ -</b>         | <b>\$ 2,610</b>  | <b>\$ 1,920</b>  | <b>\$ 453</b>        | <b>\$ 4,983</b>   | <b>\$ -</b>          | <b>\$ 2,100</b>  | <b>\$ 2,100</b>      | <b>\$ 35,647</b>    |
| 6601 General Close-out Activities                                       | 48                      | \$ 13,200           | \$ -                | \$ -             | \$ -             | \$ -                 | \$ -              | \$ -                 | \$ 720           | \$ 720               | \$ 13,920           |
| 6602 Record Drawings                                                    | 92                      | \$ 15,364           | \$ -                | \$ 2,610         | \$ 1,920         | \$ 453               | \$ 4,983          | \$ -                 | \$ 1,380         | \$ 1,380             | \$ 21,727           |
| <b>TOTAL (TASK 1000 - 6000)</b>                                         | <b>5,737</b>            | <b>\$ 1,161,742</b> | <b>\$ 34,520</b>    | <b>\$ 38,802</b> | <b>\$ 52,780</b> | <b>\$ 12,610</b>     | <b>\$ 138,712</b> | <b>\$ 95,573</b>     | <b>\$ 86,055</b> | <b>\$ 181,628</b>    | <b>\$ 1,482,082</b> |

## 6.0 SCHEDULE

The following table provides a baseline schedule for Amendment 2 of the Camas PFAS Evaluation, Design and Construction Project.

| Schedule                            |                 |
|-------------------------------------|-----------------|
| Original Contract Notice to Proceed | April 3, 2024   |
| Notice to Proceed Construction      | August 18, 2025 |
| Completed Construction              | September, 2027 |
| Closeout                            | October, 2027   |