



August 1, 2024

BCC Agenda Date/Item: \_\_\_\_\_

Board of County Commissioners  
 Acting as the governing body of Water Environment Services  
 Clackamas County

**Approval of Amendment #2 with Jacobs Engineering Group for the Tri-City Outfall Project. Amendment value is \$806,051. Total Contract Value is \$2,061,086. Funding through WES Sanitary Sewer Construction Fund. No County General Funds are involved.**

<b>Previous Board Action/Review</b>	Presented at Issues – July 30 <sup>th</sup> , 2024.		
<b>Performance Clackamas</b>	1. This project supports the WES Strategic Plan to provide Enterprise Resiliency, Infrastructure Strategy and Performance and Operational Optimization. 2. This project supports the County’s Strategic Plan of building a strong infrastructure that delivers services to customers and honors, utilizes, promotes and invest in our natural resources.		
<b>Counsel Review</b>	Yes	<b>Procurement Review</b>	Yes
<b>Contact Person</b>	Jeff Stallard	<b>Contact Phone</b>	503-742-4694

**EXECUTIVE SUMMARY:** The Tri-City Water Resource Recovery Facility (WRRF), is owned and operated by WES and discharges treated effluent through an existing 72-inch to 84-inch diameter outfall pipeline to the Willamette River. The peak flow into the Tri-City WRRF is approaching the outfall’s rated hydraulic capacity of 75 million gallons per day. Following an evaluation of alternative routes and a hydraulic study, a 90-inch diameter outfall pipe is proposed to convey treated flow from the Tri-City WRRF.

The large diameter pipeline, its location, required tunneling, and construction in the Willamette River make this a complex project to design and construct. WES therefore decided to use the Progressive Design Build delivery model for completion of the Outfall Project and after a formal procurement process, hired Jacobs Engineering, Inc. to provide engineering services in delivery of this project.

This amendment with Jacobs Engineering includes engineering services during construction to support WES during construction of the outfall pipeline and in water diffusers next summer. In addition to services during construction, there is scope included in this amendment to perform the permit required Archeological oversight during construction activities.

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This amendment will add the additional scope contemplated in the original RFP to include the engineering services during construction for final project delivery.

**RECOMMENDATION:** Staff recommends that the Board of County Commissioners of Clackamas County, acting as the governing body of Water Environment Services, approve Amendment #2 for Contract #3956 with Jacobs Engineering Group for the Tri-City Outfall Project.

Respectfully submitted,



Ron Wierenga  
Deputy Director, WES

Attachment: Amendment #2 with Jacobs Engineering Group for Contract #3956

**AMENDMENT #2**  
**TO THE CONTRACT DOCUMENTS WITH JACOBS ENGINEERING GROUP INC. FOR**  
**OWNER REPRESENTATION SERVICES FOR THE TRI CITY OUTFALL PROJECT**  
**Contract #3956**

This Amendment #2 is entered into between **Jacobs Engineering Group Inc.** (“Contractor”) and Water Environment Services (“District”) and shall become part of the Contract documents entered into between both parties on **October 14, 2021** (“Contract”).

The Purpose of this Amendment #2 is to make the following changes to the Contract:

1. ARTICLE I, Section 2. **Scope of Work** is hereby amended as follows:  
 District has authorized an increase to the Scope of Work to include the anticipated Phase III services for the Tri City Outfall Project, which were contemplated in the original RFP #2021-09. Phase III includes preparing late applications for construction permits, support in obtaining easements, and providing Owner’s Representative Services during construction. The additional Scope of Work for Phase III is included as **Exhibit “C”** and hereby attached and included by reference.
  
2. ARTICLE I, Section 3. **Consideration** is hereby amended as follows:  
 In consideration for Contractor performing the additional work for Phase III, District agrees to increase compensation to the Contractor by an amount not exceed \$806,051.00. Consideration rates are on a time and materials basis in accordance with the rates and costs specified in Exhibit C. The total Contract compensation shall not exceed \$2,061,086.00.

ORIGINAL CONTRACT	\$ 462,468.00
AMENDMENT #1	\$ 792,567.00
<b><u>AMENDMENT #2</u></b>	<b><u>\$ 806,051.00</u></b>
<b>TOTAL AMENDEED CONTRACT</b>	<b>\$2,061,086.00</b>

Except as expressly amended above, all other terms and conditions of the Contract shall remain in full force and effect. By signature below, the parties agree to this Amendment 2, effective upon the date of the last signature below.

**Jacobs Engineering Group Inc.**

**Water Environment Services**

  
 \_\_\_\_\_  
 Authorized Signature                      Date

\_\_\_\_\_  
 Chair    Date

**Quitterie Cotten**  
 \_\_\_\_\_  
 Printed Name

**Approved as to Form**

\_\_\_\_\_  
 County Counsel                                      Date

**Exhibit C**  
**Scope of Work**

## EXHIBIT C – SCOPE OF WORK

### Water Environment Services of Clackamas County Tri-City WRRF Outfall Diffuser Improvements

#### Background

Clackamas County (County) has selected Jacobs Engineering Group Inc. (Contractor) to provide Owner's Representative Services related to design and construction of a new wastewater treatment plant outfall and diffuser from the Tri-City Water Resource Recovery Facility (WRRF) to the Willamette River. Under separate contract (Tri City WRRF Willamette River Outfall Project, RFP #2018-92), CH2M HILL Engineers, Inc. (now a wholly owned subsidiary of Jacobs Engineering Group) provided preliminary design and related permitting services to the County and during the course of delivery of that separate scope, the County determined to proceed in a Progressive Design Build project delivery approach for the new outfall and diffuser. Jacobs Engineering Group Inc. proposed through a publicly advertised competitive selection process and was selected and awarded the work described herein. Work of this scope makes use of certain completed work products delivered under the RFP #2018-92 contract, and transfers work-in progress from the prior work. The County intends to conclude the prior work and proceed with new services under this new contract.

The project scope was divided into in three phases. Work in **the first phase** included scope elements that need to be advanced prior to having a progressive design builder under contract. This included assisting the District with the selection of a design builder, initial project permitting coordination and development, and assisting the District with stakeholder outreach and communication about the Project. **The second phase** and includes Owner's Representative pre-construction services (Technical Review, Cost estimating, Risk Management and GMP negotiations), diffuser design and additional permitting that requires a higher level of design definition. **This scope is the third phase** and includes preparing late applications for construction permits, easements and providing Owner's Representative Services during construction.

In summary, the general work of the scope for this third phase of the project includes:

- Additional Project Management services to support this phase of the project.
- Preparing late applications for construction permits
- Supporting the District with Easement Acquisition
- Providing Owner's Representative Services during construction
- Conducting a mixing zone study once the construction is complete and the diffuser is operational including a pre-construction and post construction bathymetric survey.

## Tri-City Outfall Diffuser Improvements SOW

### Task 1 Project Management

The purpose this task is to communicate about ongoing project progress with the District, manage the project team to meet project goals and tasks as described in this scope of work, establish and monitor compliance with project budget and schedule, and manage change as it occurs.

**Progress Meetings and Updates:** The Contractor project manager (PM) will meet with the District's PM weekly to review project progress and discuss upcoming work activities. The PM will provide brief email weekly summaries of work in progress, upcoming activities, and unresolved issues.

**Project Execution Plan:** A project execution plan will be prepared and used during the execution of this project work. Specific elements of the plan will include definition of the District and Contractor project organization, communication, document control, and file sharing and change management approach.

**Project Change:** Should the project work deviate from the scope of work described in this document, the PM will discuss the need for change with the District PM. A project change documentation form will be prepared describing the reason for change, the addition or reduction of scope to be performed, and the budget/schedule impact. This form will be submitted to the District for approval.

**Project Team Management and Direction:** The PM will manage, coordinate, and integrate work of the Project team as required to deliver the project within budget and agreed upon schedule.

**Assumptions:**

- Project Management during construction is anticipated to last 18 months.
- Project Management beyond construction for additional closeout tasks is anticipated to last 4 months.

**Deliverables:**

- Regular project progress email summaries.
- Project Management Plan.
- Monthly project invoice with activity narrative.
- Completed change management forms, as needed, to document impacts of potential changes on level of effort and/or schedule.

**Task 2      Owner Representative Services**

Task 2.1      Procurement - Design Builder Qualification Based Selection [Phase 1]

Task 2.2      Owner Representative Services during Pre-Construction [Phase 2]

**Task 3      Permitting**

Task 3.1      Permitting Coordination [Phase 1]

Task 3.2      Federal Permits [Phase 1]

Task 3.3      State Permits [Phase 1]

Task 3.4      City of Oregon City Permits [Phase 1]

**Task 4      Public Involvement and Outreach Support**

Task 4.1      Public Involvement and Outreach Plan and General Coordination [Phase 1]

Task 4.2      Assist with Open House(s) and Project Tours [Phase 1]

Task 4.3      Provide Focused Outreach [Phase 1]

Task 4.4      Website Updates, Educational Videos, Fact Sheet and Newsletter Articles [Phase 1]

**Task 5      Quality Management [Phases 1 and 2]**

## **Task 6 Environmental Studies**

### **Task 6.1 Environmental Studies [Phase 1]**

## **Task 7 Diffuser Design**

### **Task 7.1 30% Design [Phase 2]**

### **Task 7.2 90% Design [Phase 2]**

### **Task 7.3 Final Design [Phase 2]**

### **Task 7.4 Flow and Quality Monitoring Design Changes [Phase 3]**

For the Design changes to the existing flow and water quality monitoring, the Contractor shall meet with District Staff to discuss and finalize design approach and instrument locations and type. Instrumentation will include flow monitoring and water quality sampling. The Contractor shall support the District in establishing preferred instrument selection based on current preferences and available alternatives and provide cut sheets for the Design Builder to purchase the required equipment. Instrumentation location, installation and sample point locations will be finalized. Tie-in to the District's electrical and SCADA system will be included in the design. The design team will work to ensure the design is coordinated to incorporate instruments into the process mechanical drawings and with the weir design at the Effluent Mixing box and Junction box. This task also includes integration of new instruments into the SCADA programming of analog signals for monitoring and alarms.

#### ***Assumptions:***

- Drawing package is based on 5 sheets total
- One instrument datasheet per instrument (assume 5)
- Instrument installation sheet included for each instrument type (assume 5)
- Two 2-hour in person workshop with client at TC WRF facility with 2 Contractor staff and District O&M staff.
- Design includes preliminary and final design. One round of client comments will be incorporated at each deliverable.
- The Contractor shall spend a total of 4 days on-site during installation and after installation for integration into the SCADA programming of signals for monitoring and alarms.

#### ***Preliminary Design Deliverables:***

- Preliminary Design Drawings including a Plan View and a P&ID
- Example instrument datasheet per instrument.

#### ***Final Design Submittal Deliverables:***

- Final Design Drawings: Plan View (1), Wiring Schedule (1), P&ID (1), Electrical (2)
- Instrument datasheets for each instrument
- Instrument installation sheets for flow meter and water quality instruments

### **Task 7.5 Property Acquisition [Phase 2]**

Contractor sub-consultant, Epic Land Solutions (Epic) will support the District and work with District staff to obtain up to three (3) preliminary title reports and identify any title issues that may interfere with or delay ROW acquisition. Epic will prepare and deliver General Information Notices (GINs) for each affected property owner.

## **Appraisal and Appraisal Review**

Epic shall provide up to two (2) appraisals and use appraisers who are licensed or certified in the State of Oregon and competent in eminent domain appraising. Epic shall provide no fewer than 15 days' written notice to owners of the planned appraisal inspections. The property owner and designated representative, if any, shall be invited to accompany the appraiser on any inspection of the property for appraisal purposes. Epic shall send this notice via certified mail with proof of delivery and kept in the parcel file and perform independent reviews of appraisals. Both appraisal and review will be provided to the District for final approval. The District will establish just compensation for each property owner.

### **Acquisition Services**

Epic shall identify all property owners, and compile property owner information needed to acquire necessary property rights. This is including but not limited to property owner vesting, phone numbers, email addresses, and mailing addresses.

All right-of-way/easements shall be acquired in the name of the District. Epic shall conduct negotiations, on behalf of the District, in good faith and in compliance with all federal and state laws and regulations. Epic shall conduct negotiations for acquisition of real property based on Appraisal Review. Epic shall be responsible for working with the title company to clear title encumbrances identified on the Preliminary Title Report or making the offer subject to clearing title encumbrances. Epic shall present any requests for taking title subject to one or more outstanding interests to the District for approval. Fee owners' and contract purchasers' ownership interests must be cleared. When impacted by the taking, lessees' interests must also be cleared.

Epic shall prepare and present to the District the draft Offer Packets. The District will provide approved acquisition documents or approve samples provided by Epic. All offers will be made on District letterhead, will include District contact information, and will be signed by the District. These Offer Packets shall include, but are not limited to, acquisition and relocation brochures, offer-benefit letter, acquisition and relocation summary statements, conveyance documents and exhibits (to be approved by the District's legal representative), copy of appraisal, map of acquisition, instruments of conveyance and a W-9 form (if money is exchanged). Epic shall send the offers via certified mail with proof of delivery must be documented in the Report of Personal Interview and file.

Epic shall make every reasonable effort to acquire the ROW expeditiously by negotiation and give property owners reasonable opportunity to consider the offer (statutorily 40 calendar days) and to present material the owner believes is relevant to determining the value of the property. Epic shall attempt to negotiate an approved administrative settlement, but shall not advance the time of condemnation, or defer negotiations or condemnation or the deposit of funds with the court or take any other coercive action in order to induce an agreement on the price to be paid for the property (49 CFR 24.102(h)).

If the offer is accepted, Epic shall obtain signatures from property owners on all required documents and notarize when appropriate. Epic will deliver completed files to the District or deliver a recommendation for condemnation. District will record documents and pay property owners. If a counteroffer is received, Epic shall submit the proposed Counteroffer (exceeding the estimate of just compensation) with a justification letter and owner supplied supporting documentation to the District for approval.

Epic shall continue documenting the Report of Personal Interview for each file. The Report of Personal Interview must include contact with property owners, owner's attorneys and occupants, efforts to achieve amicable settlements, and owner's suggestions for changes in plans, responses to owner's counterproposals etc.



**Assumptions:**

- Rights of Entry are not needed for this project.
- Assume two (2) acquisition files. If additional files, scope and fee will be revised accordingly.
- Assumes two (2) taking and damages appraisals. If additional appraisals, specialty reports or before and after Appraisals are necessary, scope and fee will be revised accordingly.
- A Cost Estimate is not needed for this project.
- Temporary Construction Easements will not be recorded.
- The District will make payment to property owners and record documents if needed.
- Jacobs will provide project information, maps, legal descriptions and exhibits, environmental documents and construction and right-of-way plans to Epic at the start of the project.
- If condemnation support is needed, additional scope and fee will be revised accordingly.

**Deliverables:**

- Weekly status reports updating the project team on the status of the ROW acquisition activity.
- Completed ROW files for the District’s records once the ROW acquisition is completed.

**Task 8 Construction Support [Phase 3]**

**Task 8.1 Archaeological Monitoring Activities**

**Background**

The Tri-City Outfall project is located in a sensitive area where pre-contact archaeological sites and human burials have been documented. As a part of the NWP 10 conditions, the District is required to implement cultural resources identification efforts during construction of the Tri-City Outfall project, including the use of an archaeological monitor and historic human remains detection dogs in areas where there is a potential to contain archaeological material or burials.

**Task 8.1.1 Archaeological Monitoring Plan Required Activities**

The Contractor shall provide an on-site cultural resources monitor (monitor) to observe select ground disturbing activities outlined in the Cultural Resources Monitoring Plan, coordinate the monitoring effort and communication with the USACE and Confederated Tribes of Grand Ronde (CTGR) on a weekly basis.

**Cultural Awareness training.** Prior to construction, the monitor will provide a Cultural Awareness Training to construction personnel involved with ground disturbance.

**Segment 1 – Open Cut Construction Monitoring.** The monitor will be on site full time during open trench excavations in the three select areas in Segment 1 designated in the monitoring plan.

**Segment 1/2 - MTBM Launch Shaft Monitoring.** The monitor will be on site intermittently (twice a week) during ground disturbance in the upper fill zones associated with the MTBM Launch Shaft Excavation. When the excavation is at depths where the sand/silt alluvium is identified, archaeological monitoring will be conducted full time. A select subsample of excavated soils will be collected every 10 vertical feet in the sand/silt alluvium will be screened by the monitor.

**Segment 2 – Trenchless Construction Monitoring.** No monitoring is anticipated during microtunneling. Instead, the Design Builder will collect sediment samples every 100 ft in 10, 5-gallon buckets, label the samples by station marker, and stockpile them for later investigation by a third-party Historic Human Remains Detection Dogs (HHRD) contractor hired by the Contractor. The Contractor’s professional archaeologist will coordinate site visits with the HHRDD contractor and be present during the visit. The third party HHRDD Contractor shall submit a report documenting the results of the HHRDD visits. The results of this report will be incorporated into a final monitoring report.

**Air vent Installation Monitoring.** The monitor will be on site full time during excavations for the air vent located in the cloverleaf of I-205 in Segment 2. For the Air vent installation, the monitor will also screen a select subsample every 10 vertical feet of excavated material as specified in the Monitoring Plan.

**Monitoring Report.** After the completion of the monitoring and contingency tasks (if needed), a report documenting the results of monitoring will be drafted. The report will include a map figure showing areas monitored, a description of the activities monitored, and any pertinent observations of the archaeological monitor. The draft report will be submitted for client review prior to submittal to the USACE, CTGR, and SHPO for review, per the requirements of the archaeological excavation permit.

***Segment 1 Assumptions:***

- The monitoring level of effort is based on the provided schedule and assumed rate of excavation progress outlined below. If these assumptions are not met, the level of effort may need to be increased. Monitoring will occur at three separate locations in Segment 1 covering a total of 350 feet. Open trenching will be conducted at a rate of 15 feet per day and require an on-site Monitor for 24 10-hr days.
- It is anticipated that the monitor will be needed for twenty 8-hr days for Segment 1 areas.

***Segment 2 Assumptions:***

- The excavation of the tunnel entrance shaft will take place over two months. The monitor will be on site intermittently during excavation in the fill material (two days for the first 2 week) and full time once the excavation reaches the sand and silt alluvium (assume 2 weeks of full time monitoring at 8-hours a day) with weekly summaries to USACE.
- No monitor will be present during the tunneling activities.
- The monitor will be present to coordinate on-site activities with HHRDD contractor. For each of the three trips, three 8-hour days are assumed.
- The monitoring level of effort is based on the provided schedule and assumed rate of excavation progress outlined below. If these assumptions are not met, the level of effort may need to be increased. Full time monitoring at the microtunnel boring machine entrance shaft is anticipated to take place over the last 10 feet in the sand/silt alluvium and is anticipated to last 10 field days (two weeks).
- Sample collection for HHRDD will be handled by the Design Builder personnel and transported to a secure location for storage.
- The Contractor shall coordinate with the Design Builder and the HHRDD 3<sup>rd</sup> party contractor to schedule site visits.
- Full time monitoring will be needed for two weeks of 8-hour days during excavation of the air vent shaft installation in the I-205 cloverleaf in Segment 2.
- A budget estimate of \$25,000 has been assumed for the 3<sup>rd</sup> party contractor human detection dogs work to complete 3 separate visits required by the USACE permit (assumes 2 visits for the tunneling and 1 visit for the air vent shaft).

***Deliverables***

- Weekly email summaries to USACE and Area Tribes.
- Draft Cultural Resources Monitoring Results Report to the District and Final Cultural Resources Monitoring Results Report to SHPO, USACE, and Area Tribes incorporating District comments
- Applicable GIS data

### **Task 8.1.2 Archaeological Monitoring Contingency Tasks**

The following tasks require owner approval prior to work being to be included and are included as a precaution in case of an inadvertent discovery, or if suitable material for radiocarbon sampling is observed during monitoring of the sand and silt alluvium.

**Inadvertent Discovery.** In the event of an inadvertent discovery of cultural material during open trenching activities, the Monitor will stop work in the vicinity (100 ft) of the find. The lead archaeologist will coordinate with the Area Tribes to assess the find by conducting controlled excavations to delineate and characterize the find. Because the nature of the potential find is unknown, this contingency task includes initial budget to facilitate a quick response. Additional budget for fieldwork or curation may be necessary depending on the nature of the inadvertent discovery.

**Radiocarbon Sample Collections.** If suitable material for radiocarbon sampling is observed in the sand and silt alluvium (e.g. charcoal), up to three samples will be collected by the Monitor and submitted for analysis. The lead archaeologist will coordinate the transmittal of the sample from the field to third party analyst.

#### ***Contingency Task Assumptions***

- up to three radiocarbon samples will be collected and submitted for third party analysis.
- up to two 10-hour days of fieldwork by lead archaeologist and a technician to assess an inadvertent discovery of archaeological material or human remains.

### **Task 8.2 Interpretation of Contract Documents (RFIs)**

Contractor shall issue written clarifications or interpretations of the requirements of the Contract Documents as necessary. Per common construction language, these are called “Requests for Information (RFIs)”. Consultant will coordinate such review with District.

#### ***Assumptions:***

- Assume 20 RFIs will be reviewed at 4 hours per RFI for the design completed by the Design Builder
- Assume 10 RFIs will be reviewed at 4.8 hours per RFI for the Diffuser design completed by the Contractor.

### **Task 8.3 Submittals/Shop Drawing Reviews**

Contractor shall obtain from the Design Builder a proposed shop drawing and submittal schedule, which will identify all shop drawings, samples and submittals required by the contract for construction with the anticipated dates for submission.

Contractor shall review and approve shop drawings and samples required by the Contract Documents and/or as requested by the District. Design Builder is responsible for logging and tracking all shop drawings, samples and submittals. Review of all shop drawings, samples and submittals shall be for general conformance with the design concept and general compliance with the requirements of the contract for construction. Such review shall not relieve the Design Builder from its responsibility for performance in accordance with the contract for construction, nor is such review a guarantee that the work covered by the shop drawings, samples and submittals is free of errors, inconsistencies or omissions.

Contractor’s scope shall be based upon the scope of work in the contract for construction and shall include a maximum of three submissions by the contractor for each shop drawing, sample or submission.

**Assumptions:**

- Assume 26 submittals for Design Builder design will be reviewed under this task at 4 hours per submittal.
- Assume 46 submittals for the Design Builder design identified as “For Information Only” will be reviewed under this task at 1 hour per submittal.
- 15 submittals for the Contractor Diffuser Design and plus 20% resubmittals will be reviewed under this task at 6 hours per submittal.

**Deliverables:**

- Submittal review comments.

**Task 8.4 Construction Meetings and Inspection Support**

**Construction Meetings** - The Contactor shall attend construction meetings to ensure coordination between Design Builder, District and Contractor during the construction phase. Meetings include:

- **Preconstruction Meeting** - Contractor project manager and lead engineer will attend a preconstruction meeting with the Design Builder, Contractor and District at the Project site prior to the commencement of construction.
- **Project Site and Microsoft Teams Meetings** - Contractor shall attend weekly construction coordination meeting with the Design Builder and Owner. Meeting minutes of these meetings are prepared and distributed by the Design Builder. Project engineer shall participate in meetings up to the limit of the budget shown.

**Construction Inspection Support** - Construction support shall be provided for each segment at varying levels. Contractor shall mobilize a team on-site during periods of on-site construction as required by the District to provide site coordination, contract administration and monitor the performance of the Design Builder. Contractor on-site team shall mobilize in the field offices to be provided by the District.

- **Open Cut Construction** – Contractor shall provide one full time staff onsite during open cut construction to observe installation of 90-inch dia pipe in Agnes Avenue. Inspector shall represent District during the construction and provide weekly construction notes and report daily to District lead staff should construction issues arise and need to be discussed with Design Builder and District.
- **Trenchless Construction** – Contractor Trenchless lead shall conduct two site visits from out of town during the tunneled installation but shall not be present onsite for the entire duration of the construction of this segment. Weekly monitoring of the progress shall be done by reviewing progress data shared by the Design Builder to Contractor’s lead trenchless engineer.
- **Diffuser Construction** – Contractor shall be present 5 days a week on marine vessel to inspect installation of the Diffuser in the Willamette River during the in-water work period and for the duration specified in the assumptions.
- **Design Team Visits** - Contractor shall coordinate visits to the site by the design team members to review progress and quality of the work. The visits shall observe the general quality of the work at the time of the visit and review any specific items of work that are brought to the attention of the design team members by the Contractor or the District. Contractor shall provide District 48-hour notice of design team member visit.

**Assumptions:**

- Assume two visits for one out of area lead engineering staff for Segment 1 - Open Cut Construction and two visits for one lead engineering staff for Segment 2 - Trenchless Construction per month on average for the duration of the project.
- Assume Segment 1 – Open Cut Construction shall last 20 weeks (5 months) and 40 hours a week are included for construction inspection and support.
- Assume Segment 2 – Trenchless Construction will last 20 weeks (5 months) and 2 hours a week are included for construction support to review progress. In addition, two 4-day trips are included in the budget for the contractor’s out of area lead trenchless engineer. A total of 40 hours of Engineering are provided to support the District in making decisions related to the trenchless questions during construction.
- Assume Segment 3 – In Water Diffuser Construction will last 8 weeks (2 months) and construction inspection and support include 40 hours a week.

**Deliverables:**

- Weekly construction inspection meeting notes and photos in Procore.

**Task 8.5 Construction Contract Administration**

**Document Management System and Procedures** – The Design builder is responsible to establish a system and set of procedures for managing, logging, tracking and storing all relevant correspondence between the Design Builder, Contractor, and District and documents produced during the project. The Contractor, in coordination with the District, shall verify that the system and procedures outlined are maintained during the duration of construction to maintain suitably organized, of relevant documentation. The Contractor shall assist the District in monitoring all outstanding decisions, approvals or responses required from the District.

**Payments to Contractor** - Contractor shall review the Design Builder’s monthly requests for payment. Contractor shall determine whether the amount requested reflects the progress of the Design Builder’s work and is in accordance with the contract for construction.

Contractor shall provide recommendations to the District as to the acceptability of the requests. Contractor shall advise the District as to the status of the total amounts requested, paid and remaining to be paid under the terms of the contract for construction. Contractor’s knowledge, information and belief from its observations of the work on site and selected sampling that the work has progressed to the point indicated. Such recommendations do not represent that continuous or detailed examinations have been made by Contractor to ascertain that the Design Builder has completed the work in exact accordance with the contract for construction; that Contractor has made an examination to ascertain how or for what purpose the contractor has used the moneys paid; that title to any of the work, materials or equipment has passed to the District free and clear of liens, claims, security interests or encumbrances.

**Assumptions:**

- The level of effort includes an allowance of 4 hours a month for contractor invoice review and 2 hours a month for Document Management a construction duration of 18 months for this task.

**Deliverables:**

- Payment recommendation, written communication to the District.

**Task 8.6 Support and Review Contract Changes**

Contractor shall assist the District with issuance of changes to the contract for construction.

**Defective Work** - Contractor shall support the District to disapprove or reject work which Contractor believes to be defective, or that Contractor believes shall not produce a completed Project that conforms to the Contract Documents or that shall impact the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

**Minor Variations in Work** - Contractor will support the District with Design Builder requests to authorize minor variations in the work from the requirements of the Contract Documents which do not involve an adjustment in the contract price or the contract times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

**Coordinate Issuances of Changes** - Contractor shall assist the District with the issuance of changes to the contract for construction. Contractor shall receive and review the Design Builder's request for change including cost, construction schedule, duration and completion date and shall obtain such further information as is necessary to evaluate the basis for the proposal. Contractor shall assist the District with negotiations of the proposal for execution by the District and contractor.

Contractor shall review all contractor-related changes to the contract for construction including impact on cost, construction schedule, duration and completion date. Contractor shall make recommendations to the District regarding the acceptability of the contractor's request and, upon agreement and approval, Contractor shall prepare change order documents.

**Contractor's Schedule Updates** - Contractor shall review the Design Builder's periodic schedule updates or other schedule submissions. Contractor shall advise the District if the updates or other submissions are not in accordance with the contract for construction. Contractor shall provide comments to the District regarding the updates or other submissions.

**Contract Compliance** - Contractor shall advise the District regarding the Design Builder's compliance with the contract requirements for potential claims and disputes. Contractor shall assist the District in discussions with the Design Builder to resolve claims and disputes and issue recommendations on contractor claims or disputes. Contractor shall not, except as part of Additional Services, participate in judicial or alternative dispute resolution procedures for the claims or disputes.

***Assumptions:***

- The level of effort includes an allowance of 120 hours for this subtask for the duration of construction.

***Deliverables:***

- Written documentation related to defective work notices, potential claims or disputes and/or work change directives.

**Task 8.7 Pre-Construction Bathymetric Survey Verification**

A pre-construction bathymetric survey will be conducted by Contractor's Sub-consultant AKS to document river bottom elevations prior to work in the Willamette River at the location of the diffuser and to assess how river bottom elevations have changed post ODOT Abernethy Bridge construction. Contractor will coordinate bathymetric survey activities and process data received to overlay new river bottom surface elevations with diffuser plan and profile drawings from Final Design.

***Deliverables:***

- Bathymetry pdf and files with overlay of new river bottom elevation on Diffuser Design Profile.

## **Task 8.8 Conformed Documents**

The Contractor shall prepare conformed drawings of the diffuser design to update final elevations of the risers, and to capture final flange gasket information, bolt torque information and other approved changes during construction. The drawings shall also reflect the updated bathymetric survey profile at the diffuser location.

### ***Deliverables:***

- Final conformed diffuser design drawings.

## **Task 9 Outfall Improvements and Mixing Zone Study [Phase 3]**

The Outfall Improvements and Mixing Zone Study will document the improvements of the replacement Tri-City WRRF outfall and diffuser. This study is designed to demonstrate and document the dilutions provided by the replacement and improved outfall diffuser and to validate the model-predicted design dilutions for the improved outfall diffuser structure. In addition, this study report will include a detailed assessment of the Tri-City WRRF wastewater discharge compliance with Oregon Water Quality Standards.

The study will be planned and conducted to meet the technical requirements for performing outfall mixing zone studies defined in DEQ's Regulatory Mixing Zone Internal Management Directive (RMZ-IMD) (DEQ, May 2012 and June 2013).

### **Task 9.1 Outfall Mixing Zone Study Plan and Safety Plan**

A detailed Outfall Mixing Study Plan will be developed for submittal to DEQ for approval prior to the field and modeling study. The study plan will define the approach and methodologies for the field tracer study and dilution modeling of the replacement outfall diffuser. Dilution modeling will cover the field study conditions under low river flows and seasonal 7Q10 low and wet season river flow conditions. The study plan will specify the objectives and approach, data to be collected, quality control and quality assurance procedures, and field dilution study process and results. The draft study plan will be provided to the District for review. The final Outfall Mixing Zone Study Plan will be completed following receipt of comments from the District and a MT teleconference review. The District will submit the Outfall Mixing Zone Study Plan to DEQ for approval. Response to DEQ's comments on the Study Plan will be prepared, as necessary.

### ***Assumptions:***

- Study plan will be prepared to allow submittal to DEQ in June 2025, so that approval is secured, and the field tracer performance study can be conducted in September- October 2025 (immediately following construction), or in September-October 2026 under low river flow conditions.

### ***Deliverables:***

- Draft and Final Outfall Mixing Study Plan incorporating District comments for submittal to DEQ

### **Task 9.2 Field Measurements & Tracer Study**

Field study preparations will include planning meetings and discussions, preparation of a field operations plan, and securing field study equipment. The Contractor shall also prepare a concise Field Operations Plan that defines work activities, communications, site access and security, work areas, and field schedule. The draft Field Operations Plan will be shared with the District for review prior to the field work. A planning meeting will be held at the WRRF to review site-specific conditions at the WRRF, dye injection and initial measurement sites, safety and logistical plans for the field study, and the draft Field Operations Plan.



Contractor shall require access to the WRRF for instruments setup and calibrations and for dye tracer injection setup and operation. During Pre-Study Planning, Contractor shall secure field equipment and instruments and Rhodamine WT dye will be ordered for the study.

The Contractor shall conduct a field mixing performance test of the Tri City WRRF outfall diffuser during low river flow conditions in either late September or October 2025 or 2026. The field study will be conducted during a five-day period using a team experienced with outfall tracer studies, and the study will include specific QA/QC activities. The field study will include simultaneous measurements of ambient current speed and direction, water depth, and tracer dye during a period that corresponds with low river stage. Dye will be injected into the Tri City WRRF effluent and measured in the river over 8-10 hours (limited by daylight hours). The focal points for in-stream dye measurements will be the defined acute and chronic mixing zone boundaries downstream from the diffuser.

The Contractor shall provide all instruments for the study including two Aquadopp current meters, SeaBird SBE-19 water quality instruments, Turner Designs Model 10-AU fluorometers and SCUFA fluorometers, and injection and sample pumps. The tracer, Rhodamine WT dye, will be purchased for the study. One survey vessel with DGPS will be contracted from AKS to provide the work vessel for instrument installations, tracer sampling, and site-specific field measurements, as well as sampling navigation. Horizontal positions for the sampling navigation will be determined using real-time GPS data or may require installation of a Trimble RTK-GNSS base and rover system deployed at the Tri City WRRF survey control site, as used by AKS for previous bathymetry surveys.

Prior to the field dye test, The Contractor shall install cabled buoy systems upstream of the diffuser for in-situ continuous measurements during the field test. The field study will include the following activities: setup and calibrate the dye injection, fluorometer calibration and testing, installation and retrieval of instruments in the river, water column measurements of dye, temperature, and conductivity during daylight hours, data download from instruments, and the post-study instrument calibrations. These data collections will be used to define the range of effluent concentrations (dilutions) at the acute and chronic mixing zone boundaries.

Following the completion of the field study, the collected field data will be developed and summarized to represent the plume within and at the mixing zone boundaries. The dye tracer study field data will be analyzed and summarized, and these data will be used in verification of the dilution modeling and in study report development.

### **Task 9.3 Data Analysis and Environmental Mapping**

The Contractor shall compile, analyze, and summarize the extensive field measurements recorded during the field study. These data sets include the ambient current meter records, dye tracer study measurements in the water column, DGPS position records, and effluent initial dye and flow and temperature records. The dye tracer study data will be analyzed and summarized into tabular and graphical forms to represent the field-measured tracer plume at the acute and chronic mixing zone boundaries. These data will be used in the selection of dilution models and validation of the dilution modeling and presented in the study report.

Effluent flow and temperature data during the field tracer study will be compiled for use in modeling to compare to field-measured dilutions. The river current data collected will be compiled and analyzed to define ambient current velocities at the Outfall 002 diffuser during the field study for the specific tidal conditions, and these data will be employed in the modeling to compare to field-measured dilutions. Dye tracer study field-measured dilutions will be used in dilution modeling to compare to dilution modeling results for different models to allow for selection of the best model to represent the field-measured dilutions for the field study conditions. Willamette River flows and stage statistics will be calculated for the dry season (May-October) and the wet season (November-April), and these statistics will include 1Q10 and 7Q10 low river flow, 30Q5 flow, and harmonic mean flow, as well as the wet



season average “off-design” flow condition (March-May). These dry and wet season river flow statistics will provide model inputs along with associated dry and wet season effluent flows (as defined in the RMZ-IMD and the Study Plan). The hydraulic model FlowMaster will be used to calculate predicted Willamette River stages for the dry and wet season flow statistics.

The Contractor shall also obtain information to develop plan-view maps that depict environmental information near the Tri City WRRF outfall diffuser in the Willamette River to meet the requirements defined in the DEQ RMZ-IMD. These environmental maps and supporting documentation will include information on the following elements within one-half mile radius of the Outfall 002 diffuser:

- Physical structures – develop based on existing maps and outfall field study;
- Other NPDES discharges (with ½ mile) – based on DEQ database and shoreline photos.
- Drinking water intakes -- develop based on existing maps and data;
- Threatened & Endangered Species - presence, habitat, and migration pathways (based on materials developed for the Willamette River);
- Fish spawning/rearing habitat (based on Oregon Dept. of Fish and Wildlife maps);
- Cold water refugia (based on DEQ and Oregon Dept. of Fish and Wildlife studies); and
- Public parks and public water uses within one-half mile radius of Outfall 002.

#### **Task 9.4 Dilution Modeling**

Modeling will be used to predict wastewater dilutions and temperatures for the field-measured conditions (river flow during dye tracer study) and for the seasonal critical river flow conditions defined in the RMZ-IMD. The dilution and plume behavior will be predicted using the selected model, either Visual Plumes (UDKHW or UM3) or CORMIX2. The focal points for dilution modeling results will be acute and chronic mixing zone boundaries in accordance with the study plan agreement with DEQ. Dilution modeling will be developed to represent the same conditions as the dye tracer study and seasonal critical river flow conditions defined in DEQ’s guidance for determine dilutions under critical receiving water conditions – as defined in the RMZ-IMD for effluent flows and river flow conditions.

Measured receiving water and effluent conditions will be used in the dilution modeling to represent the field-measured conditions and to “calibrate” the model predictions. After modeling the field-measured condition, the model that provides the most accurate representation of the field-measured dilutions will be applied for subsequent dilution modeling of seasonal low river flow conditions. The comparison of model-predicted versus field-measured dilutions will also be summarized in the report.

The river flows and stage statistics to apply include the dry season (May-October) and the wet season (November-April), and these statistics will include 1Q10 and 7Q10 low river flow, 30Q5 flow, and harmonic mean flow, as well as the wet season average “off-design” flow condition (March-May). These dry and wet season river flow statistics will provide model inputs along with associated dry and wet season effluent flows (as defined in the RMZ-IMD and the Study Plan).

Model inputs will also include effluent flow and temperature data and seasonal receiving water temperature data. Three years of effluent flow and temperature data will be provided for the WRRF discharges for use in the dilution modeling. In addition to existing effluent flows, projected dry and wet season effluent flows (maximum day flow, maximum monthly flow, and annual average flow) for 2030 and 2040 (based on the Tri City WRRF Facility Plan) will be used in dilution modeling. Dilution modeling analyses will be developed to be consistent with guidance in the DEQ’s RMZ-IMD. Dilution modeling results will be summarized into tabular and graphical forms, and model input and output will be included in the report appendix.

## **Task 9.5 Study Report and Meetings**

Draft and final dilution performance mixing study reports will be prepared based on the results of the field tracer study, dilution modeling, and updated effluent and receiving water data. The draft final report will be prepared for review by the District. This report will summarize the results of the field data collections, diffuser dilution performance measurements, dilution modeling, and an assessment of the attainment of water quality standards. Water column measurements of dye concentrations, temperatures, and current speeds will be summarized in graphical and tabular formats. The comparison of model-predicted dilutions to field-measured dilutions will be summarized in the report, along with the basis for the dilution model selection. The dilution modeling will be summarized in the report and model input and output will be in report appendices.

An environmental mapping section will be included in the report to summarize the findings developed in accordance with the RMZ-IMD guidance. Reasonable potential analyses (RPA) will be developed for ammonia and toxic chemicals based on water quality criteria for the protection of aquatic life and for toxic chemicals based on water quality criteria for the protection of human health. These RPAs will be prepared using Tri City WRRF effluent chemistry data and available background river chemistry data. Analyses will be prepared to determine and document that the Outfall 002 discharges meet water quality standards for temperature and thermal plumes limitations, as defined in the Oregon Water Quality Standards.

The Outfall Improvements and Mixing Zone Study Report will be prepared to summarize the modifications completed to the Tri-City WRRF outfall and the results of the field and modeling of the improved outfall diffuser. The report will include as-built drawings and the post-construction dive inspection report. If a post-construction bathymetry survey is performed, then it will also be included in this report.

### **Assumptions:**

- Draft report will be provided to the District for review by January 2026 (if field study is conducted in fall 2025) or by January 2027 (if the field study is conducted in fall 2026).
- A Teams meeting will be held with the District to review the results presented in the draft report and discuss comments.

### **Deliverables:**

- Draft and Final Report incorporating District comments.

Tri City Water Resource Recovery Facility (WRRF) Willamette River Outfall  
 Clackamas County, Water Environmental Services (WES)  
 Level of Effort Estimate Summary - Amendment 2

Task No.	Task/Subtask	Initial Contract	Amendment 1	Amendment 2	Budget Return	Amendment 2 With Budget Return	Revised Total Project
<b>1.0</b>	<b>Project Management</b>	\$ 41,600	\$ 75,839	\$ 105,440	\$ (37,000)	\$ 68,440	\$ 185,879
	External Progress Meetings and Updates	\$ 9,200	\$ -				\$ 9,200
	Project Execution Plan	\$ 2,760	\$ -				\$ 2,760
	Schedule Development and Internal Project Controls	\$ 3,800	\$ -				\$ 3,800
	Project Change	\$ 10,840	\$ -				\$ 10,840
	Internal Project Team Management and Direction	\$ 15,000	\$ -				\$ 15,000
	Internal Project Team Management and Direction - Phase 2		\$ 75,839				\$ 75,839
	Internal Project Team Management and Direction - Phase 3			\$ 105,440			\$ 105,440
<b>2.0</b>	<b>Owner's Advisor Services</b>	\$ 112,534	\$ 384,654	\$ -	\$ (123,000)	\$ (123,000)	\$ 374,089
2.1	Design Builder Qualification Based Selection	\$ -	\$ -				\$ -
2.1.1A	Draft RFO and with Procurement Documents	\$ 33,171	\$ -				\$ 33,171
2.1.1B	Draft Contract Preparation	\$ 14,018	\$ -				\$ 14,018
2.1.2	Procurement and Selection	\$ 37,571	\$ -				\$ 37,571
2.1.3	Final Contract Preparation	\$ 27,775	\$ -				\$ 27,775
2.2	Owner Representative Services during construction	\$ -	\$ -				\$ -
2.2.1	Scope Compliance Review		\$ 190,792				\$ 190,792
2.2.2	Cost Estimate		\$ 79,888				\$ 79,888
2.2.3	GMP Negotiations		\$ 27,748				\$ 27,748
2.2.4	Risk Management		\$ 51,185				\$ 51,185
2.2.5	Contract Meetings		\$ 34,941				\$ 34,941
<b>3.0</b>	<b>Permitting</b>	\$ 263,759	\$ 82,678		\$ (50,000)	\$ (50,000)	\$ 296,437
3.1	Permitting Coordination	\$ -	\$ -				\$ -
3.1.1	Track Permit Status	\$ 8,004	\$ -				\$ 8,004
3.1.2	Client Permitting Meetings	\$ 26,989	\$ -				\$ 26,989
3.1.3	Pre-Application Agency Meetings	\$ 12,475	\$ -				\$ 12,475
3.1.4	Development of Project Narratives to Support Permit Applications	\$ 28,203	\$ 6,803				\$ 35,006
3.1.5	Design Meetings to Align project Permitting Team		\$ 9,200				\$ 9,200
3.2	Federal Permits	\$ -	\$ -				\$ -
3.2.1	Supporting Reports for Agency Concurrence (DSL/SHPO)	\$ 11,587	\$ -				\$ 11,587
3.2.2	Sediment Conditions	\$ 21,068	\$ -				\$ 21,068
3.2.3	Clean Water Act Section 404 Dredge/Fill (Corps)	\$ 33,335	\$ -				\$ 33,335
3.2.4	Rivers & Harbors Act 33 USC 408 (Corps)	\$ 5,057	\$ -				\$ 5,057
3.2.5	Endangered Species Act Section 7 and Magnuson-Stevens Act Consultation (NMFS & USFWS)	\$ 60,645	\$ -				\$ 60,645
3.3	State Permits	\$ -	\$ -				\$ -
3.3.1	Wetland Removal-Fill (DSL)	\$ 12,349	\$ -				\$ 12,349
3.3.2	Clean Water Act Section 401 Water Quality Certification (Corps/DEQ)	\$ 15,979	\$ -				\$ 15,979
3.3.3	Utility Easement for State-Owned Submerged Lands (DSL)	\$ 15,964	\$ -				\$ 15,964
3.3.4	Short Term Agreement (DSL)		\$ 10,944				\$ 10,944
3.3.5	SHPO Permitting Requirements		\$ 19,767				\$ 19,767
3.4	City of Oregon City Permits	\$ -	\$ -				\$ -
3.4.1	OC Code Assessment and Pre-Application Conference	\$ 12,106	\$ -				\$ 12,106
3.4.2	ROW License Support		\$ 3,500				\$ 3,500
3.4.3	Oregon City Land Use Development Permit Package		\$ 32,465				\$ 32,465
<b>4.0</b>	<b>Public Involvement and Outreach Support</b>	\$ 15,000	\$ 37,820		\$ (8,000)	\$ (10,000)	\$ 44,820
4.1	Public Involvement and Outreach Plan and General Coordination	\$ 3,610	\$ 3,255				\$ 6,865
4.2	Assist with Open House(s) and Project Tours	\$ 3,840	\$ 7,455				\$ 11,295
4.3	Provide Focussed Outreach	\$ 7,550	\$ 5,355				\$ 12,905
4.4	Website Updates, Educational Videos, Fact Sheet and Newsletter Articles		\$ 21,755				\$ 21,755
<b>5.0</b>	<b>Quality Management</b>	\$ 14,440	\$ 15,681		\$ (28,740)	\$ (28,740)	\$ 1,381
5.0-P1	Quality Management - Phase 1	\$ 14,440	\$ -				\$ 14,440
5.0-P2	Quality Management - Phase 2		\$ 15,681				\$ 15,681
<b>6.0</b>	<b>Environmental Studies</b>	\$ 15,135	\$ -		\$ (15,000)	\$ (15,000)	\$ 135
6.1	Phase 1 ESA	\$ 15,135	\$ -				\$ 15,135
<b>7.0</b>	<b>Diffuser Design</b>	\$ -	\$ 195,996	\$ 119,992	\$ -	\$ 119,992	\$ 315,988
7.1	30% Design		\$ 90,915				\$ 90,915
7.2	90% Design		\$ 61,131				\$ 61,131
7.3	Final Design		\$ 43,949				\$ 43,949
7.4	Additional Design			\$ 40,703			\$ 40,703
7.5	Property Acquisition (Epic Land Solutions)			\$ 79,289			\$ 79,289
<b>8.0</b>	<b>Services During Construction</b>	\$ -	\$ -	\$ 669,738		\$ 669,738	\$ 669,738
8.1	Archaeological Monitoring Activities			\$ 150,067			\$ 150,067
8.2	Submittals and RFIs			\$ 40,220			\$ 40,220
8.3	Construction Inspection Support			\$ 64,606			\$ 64,606
8.4	Construction Meetings and Inspection Support			\$ 329,666			\$ 329,666
	Weekly Construction and Coordination Meetings			\$ 47,920			\$ 47,920
	Construction Inspection Support Segment 1 - Open Cut			\$ 163,176			\$ 163,176
	Construction Inspection Support Segment 2 - Trenchless			\$ 52,480			\$ 52,480
	Construction Inspection Support Segment 3 - Diffuser			\$ 66,089			\$ 66,089
8.5	Construction Contract Administration			\$ 27,531			\$ 27,531
8.6	Support and Review Contract Changes			\$ 32,800			\$ 32,800
8.7	Pre-Construction Bathymetric Survey Verification			\$ 16,212			\$ 16,212
8.8	Conformed Drawings			\$ 8,637			\$ 8,637
<b>9.0</b>	<b>Outfall Mixing Zone Study</b>	\$ -	\$ -	\$ 172,621		\$ 172,621	\$ 172,621
9.1	Mixing Zone Study Plan			\$ 4,582			\$ 4,582
9.2	Field Measurements and Tracer Study			\$ 80,810			\$ 80,810
9.3	Data Analysis and Environmental Mapping			\$ 18,586			\$ 18,586
9.4	Dilution Modeling			\$ 23,786			\$ 23,786
9.5	Study Report, Meetings			\$ 44,856			\$ 44,856
	<b>Total Project</b>	\$ 462,468	\$ 792,567	\$ 1,067,791	\$ (261,740)	\$ 806,051	\$ 2,061,086