



July 20, 2023

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

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

**Approval of Personal Services Contract with Carollo Engineers, Inc., for engineering services for the Tri-City Water Resource Recovery Facility Influent Pump Station Expansion Project. Contract value is \$1,699,131. Funding through Water Environment Services Sanitary Sewer Construction Fund. No County General Funds are involved.**

<b>Previous Board Action/Review</b>	Presented at Issues – July 18, 2023.		
<b>Performance Clackamas</b>	<ol style="list-style-type: none"> <li>1. This project supports the WES Strategic Plan to provide Enterprise Resiliency, Infrastructure Strategy and Performance and Operational Optimization.</li> <li>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.</li> </ol>		
<b>Counsel Review</b>	Yes	<b>Procurement Review</b>	Yes
<b>Contact Person</b>	Steven Rice	<b>Contact Phone</b>	971-284-3710

**EXECUTIVE SUMMARY:** The recently completed Willamette Facilities Plan charted a 20-year path forward for WES’ Water Resource Recovery Facilities (WRRFs) that discharge to the Willamette River, including the Tri-City WRRF. The Tri-City WRRF Influent Pump Station (IPS), which is original to the 1985 construction of the facility, pumps flow that arrives from the sanitary sewer collection system by gravity to the influent screening channel for subsequent treatment through the facility. The Facilities Plan identified both a need for condition-based upgrades to the aging IPS, as well as an immediate and long-term need for expansion of the pumping capacity to accommodate anticipated growth in the service area.

Following a competitive selection process, WES has selected Carollo Engineers to serve as the design consultant for the project. The design phase of the project will include selection of new pumps and drives sized for projected 2040 influent flows, based on the collection system master planning (Jacobs 2019). Wet well hydraulics will be evaluated using modeling to determine if modifications are required to accommodate future higher influent flows. Pump station mechanical, electrical, and control systems will be evaluated for potential up-sizing or replacement due to condition. Bid-ready design documents will be developed for recommended

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improvements, and the project will be competitively bid to select a contractor to construct the project. Additional services, such as construction administration, inspection, or start-up support may be added by future amendment. Contract set to expire December 31, 2025.

**RECOMMENDATION:** Staff recommends the Board approve Contract #8002 with Carollo Engineers, Inc for the Tri-City Water Resource Recovery Facility Influent Pump Station Expansion Project.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Greg Geist", with a long horizontal flourish extending to the right.

Greg Geist  
Director, WES

Attachment: Contract #8002



**WATER ENVIRONMENT SERVICES  
PERSONAL SERVICES CONTRACT  
Contract #8002**

This Personal Services Contract (this “Contract”) is entered into between **Carollo Engineers, Inc.**, (“Contractor”), and Water Environment Services, a political subdivision of the State of Oregon (“District”).

**ARTICLE I.**

- 1. Effective Date and Duration.** This Contract shall become effective upon signature of both parties. Unless earlier terminated or extended, this Contract shall expire on **December 31, 2025**.
- 2. Scope of Work.** Contractor shall provide engineering services necessary for the Tri-City Water Resource Recovery Facility Influent Pump Station Expansion Project (“Work”), further described in **Exhibit A**.
- 3. Consideration.** The District agrees to pay Contractor, from available and authorized funds, a sum not to exceed **One Million Six Hundred Ninety-Nine Thousand One Hundred Thirty-One Dollars (\$1,699,131.00)**, for accomplishing the Work required by this Contract. Consideration rates are on a time and materials basis in accordance with the rates and costs specified in Exhibit B. If any interim payments to Contractor are made, such payments shall be made only in accordance with the schedule and requirements in **Exhibit B**.
- 4. Invoices and Payments.** Unless otherwise specified, Contractor shall submit monthly invoices for Work performed. Invoices shall describe all Work performed with particularity, by whom it was performed, and shall itemize and explain all expenses for which reimbursement is claimed. The invoices shall include the total amount billed to date by Contractor prior to the current invoice. If Contractor fails to present invoices in proper form within sixty (60) calendar days after the end of the month in which the services were rendered, Contractor waives any rights to present such invoice thereafter and to receive payment therefor. Payments shall be made in accordance with ORS 293.462 to Contractor following the District’s review and approval of invoices submitted by Contractor. Contractor shall not submit invoices for, and the District will not be obligated to pay, any amount in excess of the maximum compensation amount set forth above. If this maximum compensation amount is increased by amendment of this Contract, the amendment must be fully effective before Contractor performs Work subject to the amendment.

Invoices shall reference the above Contract Number and be submitted to: [SRice@clackamas.us](mailto:SRice@clackamas.us)

- 5. Travel and Other Expense.** Authorized:  Yes  No  
If travel expense reimbursement is authorized in this Contract, such expense shall only be reimbursed at the rates in the Clackamas County Contractor Travel Reimbursement Policy, hereby incorporated by reference and found at: <https://www.clackamas.us/finance/terms.html>. Travel expense reimbursement is not in excess of the not to exceed consideration.
- 6. Contract Documents.** This Contract consists of the following documents, which are listed in descending order of precedence and are attached and incorporated by reference, this Contract, Exhibit A, and Exhibit B.

## 7. Contractor and District Contacts.

Contractor	District
Administrator: Dan Laffitte, PE Phone: 503-290-2817 Email: <a href="mailto:DLaffitte@carollo.com">DLaffitte@carollo.com</a>	Administrator: Steven Rice Phone: 971-284-3710 Email: <a href="mailto:SRice@clackamas.us">SRice@clackamas.us</a>

Payment information will be reported to the Internal Revenue Service (“IRS”) under the name and taxpayer ID number submitted. (See I.R.S. 1099 for additional instructions regarding taxpayer ID numbers.) Information not matching IRS records will subject Contractor payments to backup withholding.

## ARTICLE II.

- 1. ACCESS TO RECORDS.** Contractor shall maintain books, records, documents, and other evidence, in accordance with generally accepted accounting procedures and practices, sufficient to reflect properly all costs of whatever nature claimed to have been incurred and anticipated to be incurred in the performance of this Contract. District and their duly authorized representatives shall have access to the books, documents, papers, and records of Contractor, which are directly pertinent to this Contract for the purpose of making audit, examination, excerpts, and transcripts. Contractor shall maintain such books and records for a minimum of six (6) years, or such longer period as may be required by applicable law, following final payment and termination of this Contract, or until the conclusion of any audit, controversy or litigation arising out of or related to this Contract, whichever date is later.
- 2. AVAILABILITY OF FUTURE FUNDS.** Any continuation or extension of this Contract after the end of the fiscal period in which it is written is contingent on a new appropriation for each succeeding fiscal period sufficient to continue to make payments under this Contract, as determined by the District in its sole administrative discretion.
- 3. CAPTIONS.** The captions or headings in this Contract are for convenience only and in no way define, limit, or describe the scope or intent of any provisions of this Contract.
- 4. COMPLIANCE WITH APPLICABLE LAW.** Contractor shall comply with all applicable federal, state and local laws, regulations, executive orders, and ordinances, as such may be amended from time to time.
- 5. COUNTERPARTS.** This Contract may be executed in several counterparts (electronic or otherwise), each of which shall be an original, all of which shall constitute the same instrument.
- 6. GOVERNING LAW.** This Contract, and all rights, obligations, and disputes arising out of it, shall be governed and construed in accordance with the laws of the State of Oregon and the ordinances of Clackamas County without regard to principles of conflicts of law. Any claim, action, or suit between District and Contractor that arises out of or relates to the performance of this Contract shall be brought and conducted solely and exclusively within the Circuit Court for Clackamas County, for the State of Oregon. Provided, however, that if any such claim, action, or suit may be brought in a federal forum, it shall be brought and conducted solely and exclusively within the United States District Court for the District of Oregon. In no event shall this section be construed as a waiver by the District of any form of defense or immunity, whether sovereign immunity, governmental immunity, immunity based on the Eleventh Amendment to the Constitution of the United States or otherwise, from any claim or from the jurisdiction of any court. Contractor, by execution of this Contract, hereby consents to the personal jurisdiction of the courts referenced in this section.

**7. INDEMNITY, RESPONSIBILITY FOR DAMAGES.** Contractor shall be responsible for all damage to property, injury to persons, and loss, expense, inconvenience, and delay which may be caused by, or result from, any negligent act, omission, or error of Contractor, its subcontractors, agents, or employees. The Contractor agrees to indemnify and defend the District and Clackamas County, and their officers, elected officials, agents and employees from and against all claims, actions, losses, liabilities, including reasonable attorney and accounting fees, and all expenses incidental to the investigation and defense thereof, arising out of or based upon Contractor’s negligent acts or omissions in performing under this Contract.

However, neither Contractor nor any attorney engaged by Contractor shall defend the claim in the name of District or Clackamas County (“County”), purport to act as legal representative of District or County, or settle any claim on behalf of District or County, without the approval of the Clackamas County Counsel’s Office. District or County may assume their own defense and settlement at their election and expense.

**8. INDEPENDENT CONTRACTOR STATUS.** The service(s) to be rendered under this Contract are those of an independent contractor. Although the District reserves the right to determine (and modify) the delivery schedule for the Work to be performed and to evaluate the quality of the completed performance, District cannot and will not control the means or manner of Contractor’s performance. Contractor is responsible for determining the appropriate means and manner of performing the Work. Contractor is not to be considered an agent or employee of District for any purpose, including, but not limited to: (A) The Contractor will be solely responsible for payment of any Federal or State taxes required as a result of this Contract; and (B) This Contract is not intended to entitle the Contractor to any benefits generally granted to District employees, including, but not limited to, vacation, holiday and sick leave, other leaves with pay, tenure, medical and dental coverage, life and disability insurance, overtime, Social Security, Workers' Compensation, unemployment compensation, or retirement benefits.

**9. INSURANCE.** Contractor shall secure at its own expense and keep in effect during the term of the performance under this Contract the insurance required and minimum coverage indicated below. The insurance requirements outlined below do not in any anyway limit the amount of scope of liability of Contractor under this Contract. Contractor shall provide proof of said insurance and name the District and Clackamas County as an additional insureds on all required liability policies. Proof of insurance and notice of any material change should be submitted to the following address: Clackamas County Procurement Division, 2051 Kaen Road, Oregon City, OR 97045 or [procurement@clackamas.us](mailto:procurement@clackamas.us).

Required - Workers Compensation: Contractor shall comply with the statutory workers’ compensation requirements in ORS 656.017, unless exempt under ORS 656.027 or 656.126.
<input checked="" type="checkbox"/> Required – Commercial General Liability: combined single limit, or the equivalent, of not less than \$1,000,000 per claim, with an annual aggregate limit of \$2,000,000 for Bodily Injury and Property Damage.
<input checked="" type="checkbox"/> Required – Professional Liability: combined single limit, or the equivalent, of not less than \$1,000,000 per occurrence, with an annual aggregate limit of \$2,000,000 for damages caused by error, omission or negligent acts.
<input checked="" type="checkbox"/> Required – Automobile Liability: combined single limit, or the equivalent, of not less than \$1,000,000 per accident for Bodily Injury and Property Damage.

The policy(s) shall be primary insurance as respects to the District. Any insurance or self-insurance maintained by the District shall be excess and shall not contribute to it. Any obligation that District agree to a waiver of subrogation is hereby stricken.

- 10. LIMITATION OF LIABILITIES.** This Contract is expressly subject to the debt limitation of Oregon counties set forth in Article XI, Section 10, of the Oregon Constitution, and is contingent upon funds being appropriated therefore. Any provisions herein which would conflict with law are deemed inoperative to that extent. Except for liability arising under or related to Article II, Section 13 or Section 20, neither party shall be liable for (i) any indirect, incidental, consequential or special damages under this Contract or (ii) any damages of any sort arising solely from the termination of this Contract in accordance with its terms.
- 11. NOTICES.** Except as otherwise provided in this Contract, any required notices between the parties shall be given in writing by personal delivery, email, or mailing the same, to the Contract Administrators identified in Article 1, Section 6. If notice is sent to District, a copy shall also be sent to: Clackamas County Procurement, 2051 Kaen Road, Oregon City, OR 97045, or [procurement@clackamas.us](mailto:procurement@clackamas.us). Any communication or notice so addressed and mailed shall be deemed to be given five (5) days after mailing, and immediately upon personal delivery, or within 2 hours after the email is sent during District's normal business hours (Monday – Thursday, 7:00 a.m. to 6:00 p.m.) (as recorded on the device from which the sender sent the email), unless the sender receives an automated message or other indication that the email has not been delivered.
- 12. OWNERSHIP OF WORK PRODUCT.** All work product of Contractor that results from this Contract (the "Work Product") is the exclusive property of District. District and Contractor intend that such Work Product be deemed "work made for hire" of which District shall be deemed the author. If for any reason the Work Product is not deemed "work made for hire," Contractor hereby irrevocably assigns to District all of its right, title, and interest in and to any and all of the Work Product, whether arising from copyright, patent, trademark or trade secret, or any other state or federal intellectual property law or doctrine. Contractor shall execute such further documents and instruments as District may reasonably request in order to fully vest such rights in District. Contractor forever waives any and all rights relating to the Work Product, including without limitation, any and all rights arising under 17 USC § 106A or any other rights of identification of authorship or rights of approval, restriction or limitation on use or subsequent modifications. Notwithstanding the above, District shall have no rights in any pre-existing Contractor intellectual property provided to District by Contractor in the performance of this Contract except to copy, use and re-use any such Contractor intellectual property for District use only.
- 13. REPRESENTATIONS AND WARRANTIES.** Contractor represents and warrants to District that (A) Contractor has the power and authority to enter into and perform this Contract; (B) this Contract, when executed and delivered, shall be a valid and binding obligation of Contractor enforceable in accordance with its terms; (C) Contractor shall at all times during the term of this Contract, be qualified, professionally competent, and duly licensed to perform the Work; (D) Contractor is an independent contractor as defined in ORS 670.600; and (E) the Work under this Contract shall be performed in accordance with the standard of professional skill and care required for a project of similar size, location, scope, and complexity, during the time in which the Work is being performed. The warranties set forth in this section are in addition to, and not in lieu of, any other warranties provided. The Contractor shall be responsible for the technical accuracy of its services and documents resulting therefrom, and District shall not be responsible for discovering deficiencies therein. The Contractor shall correct such deficiencies without additional compensation except to the extent such action is directly attributable to deficiencies in information furnished by the District.
- 14. SURVIVAL.** All rights and obligations shall cease upon termination or expiration of this Contract, except for the rights and obligations set forth in Article II, Sections 1, 6, 7, 10, 12, 13, 14, 15, 17, 20, 21, 25, 27, and 29, and all other rights and obligations which by their context are intended to survive. However, such expiration shall not extinguish or prejudice the District's right to enforce this Contract

with respect to: (a) any breach of a Contractor warranty; or (b) any default or defect in Contractor performance that has not been cured.

- 15. SEVERABILITY.** If any term or provision of this Contract is declared by a court of competent jurisdiction to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Contract did not contain the particular term or provision held to be invalid.
- 16. SUBCONTRACTS AND ASSIGNMENTS.** Contractor shall not enter into any subcontracts for any of the Work required by this Contract, or assign or transfer any of its interest in this Contract by operation of law or otherwise, without obtaining prior written approval from the District, which shall be granted or denied in the District's sole discretion. In addition to any provisions the District may require, Contractor shall include in any permitted subcontract under this Contract a requirement that the subcontractor be bound by this Article II, Sections 1, 7, 8, 13, 16, and 27 as if the subcontractor were the Contractor. District's consent to any subcontract shall not relieve Contractor of any of its duties or obligations under this Contract.
- 17. SUCCESSORS IN INTEREST.** The provisions of this Contract shall be binding upon and shall inure to the benefit of the parties hereto, and their respective authorized successors and assigns.
- 18. TAX COMPLIANCE CERTIFICATION.** The Contractor shall comply with all federal, state and local laws, regulation, executive orders and ordinances applicable to this Contract. Contractor represents and warrants that it has complied, and will continue to comply throughout the duration of this Contract and any extensions, with all tax laws of this state or any political subdivision of this state, including but not limited to ORS 305.620 and ORS chapters 316, 317, and 318. Any violation of this section shall constitute a material breach of this Contract and shall entitle District to terminate this Contract, to pursue and recover any and all damages that arise from the breach and the termination of this Contract, and to pursue any or all of the remedies available under this Contract or applicable law.
- 19. TERMINATIONS.** This Contract may be terminated for the following reasons: (A) by mutual agreement of the parties or by the District (i) for convenience upon thirty (30) days written notice to Contractor, or (ii) at any time the District fails to receive funding, appropriations, or other expenditure authority as solely determined by the District; or (B) if contractor breaches any Contract provision or is declared insolvent, District may terminate after thirty (30) days written notice with an opportunity to cure.  
  
Upon receipt of written notice of termination from the District, Contractor shall immediately stop performance of the Work. Upon termination of this Contract, Contractor shall deliver to District all documents, Work Product, information, works-in-progress and other property that are or would be deliverables had the Contract Work been completed. Upon District's request, Contractor shall surrender to anyone District designates, all documents, research, objects or other tangible things needed to complete the Work
- 20. REMEDIES.** If terminated by the District due to a breach by the Contractor, then the District shall have any remedy available to it in law or equity. If this Contract is terminated for any other reason, Contractor's sole remedy is payment for the goods and services delivered and accepted by the District, less any setoff to which the District is entitled.
- 21. NO THIRD PARTY BENEFICIARIES.** District and Contractor are the only parties to this Contract and are the only parties entitled to enforce its terms. Nothing in this Contract gives, is intended to give, or shall be construed to give or provide any benefit or right, whether directly, indirectly or

otherwise, to third persons unless such third persons are individually identified by name herein and expressly described as intended beneficiaries of the terms of this Contract.

22. **TIME IS OF THE ESSENCE.** Contractor agrees that time is of the essence in the performance this Contract.
23. **FOREIGN CONTRACTOR.** If the Contractor is not domiciled in or registered to do business in the State of Oregon, Contractor shall promptly provide to the Oregon Department of Revenue and the Secretary of State, Corporate Division, all information required by those agencies relative to this Contract. The Contractor shall demonstrate its legal capacity to perform these services in the State of Oregon prior to entering into this Contract.
24. **FORCE MAJEURE.** Neither District nor Contractor shall be held responsible for delay or default caused by events outside the District or Contractor's reasonable control including, but not limited to, fire, terrorism, riot, acts of God, or war. However, Contractor shall make all reasonable efforts to remove or eliminate such a cause of delay or default and shall upon the cessation of the cause, diligently pursue performance of its obligations under this Contract.
25. **WAIVER.** The failure of District to enforce any provision of this Contract shall not constitute a waiver by District of that or any other provision.
26. **PUBLIC CONTRACTING REQUIREMENTS.** Pursuant to the public contracting requirements contained in Oregon Revised Statutes ("ORS") Chapter 279B.220 through 279B.235, Contractor shall:
  - a. Make payments promptly, as due, to all persons supplying to Contractor labor or materials for the prosecution of the work provided for in the Contract.
  - b. Pay all contributions or amounts due the Industrial Accident Fund from such Contractor or subcontractor incurred in the performance of the Contract.
  - c. Not permit any lien or claim to be filed or prosecuted against District on account of any labor or material furnished.
  - d. Pay the Department of Revenue all sums withheld from employees pursuant to ORS 316.167.
  - e. As applicable, the Contractor shall pay employees for work in accordance with ORS 279B.235, which is incorporated herein by this reference. The Contractor shall comply with the prohibitions set forth in ORS 652.220, compliance of which is a material element of this Contract, and failure to comply is a breach entitling District to terminate this Contract for cause.
  - f. If the Work involves lawn and landscape maintenance, Contractor shall salvage, recycle, compost, or mulch yard waste material at an approved site, if feasible and cost effective.
27. **NO ATTORNEY FEES.** In the event any arbitration, action or proceeding, including any bankruptcy proceeding, is instituted to enforce any term of this Contract, each party shall be responsible for its own attorneys' fees and expenses.
28. **KEY PERSONS.** Contractor acknowledges and agrees that a significant reason the District is entering into this Contract is because of the special qualifications of certain Key Persons set forth in the Contract. Under this Contract, the District is engaging the expertise, experience, judgment, and personal attention of such Key Persons. Neither Contractor nor any of the Key Persons shall delegate performance of the management powers and responsibilities each such Key Person is required to provide under this Contract to any other employee or agent of the Contractor unless the District provides prior written consent to such delegation. Contractor shall not reassign or transfer a Key Person to other duties or positions such that the Key Person is no longer available to provide the





**EXHIBIT A  
PERSONAL SERVICES CONTRACT  
SCOPE OF WORK**

# ***SCOPE OF WORK***

## **ENGINEERING SERVICES FOR THE TRI-CITY WRRF INFLUENT PUMP STATION EXPANSION PROJECT**

### **INTRODUCTION**

Clackamas Water Environment Services ("WES"), referred to as "District", desires alternative analysis, design and bidding services for the Tri-City Water Resource Recovery Facility ("WRRF") Influent Pump Station (IPS) Expansion Project. Services during construction will be scoped and contracted as the design phase of the project approaches completion.

The Tri-City IPS Expansion Project will evaluate necessary improvements to accommodate future, projected flows which are summarized below. The existing pump station has a current firm capacity of 50.4 million gallons per day (mgd) (two smaller pumps at 7.2 mgd and three larger pumps at 18.0 mgd). The required capacity of the pump station to accommodate projected 2040 peak hour flows is approximately 72.6 mgd (WES Flow Summary, CH2M Hill, 2019). The current required minimum operating capacity is approximately 4.0 mgd, presenting a challenging range of required operation. An early project task will be to revisit recent collection system modeling and finalize both peak and minimum flows for the pump station. The project will include an evaluation to determine the optimal pump sizing to provide the required flow range.

This Project will also address several maintenance issues. The electrical system, which is housed on the ground level of the pump station includes MCCs, VFDs, and control panels, is at the end of its useful life and is expected to be replaced as part of this project. Control logic will require updating as part of this project as well.

### **BACKGROUND**

WES provides wastewater treatment to ratepayers at five treatment facilities, including the Tri-City WRRF in Oregon City. The facility, including the Influent Pump Station (IPS), was originally constructed in 1985 as part of the conventional activated sludge treatment system with a firm influent pumping capacity of 50.4 MGD. However, the facility has recently operated beyond its design firm capacity. The wet weather capacity of the facility was expanded to 60.0 MGD in 2012 with the addition of an MBR treatment train.

Operation of the Tri-City and Kellogg Creek WRRFs are interconnected. Up to 12.5 MGD of flow is diverted from the Kellogg WRRF service area and arrives to the Tri-City facility on the downstream side of the IPS via pumping from the Intertie Pump stations. The remainder of the flow from the former Tri-City Service area (Oregon City, West Linn and portions of Gladstone) arrives by gravity. The IPS lifts this raw wastewater to the influent screens. The IPS includes two smaller dry weather pumps and three larger wet weather pumps, all of which are at the end of their useful life.

Concurrently, the recommendation from the recently completed Willamette Facilities Plan includes a wet weather expansion of the Tri-City WRRF. Design is anticipated to begin in 2026. Conceptual hydraulic grade lines for 2040 and build-out conditions have been completed. The IPS will continue to pump the gravity portion of the flows into the facility and must be coordinated with the planned future WRRF

expansion(s). A new force main from the ongoing Intertie 2 project will connect to the existing headworks and is not anticipated to be included in the analysis and design phase of the pump station project. The IPS is currently operating at or near capacity and lacks the required capacity for projected 2040 flows.

**PROJECT TEAM**

Carollo Engineers, Inc., (Consultant) will serve as the Prime Consultant for the Project, utilizing the following key persons:

Key Staff	Role
Brian Matson	Principal-in-Charge
Dan Laffitte	Project Manager
Victoria Boschmans	Design Manager
Mike Zappone	Pump Station Technical Expert

The following Subconsultant firms will support Consultant:

Subconsultant	Key Staff	Role
HDR, Inc.	Don Best	Electrical and I&C Lead
	Yee Ping See	Electrical and I&C
	Charlie Allaban	Pump Station Peer Review (Technical Expert)
Clemson Engineering Hydraulics	Dave Werth	Physical Modeling
West Yost	Rajeev Kapur	Regulatory Lead
	Walt Meyer	Regulatory Technical Advisor
Mechanical Solutions, Inc (MSI)	Maki Onari	Vibration Analysis

**DISTRICT-PROVIDED SERVICES**

1. District shall furnish available studies, reports and other data pertinent to Consultant's services; obtain or authorize Consultant to obtain or provide additional reports and data as required; and furnish to Consultant services of others required for the performance of Consultant's services. Consultant will rely upon the accuracy, timeliness, and completeness of the information provided by District.
2. District will make its facilities accessible to Consultant as required for Consultant's performance of its services. District will perform such no-cost tests of equipment, machinery, pipelines, and other components of District's facilities as may be required in connection with Consultant's services.
3. District will furnish required information, examine deliverables submitted by Consultant, and render decisions and approvals in a timely manner.
4. District will give prompt notice to Consultant when District observes or becomes aware of developments that affect the scope or timing of Consultant's services, or of defects in the work of Consultant.
5. District will provide Division zero specifications.
6. District will perform required permitting activities.
7. District will provide consolidated review comments for each deliverable in excel format.

**GENERAL ASSUMPTIONS**

1. The project will use Consultant standard, CSI format (6-digit, 50-division system) for technical specifications.

2. Flow projections for the IPS will be provided by Jacob's through the District. Consultant scope will include allowance for meetings and effort to analyze information provided for flow frequency distributions.
3. No HVAC improvements will be required in the IPS.
4. 90% Deliverable will be stamped as "For Permit Review". District will prepare and submit building department permit application.
5. Project duration from start to completion of bid period services is assumed to be 24 months long.
6. This project scope and effort is based on upgrading the existing pump station. Services for design of a new pump station or bypass pumping design are not included.
7. All project workshops will be held in person at the Tri-City WRRF.
8. Reuse of completed documents or use of partially completed documents without written verification or concurrence by Consultant for the specific purpose intended will be at the District's risk and without liability or legal exposure to the Consultant.
9. Consultant has no control over the cost of labor, materials, equipment, or services furnished by others, over the incoming facility water quality and/or quantity, or over the way the District's plant and/or associated processes are operated and/or maintained.
10. Data projections and estimates are based on Consultant's opinion founded on experience and judgment. Consultant cannot guarantee that actual costs and/or quantities realized will not vary from the data projections and estimates prepared. Consultant will not be liable to any inconsistencies between Consultant's data projections, estimates, and actual costs and/or quantities realized by the District in the future.
11. Considering the anticipated project schedule and the contractual 3.15 multiplier, hourly billing rates will be adjusted annually throughout the project up to the rate cap of \$250/hour for non-technical expert staff

## SCOPE OF WORK

### TASK 100 PROJECT MANAGEMENT

The objective of this task is to effectively manage and coordinate the engineering services required for Project completion. Consultant will provide the following services:

#### **Subtask 110 - Project Management Plan.**

- **Draft Project Management Plan.** Develop draft project management plan (PMP) and review during kickoff meeting.
- **Implement Project Management Plan.** Monitor and maintain the plan throughout the project.

#### **Subtask 120 - Project Monitoring and Reporting.**

- **Project Schedule.** Develop and maintain a project schedule utilizing the Work Breakdown Structure (WBS) developed during contract negotiations.
- **Project Budget and Monthly Invoicing.** Prepare and submit monthly invoices for progress payments and monthly subcontractor payment and utilization reports. A project status report will be prepared that summarizes work completed, upcoming activities and unresolved issues.

- **Manage and Coordinate Internal Resources.** Manage and coordinate resources and Subconsultants to provide quality-managed deliverables within the approved project schedule and budget.
- **Progress Meetings and Updates.** The Consultant's project manager and as necessary assistant project manager will prepare for, meet and follow up as necessary with District's project manager via Microsoft Teams every other week to review project progress, schedule, and discuss upcoming work activities. As part of these meetings, the Consultant's project manager will provide bi-weekly meeting agendas that track ongoing work activities and outstanding action items..

#### **Task 100 Deliverables:**

- Project Management Plan, documenting communication approach, tools, Quality Assurance/Quality Control (QA/QC) procedures, project risks, project team and contact information.
- Project Schedule.
- Monthly invoice and budget status report by the 15<sup>th</sup> of each month. Include budget reports that shows budgeted work complete, billings to date, and estimate at completion.

#### **Task 100 Assumptions:**

- Project management effort includes Carollo management of subconsultants and their respective project management, when applicable.

## **TASK 200 KICKOFF MEETING AND SITE INVESTIGATION**

The objective of this task is to share with stakeholders the project scope, schedule, and approach for their engagement throughout the project. In addition, a project team site visit will be conducted to orient the team to most current facility condition. Consultant will provide the following services:

- **Preparation for meeting.** Content contained in the Project Management Plan will be used in kickoff meeting to introduce team members, communicate extent of project scope to stakeholders, review project communication protocols and review project deliverables and draft project schedule. Consultant will coordinate with WES Project Manager to identify best strategies to engage WES staff in the evaluation and design process.
- **Kickoff Meeting.** Meeting to be with WES staff at Tri-City facility and will include site visit for team members. During the site visit, the team will spend time on site with District maintenance, operations and electrical/controls staff reviewing existing conditions. The kickoff meeting will be scheduled within two weeks of Notice to Proceed.
- **Meeting Summary.**
  - A draft summary of meeting and conclusions will be prepared and provided.
  - A final version will be provided to addresses District comments. Meeting slide deck will be attached as appendix to the meeting summary.

#### **Task 200 Deliverables:**

- Project Kickoff Meeting Agenda and Summary Notes, including decisions/action items.

#### **Task 200 Assumptions:**

- Kickoff Meeting of 2-hour duration at the Tri-City WRRF and site visit to occur on same day.
- The design team site visit will last until the end of the day of the site visit.
- Civil and structural design leads will not participate in kick-off / site visit.

## **TASK 300 DATA REVIEW/GAP ANALYSIS**

The objective of this task is to confirm that all available pertinent information available for the project is collected and strategies to address gaps are developed by the project team. Consultant will provide the following services:

- **Data Gap Summary.** Following the kickoff meeting/site visit, the consultant team will perform a data gap analysis and develop a data request memorandum. Information pertaining to the project including but not limited to as-built drawings, planning documents, plant operating records and data, and field operations will be requested in the Data Gap Summary Memo. This includes effort to review and consider the capacity of the existing HVAC system in the IPS to allow for a high level review of the heat load associated with the future equipment analyzed during the design phase. Effort includes preparing for and discussions with District staff on required format of hourly flow data.
- **Data Collection Coordination.** The consultant team will have one virtual meeting with the District to coordinate and review data provided in response to data request memo and to consider strategies to address unresolved data gaps. Additional information provided will be incorporated into the data reference information.

#### **Task 300 Deliverables:**

- Data Gap summary document outlining outstanding needs for discussion with staff.

#### **Task 300 Assumptions:**

- Data needs associated with project include items such as, but not limited to, hourly and daily historical influent flows, standard operating procedures, projected flows.
- City will provide latest as-builts, electrical/control systems studies and calculations, as-built MCC schematics, electrical improvements, and SCADA/PLC control information.
- Effort for Electrical, Instrumentation and Controls design team members to create record drawings of the existing system is not anticipated or included in the budget.
- Condition assessment of the existing piping system is not included.
- Data will be provided by District in desired format that requires minimal effort to consolidate and use.

## TASK 400 DESIGN FLOW REQUIREMENT

The objective of this task is to determine the appropriate design flow requirements for the IPS based on Oregon Department of Environmental Quality (DEQ) requirements and both historical and projected plant operating data. Consultant will provide the following services:

### Subtask 410 – Design Flow Requirement Evaluation

- **Prior Design Flow Planning Review.**
  - Review information in the Jacob’s Sanitary Sewer System Master Plan and recent Willamette Facility Plan to confirm future flow requirement for the IPS.
  - Prepare for and participate in one two-hour virtual meeting with Jacobs to develop understanding of the latest flow projection model assumptions.
- **DEQ Requirement Review.** Review DEQ pump station design requirements to verify regulatory design requirements.
- **Flow Frequency Analysis.** Perform statistical analysis of frequency of flows to allow for development of alternative design condition. This analysis will use Jacob’s flow projection data to develop peak frequency curves and District provided hourly flow data compiled for 3 years into a single column format
- **Design Condition Development.** Develop draft DEQ compliant design condition and one alternative design condition that considers a reduced firm capacity that might reduce the extent of improvements necessary at the IPS.
- **Design Flow and Regulatory Requirement Evaluation Workshop Preparation.** Prepare summary of future flow conditions, regulatory requirement findings and DEQ Compliant and Alternative Design Point for Workshop.
- **Design Flow Requirement Evaluation Workshop.** Facilitate workshop with WES staff to review DEQ compliant and alternative design condition options and to discuss regulatory strategy. Regulatory consultant will attend this meeting. Consultant Project Manager, Design Manager, and Pump Station Lead will attend this workshop in person at the Tri-City Facility.
- **Design Flow Requirement Evaluation Workshop Summary.** Prepare summary of meeting and conclusions.
  - A draft summary of meeting and conclusions will be prepared and provided.
  - A final version will be provided to address District comments. Meeting slide deck will be attached as appendix to the meeting summary.

### Subtask 420 – Pump Station Capacity Requirement Technical Memorandum

- **Prepare Draft Pump Station Capacity Requirement Technical Memorandum.** Based on analysis and DEQ coordination, prepare draft Pump Station Capacity Requirement Technical Memorandum.
- **Prepare Final Pump Station Capacity Requirement Technical Memorandum.** Finalize the draft technical memorandum based on District and DEQ review comments. The maximum and minimum flows established through this task will serve as the basis of design for the IPS.

### Task 400 Deliverables:



- Design Flow Requirement Evaluation Workshop agenda, presentation, and summary.
- Draft and Final Pump Station Capacity Requirement Technical Memorandum.

#### **Task 400 Assumptions:**

- All necessary flow projection information will be provided by WES staff.
- Comments on the Draft Pump Station Capacity Requirement Technical Memorandum will be provided in one consolidated document.
- District staff will provide compiled influent flows (gravity and pump stations) in a single column for each source in an hourly format for the last three years on a single tab in an excel spreadsheet.

## **TASK 500 REGULATORY COORDINATION AND ASSISTANCE**

The objective of this task is to explore and develop consensus with DEQ on the basis of design for the pump station improvements. Regulatory Subconsultant will provide the following services:

- **Design Condition Review.** Review influent flow frequency statistical analysis and DEQ compliant and alternative design condition developed by Consultant and provide feedback to the design team.
- **Regulatory Strategy Development.** Prepare a draft written strategy to engage DEQ on alternative design conditions and provide for Consultant review. Address Consultant comments and finalize draft strategy.
- **Regulatory Coordination Workshop Preparation.** Prepare PowerPoint slides summarizing the proposed DEQ approach strategy to be reviewed as part of the Regulatory Coordination Workshop.
- **Design Flow and Regulatory Requirement Evaluation Workshop Preparation (associated with Task 400) and Summary.** Participate in Workshop and provide input on workshop summary.
- **DEQ Coordination.** Work with District staff and design team to implement the regulatory strategy through interactions with DEQ. An allowance for two one-hour meetings with DEQ will be included along with one two-hour internal coordination meeting. One of the two DEQ meetings could be in-person.
- **Regulatory Summary.** Based on DEQ interactions, prepare regulatory language for the Pump Station Capacity Requirement technical memorandum.
  - A draft regulatory summary will be prepared and provided for Consultant review.
  - An updated regulatory summary will be provided to address Consultant comments and submitted for WES review.
  - A final regulatory summary will be provided to address WES comments.

#### **Task 500 Deliverables:**

- Regulatory Coordination Workshop agenda, presentation, and summary.
- Regulatory summary to be incorporated in the Pump Station Capacity Requirement technical memorandum.

#### **Task 500 Assumptions:**

- The regulatory workshop will be in-person.
- One DEQ coordination meeting could be in person, the other two are assumed to be virtual.
- Carollo Project Manager will be only Carollo attendee at the DEQ coordination meetings.
- New electrical equipment will be located at a similar elevation to existing electrical equipment and will not require any specific coordination with DEQ.

## TASK 600 PUMP STATION ALTERNATIVE ANALYSIS

The objective of this task is to develop and evaluate alternatives that will optimize WES' operations and maximize use of existing facilities. Consultant will provide the following services:

### Subtask 610 – Develop Conceptual Layout Alternatives.

- **Initial Evaluation.** Perform initial evaluation of pumps and wet well modifications necessary to accommodate the selected design conditions. The following pump alternatives will be considered for this scope of work:
  - Dry pit submersible - vertical orientation
  - Dry pit submersible - horizontal orientation

This effort includes preliminary review of:

- Pump types
- EIC equipment requirements
- Preliminary CFD modeling as necessary to confirm wet well hydraulics.
- Capital and operating costs for the alternatives.
- Structural input on pipe/pump supports and any required structural modifications necessary to accommodate the new pumps under consideration.
- General construction sequencing for each alternative.
- **Layout Review Workshop Preparation.** Prepare for layout summary workshop.
- **Layout Review Workshop.** Facilitate a 2-hour workshop with WES staff to review pump type, layout alternatives, potential wet well modifications and EIC options. Consultant Project Manager, Design Manager, and Pump Station Lead will attend this workshop in person at the Tri-City Facility. Additional Consultant staff will join the workshop virtually.
- **Layout Review Workshop Summary.** Prepare summary of meeting and conclusions.
  - A draft summary of meeting and conclusions will be prepared and provided.
  - A final version will be provided to address District comments. Meeting slide deck will be attached as appendix to the meeting summary.
- **Preferred Layout Support** An allowance for two two-hour virtual sessions is included to provide assistance for District selection of preferred alternative.

### Subtask 620 – Preferred Alternative Pump Station Wetwell CFD and Physical Modeling

- **CFD Modeling.** Perform CFD modeling of the preferred alternative to confirm headloss, establish reasonable flow splitting among pumps and define straightened flow hydraulic approach conditions to the pumps.

- A three-dimensional (3D) CFD model will be developed of the pump station in sufficient details to replicate the hydraulic condition at the pump suction locations. The model will start with the influent piping approximately 10 diameters upstream from the wet well caisson, include the wet well details and pump suction piping to the pump location. Details such as grouting, valves and fittings will replicate as best possible with available information. Modeling will start with the initially preferred general facility design. Up to 4 operating scenarios will simulated to evaluate system hydraulics. A scenario is a combination of operating pumps at a specific flow and wet well water level. Model data will provide information on the level of swirl, the relative level of turbulence, and the velocity at the pump suction location for the operating pumps and a vortex search tool will be used to identify the vortex cores within the model domain. Hydraulic Institute (HI) has identified acceptable levels of pump intake approach conditions based on scale physical modeling, which will be adapted for evaluating the CFD model results. HI recommends the velocity distribution be within standard of +/- 10% (1.10 to 0.90) of the average for all operating pumps in all cases. The relative turbulence levels should be under 10% (<0.10). The swirl should be with +/- 5 degrees from axial for all pumps. In addition, there should not be vortices that enter the pumps. Based on the initial results, modification testing will be conducted as needed to enhance the design so that pump intake hydraulics are as optimal as practical prior to conducting scale physical modeling.
- **Physical Modeling (OPTIONAL SERVICE).** Perform physical modeling to evaluate pump station wet well and pump inlet conditions for the preferred alternative to confirm and/or optimize any necessary remedial modifications. Physical modeling shall be conducted according to ANSH/HI 9.8-2018 and ANSI/HI 9.6.6-2022 Hydraulic Institute Standards. The entire wet well from the inlet pipe through to the pump suction will be simulated, including all pumps and suction pipes. In addition to developing any remedial modifications, the model also will be used to determine minimum operating water levels within the wet well. A draft report will be submitted outlining any recommended modifications needed for Hydraulic Institute compliance. An in-person witness test will be held at Clemson Engineering Hydraulics South Carolina modeling facility prior to issuing a final report. Video of both baseline and final testing will be submitted.
- **CFD and Physical (if performed) Modeling Results Review.** The impacts of the CFD and physical (if performed) modeling results will be considered and impacts to the design approach and preferred layout will be coordinated virtually with District. Any updates to the preferred layout will be noted in the Basis of Design Report.

#### **Subtask 630 – Procurement Option Evaluation.**

- **Evaluate Procurement Options.**
  - Based on the selected preferred alternative, equipment lead times for mechanical and electrical equipment will be reviewed and schedule impacts developed.
  - A summary of equipment procurement strategies will be prepared for District consideration.

- One virtual meeting will be prepared for and facilitated to review procurement strategy summary and select the preferred strategy.

#### **Task 600 Deliverables:**

- Layout Workshop agenda, presentation, and summary.
- Preferred Layout Workshop agenda, presentation, and summary.
- Draft and Final meeting summaries.
- Subconsultant draft and final physical modeling report (if modeling is performed)

#### **Task 600 Assumptions:**

- Deliverables will be furnished in electronic format.
- The initial layout and preferred layout/procurement workshop will both be in person at the Tri-City facility.
- The effort anticipates up to 2 pump station layouts be evaluated, such as dry pit submersible vertical, and dry pit submersible horizontal.
- Design flow for each pump size will be defined during this task.
- IPS modifications in this scope do not include wet well modifications and wall thimble changes.
- Bypass pumping system and design will not be required for improvements.
- It is assumed that the preferred alternative will not trigger seismic retrofit of the structure.
- District will select procurement strategy based on the summary and single virtual meeting associated with Subtask 630.
- An allowance of 20 hours is included for addressing results from the CFD and physical modeling. This allowance assumes only minor impacts to the PS layout as a result of modeling evaluations.

## **TASK 700 PRELIMINARY DESIGN**

The objective of this task is to document key decisions concerning the preferred alternative and develop preliminary design documents. Consultant will provide the following services:

#### **Subtask 710 - Basis of Design Report (BODR)**

- **Draft BODR.** Summarize results from Task 300 - 600 to establish the IPS basis of design. Develop a brief report that documents key design team decisions and basis of design including:
  - Pump design flow conditions
  - Pump type
  - Layout description
  - Hydraulic, physical, and CFD modeling conclusions
  - EIC basis of design
  - Capital and operating cost
  - Structural considerations
  - Construction sequencing

The report will include prior meeting summaries and memos as attachments and will refer to these documents for necessary background on the basis of design.

- **DEQ BODR.** After receiving feedback from the District on the BODR in written format and during the design review workshop, the BODR will be finalized for use in submission to the Oregon DEQ.
- **Finalize BODR.** Based on input from DEQ, the BODR will be updated and finalized.

#### **Subtask 720 – 30% Design**

- **30% Design Specifications.**
  - Prepare Table of Contents summarizing all specifications anticipated for the project.
- **30% Design Drawing Set.**
  - Prepare 30% design drawings.
- **30% Design Cost Estimate.**
  - Prepare 30% design construction cost estimate in general conformance with an Association for the Advancement of Cost Engineering (AACE) International Class 3 estimate with an estimated accuracy range of -20% to +30%.
- **30% Design Workshop.** Conduct design workshop with District staff to receive input on the 30% design deliverable.
  - **30% Design Workshop Preparation.** Prepare summary of 30% Design for the workshop.
  - **30% Design Workshop.** Facilitate workshop with WES staff to solicit further input on 30% Design. Consultant Project Manager, Design Manager, and Pump Station Lead will attend this workshop in person at the Tri-City Facility. Additional Consultant staff will join the workshop virtually as needed.
  - **30% Design Workshop Summary.** Prepare summary of meeting and conclusions.
    - A draft summary of meeting and conclusions will be prepared and provided.
    - A final version will be provided to address District comments. Meeting slide deck will be attached as appendix to the meeting summary.

#### **Task 700 Deliverables:**

- Draft BODR.
- Final BODR.
- 30% Design Specifications TOC.
- 30% Design Drawings.
- 30% Design Cost Estimate.
- 30% Design Workshop agenda, presentation, and summary.

#### **Task 700 Assumptions:**

- Electrical and controls engineering scope includes replacement of existing electrical equipment such as the switchboard and variable frequency drives at the IPS.
- Deliverables will be furnished in electronic format.
- The BODR will include a concept level description of electrical and control system design. Exhibits will be provided for single line diagram and preliminary site plan identifying location

of major electrical and control equipment components. Sequencing will be developed to allow for continuous operation of the pump station while the new electrical equipment is installed. Draft control narratives, piping and instrument diagrams, and a programmable logic controller (PLC) block diagram will be provided. This task includes coordination with the local electrical utility (PGE) to determine if the existing service capacity can accommodate the newly established loads or a new upgrade of the service is required.

- AFT Fathom will be used for pump system analysis.
- Preliminary drawing list is provided as an attachment to this scope of work.
- Allowance for one site visit to be conducted by Design Manager and Pump Station Lead to verify existing conditions during the 30% design.
- District will submit DEQ BODR for DEQ review. District to prepare any necessary paperwork for submission and pay any application fee. An allowance of 20 hours is included to address DEQ comments and finalize the BODR.

## TASK 800 PUMP AND ELECTRICAL EQUIPMENT PRE-PROCUREMENT SERVICES

The objective of this task is to assist the District in selecting and procuring long lead equipment items using an evaluated proposal or bid process to reduce overall project schedule. Design information for selection of equipment will be based on information in the project basis of design report. Additionally, some effort associated with preparing technical content will be provided. Following pre-procurement, a single set of final design documents will be completed under Task 900 based on the specific details of the selected electrical and pump equipment manufacturers.

Consultant shall provide the following services:

### **Subtask 810 – Define Equipment for Pre-procurement and Develop Draft Evaluation Criteria.**

- **Equipment Inventory.** An inventory of mechanical and electrical equipment for pre-procurement will be confirmed.
- **Draft Evaluation Criteria.** Consultant will develop initial evaluation criteria draft.
- **Evaluation Criteria Workshop.** Conduct workshop with District staff to receive input on the draft Evaluation Criteria.
  - **Evaluation Criteria Workshop Preparation.** Prepare summary of evaluation criteria for the workshop.
  - **Evaluation Criteria Workshop.** Facilitate workshop with WES staff to solicit further input on evaluation criteria. This workshop will be facilitated virtually.
  - **Evaluation Criteria Workshop Summary.** Prepare summary of meeting and conclusions.
    - A draft summary of meeting and conclusions will be prepared and provided.
    - A final version will be provided to address District comments. Meeting slide deck will be attached as appendix to the meeting summary.
- **Final Evaluation Criteria.** Consultant will develop final evaluation criteria based on District feedback.

### **Subtask 820 - Assemble Electrical Pre-procurement Packages.**

- Prepare draft electrical pre-procurement document packages. One electrical equipment package is assumed. Documents packages include:
  - District front end specifications, provided by the District.
  - Technical specifications that includes control narrative.
  - Technical specifications required such as seismic design criteria and epoxy anchors.
  - Preliminary process and instrumentation diagram.
- Prepare final pre-procurement document packages based on District feedback.

**Subtask 830 - Assemble Pump Pre-procurement Packages.**

- Prepare draft pump pre-procurement document packages. One pump equipment package is assumed. Documents packages include:
  - District front end specifications.
  - Technical specifications that includes control narrative.
  - Technical specifications required such as seismic design criteria and epoxy anchors will be included.
  - Preliminary process and instrumentation diagram.
  - Internal scoring matrix based on selection criteria.
- Prepare final pre-procurement document packages based on District feedback.

**Subtask 840 - Respond to technical questions during the advertising/bid period.**

- Assist the District in providing responses to electrical technical questions during the bid period.
- Assist the District in providing responses to pump technical questions during the bid period.
- Answer District questions during their electrical scoring and evaluation period as needed. Allowance of 28 hours for the electrical PM and Technical Lead.
- Answer District questions during their pump scoring and evaluation period as needed. Allowance of 26 hours for the process mechanical PM and Technical Lead.

**Subtask 850 - Review Equipment Submittals.**

- Review electrical equipment submittals.
- Review pump equipment submittals.

**Task 800 Deliverables:**

- Electrical equipment draft pre-procurement package.
- Pump equipment draft pre-procurement package.
- Electrical equipment final pre-procurement package.
- Pump equipment final pre-procurement package.
- Electrical scoring matrix documenting Consultant's proposal review.
- Pump scoring matrix documenting Consultant's proposal review.
- Submittal review comments.

**Task 800 Assumptions:**

- The baseline project schedule assumes that the following key equipment will be pre-purchased: pumps, switchboard, variable frequency drives (VFDs), motor control center(s) (MCCs), and transformers at the IPS.
- The District will bid the electrical and pump equipment packages.
- Review of up to 10 RFI's, one time. Three of which could be electrical / controls in nature.

## TASK 900 FINAL DESIGN

The objective of this task is to develop final design documents that will ultimately be used for the contractor bidding process. Consultant will provide the following services:

### Subtask 910 – 60% Design

- **Address District Provided 30% design comments.** Prepare responses to Address District 30% design comments.
- **60% Design Vibration Analysis Support.** An allowance for vibration support from Mechanical Solutions, Inc will be included to support the 60% design process.
  - **Preliminary Structural Dynamic Analysis:** Perform a preliminary structural dynamic analysis based on the 60% design layout and preferred equipment and provide recommendations to mitigate vibration risks.
  - **Specifications Support:** Provide specification wording focused on reducing the risk of vibration issues at start-up and vibration issues that could impact long-term pump reliability.
- **60% Design Specifications.** Prepare 60% design specifications.
- **60% Design Drawing Set.** Prepare 60% design drawings. As part of the 60% effort, the estimated new heat load associated with the new equipment will be considered
- **60% Design Cost Estimate.** Prepare 60% design construction cost estimate in general conformance with an Association for the Advancement of Cost Engineering (AACE) International Class 2 estimate with an estimated accuracy range of -15% to +20%.
- **60% Design Workshop.** Conduct design workshop with District staff to receive input on the 60% design deliverable and development of the 90% Design Submittal.
  - **60% Design Workshop Preparation.** Prepare summary of 60% Design for the workshop.
  - **60% Design Workshop.** Facilitate workshop with WES staff to solicit further input on 60% Design. Consultant Project Manager, Design Manager, and Pump Station Lead will attend this workshop in person at the Tri-City Facility. Additional Consultant staff will join the workshop virtually as needed.
  - **60% Design Workshop Summary.** Prepare summary of meeting and conclusions.
    - A draft summary of meeting and conclusions will be prepared and provided.
    - A final version will be provided to address District comments. Meeting slide deck will be attached as appendix to the meeting summary.

### Subtask 920 – 90% Design

- **Address District Provided 60% design comments.** Prepare responses to address District 60% design comments.



- **90% Design Specifications.** Prepare 90% design specifications. The 90% specifications will be stamped for building department review and will be used for the permit application.
- **90% Design Drawing Set.** Prepare 90% design drawings. The 90% drawings will be stamped for building department review and will be used for the permit application.
- **Building Department Permitting Effort Support.** The consultant will attend permitting meetings and respond to questions and comments that arise from the permitting process. 20 hours for permitting assistance are included.
- **90% Design Cost Estimate.** Prepare 90% design construction cost estimate in general conformance with an Association for the Advancement of Cost Engineering (AACE) International Class 1 estimate with an estimated accuracy range of -10% to +15%.

#### **Subtask 930 – Bid Documents**

- **Bid Specifications.** Prepare bid set specifications.
- **Bid Drawing Set.** Prepare bid set drawings.
- **Final Cost Estimate.** Prepare final construction cost estimate in sufficient detail to provide the expected range of accuracy of an Association for the Advancement of Cost Engineering (AACE) International Class 1 estimate: -10% to +15%.

#### **Task 900 Deliverables:**

- 60% Design workshop agenda, materials, and summary notes.
- 60% Design submittal.
- 90% Design submittal.
- Bid documents.

#### **Task 900 Assumptions:**

- WES to provide necessary CAD standards including symbols, families, template files, CTB/STB files for plotting, acad.lin file for line-types, any necessary custom SHX files for text and line-types, legends, and standard typical details.
- No new civil site design is included.
- Deliverables will be furnished in electronic format.
- District to provide a single consolidated set of review comments for design submittals.
- Drawings will be provided in AutoCad format DWG files and will reference existing drawings as background as necessary to capture design intent.
- Electrical and controls engineering scope includes replacement of existing electrical equipment such as the switchboard and variable frequency drives at the IPS.
- The electrical plans will include single line diagrams, equipment elevations, a site plan, building plans, control diagrams, ductbank schedules, panelboard schedules, and construction details for installation of the electrical system.
- Controls design will include PLC upgrades, requirements to provide installation of instrumentation such as flow meters, level transmitters, and gas monitoring system.
- Technical specifications in CSI format will be provided.
- Electrical equipment such as the variable frequency drives will be installed inside the building.

- The IPS switchboard and transformers will be installed outside the building.
- IPS operating voltage of 480V, 3PH.
- The existing plant medium voltage switchgear has adequate capacity for the increased loads.
- The existing 1,500kVA transformers will require replacement due to the larger pump sizes. Existing transformer pads and conduits will be reused.
- Project includes modification to existing PLC control panel, not a new panel.
- Allowance for two site visit to be conducted by Design Manager and Pump Station Lead or Structural Lead to verify existing conditions during the 60% design.
- Scope of required civil design will not require a survey or a civil design lead site visit.
- Carollo and HDR will each use respective standard detail drawings.

## TASK 1000 BID PERIOD SERVICES

The objective of this task is to assist the County with the bidding process. Consultant will provide the following services:

### **Subtask 1010 – Attend Pre-Bid Conference.**

- Attend Pre-bid Conference to assist District as needed.

### **Subtask 1020 – Respond to Bid Period Questions.**

- Assist District in providing responses to technical questions during the bid period.

### **Subtask 1030 – Prepare Bid Document Addenda.**

- Prepare addenda to clarify and or modify the Final Project Bidding documents sealed by the design professional of record.

### **Subtask 1040 - Prepare Conformed Documents.**

- Prepare conformed drawings and specifications that incorporate addendum items developed during bidding phase. Specifically, the following hard copies will be provided:
  - 4 hard copies (2 full size and 2 half-size) for WES
  - 4 hard copies (2 full size and 2 half-size) for Contractor
  - 2 hard copies (1 full size and 1 half-size) for field staff

### **Task 1000 Deliverables:**

- Provide responses to Bidder questions as requested by WES.
- Addenda materials sealed by the design professional of record including revised plans and specifications as requested by WES to clarify the documents and to answer bidder questions.
- Conformed drawings and specification incorporating addendum items.

### **Task 1000 Assumptions:**

- Project manager or design manager and EIC manager to attend the pre-bid conference.
- Hour assumptions for bid phase services are summarized below.

- 38 hours for bid period questions.
- 45 hours for preparing addenda.
- 94 hours to prepare conformed documents.

## TASK 1100 QUALITY CONTROL

The objective of this task is to provide quality control measures throughout the entire project. Consultant will provide the following services:

### **Subtask 1110 – 30% Internal Quality Control Coordination.**

- Perform intra-discipline and discipline-coordinated quality management, design intent, engineering calculation, and constructability reviews on the 30% design submittal.
- Address internal QC comments on the 30% design submittal (or identify unresolved review comments with the proposed method to be used to address these comments in the subsequent design submittal) and submit the final 30% design submittal to WES for review.
- Pump selection, layout, and concept quality control review will be performed by HDR.

### **Subtask 1120- 60% Internal Quality Control Coordination.**

- Confirm that WES 30% comments have been addressed.
- Perform discipline-coordinated QC and constructability reviews on the 60% Design Submittal.
- Address and resolve Consultant’s internal QC comments on the 60% design submittal and provide to the District for review.

### **Subtask 1130 - 90% Internal Quality Control Coordination.**

- Confirm that WES 60% comments have been addressed.
- Perform discipline-coordinated QC and coordination cross check on the 90% Design submittal.
- Address and resolve Consultant’s internal QC comments on the 90% design submittal and provide to the District for review.

### **Subtask 1140 - Bid Documents Internal Quality Control Coordination.**

- Confirm that WES 90% comments have been addressed.
- Perform discipline-coordinated QC review on the Bid Documents.
- Address and resolve Consultant’s internal QC comments on the Bid Document Submittal and provide to District for advertisement and bidding.

### **Task 1100 Deliverables:**

- None.

### **Task 1100 Assumptions:**

- Quality control effort is distributed between 30%, 60%, 90%, and Bid Documents. Additional QC hours for non-design tasks are shown in those individual tasks.

## TASK 1200 ENGINEERING SERVICES DURING CONSTRUCTION

The objective of this task is to provide engineering support from project notice to proceed through final completion. Consultant will provide the following services:

- **Engineering Services During Construction.** This will be scoped towards completion of the final design phase when the final scope of project improvements are defined.

Sheet No.	Drawing Number	Title	Owner
<b><u>GENERAL</u></b>			
1	G01	COVER SHEET, VICINITY AND LOCATION MAPS	Carollo
2	G02	DRAWING INDEX	Carollo
3	G03	DESIGN CRITERIA	Carollo
4	G04	ABBREVIATIONS	Carollo
5	G05	GENERAL NOTES, LEGENDS, AND SYMBOLS	Carollo
<b><u>TYPICAL DETAILS</u></b>			
6	T01	CIVIL/YARD TYPICAL DETAILS	Carollo
7	T02	STRUCTURAL TYPICAL DETAILS - 1	Carollo
8	T03	STRUCTURAL TYPICAL DETAILS - 2	Carollo
9	T04	MECHANICAL TYPICAL DETAILS - 1	Carollo
10	T05	MECHANICAL TYPICAL DETAILS - 2	Carollo
11	T06	MECHANICAL TYPICAL DETAILS - 3	Carollo
12	T08	ELECTRICAL TYPICAL DETAILS - 1	HDR
13	T09	ELECTRICAL TYPICAL DETAILS - 2	HDR
14	T10	ELECTRICAL TYPICAL DETAILS - 3	HDR
15	T11	ELECTRICAL TYPICAL DETAILS - 4	HDR
16	T12	INSTRUMENTATION TYPICAL DETAILS - 1	HDR
17	T13	INSTRUMENTATION TYPICAL DETAILS - 2	HDR
<b><u>DEMOLITION</u></b>			
18	D01	PUMP ROOM DEMOLITION PLAN	Carollo
19	D02	INTERMEDIATE LEVEL DEMOLITION PLAN	Carollo
20	D03	MOTOR ROOM DEMOLITION PLAN	Carollo
21	D04	DEMOLITION SECTIONS - 1	Carollo
22	D05	DEMOLITION SECTIONS - 2	Carollo
23	D06	DEMOLITION DETAILS - 1	Carollo
24	D07	DEMOLITION DETAILS - 2	Carollo
<b><u>CIVIL/YARD</u></b>			
25	Y01	OVERALL SITE PLAN	Carollo
26	Y02	EROSION CONTROL PLAN	Carollo
27	Y03	EROSION CONTROL DETAILS	Carollo
28	Y04	PAVING AND GRADING RESTORATION PLAN	Carollo
<b><u>STRUCTURAL</u></b>			
29	S01	STRUCTURAL NOTES AND SYMBOLS	Carollo
30	S02	PUMP ROOM PLAN	Carollo
31	S03	INTERMEDIATE LEVEL PLAN	Carollo
32	S04	MOTOR ROOM PLAN	Carollo
33	S05	SECTIONS AND DETAILS - 1	Carollo
34	S06	SECTIONS AND DETAILS - 2	Carollo
35	S07	SECTIONS AND DETAILS - 3	Carollo
<b><u>MECHANICAL</u></b>			
36	M01	MECHANICAL NOTES AND SYMBOLS	Carollo
37	M02	PUMP ROOM PLAN	Carollo
38	M03	INTERMEDIATE LEVEL PLAN	Carollo
39	M04	MOTOR ROOM PLAN	Carollo
40	M05	SECTIONS AND DETAILS - 1	Carollo
41	M06	SECTIONS AND DETAILS - 2	Carollo
42	M07	SECTIONS AND DETAILS - 3	Carollo
<b><u>ELECTRICAL</u></b>			
43	E01	Electrical Symbols Notes & Abbreviations	HDR
44	E02	Single Line Diagram 1 - Demolition Existing Power Distribution System	HDR
45	E03	Single Line Diagram 2 - 3000A Main Switchboard A & B	HDR
46	E04	Single Line Diagram 3 - 480V MCCs	HDR
47	E05	Electrical Equipment Elevation 1 - Main Switchboard	HDR
48	E06	Electrical Equipment Elevation 2 - MCCs	HDR
49	E07	Electrical Site Plan	HDR
50	E08	Electrical Demolition and Sequencing Power & I/C Plan 1 - Existing HVT-1A & Switchboard	HDR
51	E09	Electrical Demolition and Sequencing Power & I/C Plan 2 - New Main Switchboard SWBD-1 & VFD SC-110-1121	HDR
52	E10	Electrical Demolition and Sequencing Power & I/C Plan 3 - New VFD SC-110-1125 & New Network Cabinet	HDR
53	E11	Electrical Demolition and Sequencing Power & I/C Plan 4 - New VFD SC-110-1124	HDR
54	E12	Electrical Demolition and Sequencing Power & I/C Plan 5 - New VFD SC-110-1123	HDR
55	E13	Electrical Demolition and Sequencing Power & I/C Plan 6 - New VFD SC-110-1122 & MCC-2A & 2B	HDR
56	E14	Electrical Demolition and Sequencing Power & I/C Plan 7 - New MCC 1A & 1B	HDR
57	E15	Electrical Demolition and Sequencing Power & I/C Plan 8 - Existing HVT-1B & Switchboard	HDR
58	E16	Electrical Demolition and Sequencing Power & I/C Plan 9 - New MCC 3A & 3B	HDR
59	E17	Electrical Demolition and Sequencing Power & I/C Plan 10 - Final Configuration	HDR
60	E18	Electrical Cable Tray Plan 1 - Power	HDR
61	E19	Electrical Cable Tray Plan 2 - Signal/Control	HDR
62	E20	Building Section Plan 1 - Pump Level	HDR

63	E21	Building Section Plan 2 - Electrical Room	HDR
64	E22	Electrical Grounding Plan	HDR
65	E23	Electrical Conduit and Cable Schedule 1	HDR
66	E24	Electrical Conduit and Cable Schedule 2	HDR
67	E25	Pump Control Schematic Diagram	HDR
68	E26	Misc. Instrumentation/Control Schematic Diagram 1 - Float, Level, Gas monitoring	HDR
69	E27	Misc. Instrumentation/Control Schematic Diagram 2 - MCC Pump Control Schematic	HDR
70	E28	Control/Communication Architecture	HDR
71	E29	Control/ communication Block Diagram 1 - Network Cabinet, VFDs & Main Switchboard	HDR
72	E30	Control/ communication Block Diagram 2 - MCCs	HDR
73	E31	AC/DC Power Distribution	HDR
74	E32	Control Panel BOM & Layout	HDR
75	E33	PLC Connection Diagram 1 - Digital Inputs	HDR
76	E34	PLC Connection Diagram 2 - Digital Outputs	HDR
77	E35	PLC Connection Diagram 3 - Analog Inputs	HDR
78	E36	PLC Connection Diagram 4 - Analog Outputs	HDR
<b><u>INSTRUMENTATION &amp; CONTROLS</u></b>			
79	I01	P&ID LEGENDS	HDR
80	I02	P&ID Diagram 1 - Pump 1	HDR
81	I03	P&ID Diagram 2 - Pump 2	HDR
82	I04	P&ID Diagram 3 - Pump 3	HDR
83	I05	P&ID Diagram 4 - Pump 4	HDR
84	I06	P&ID Diagram 5 - Pump 5	HDR
85	I07	P&ID Diagram 6 - Gas Monitoring	HDR

**EXHIBIT B  
FEE SCHEDULE**

**Clackamas County Water Environment Services  
Influent Pump Station Expansion  
Level of Effort Estimate Summary  
May 3, 2023**

WORK TASKS	Carollo Hours	Subtotal Carollo Cost	Subconsultant Cost				Total Cost
			HDR	West Yost	Clemson Engineering Hydraulics	Mechanical Solutions, Inc.	
<b>TASK 100 - PROJECT MANAGEMENT</b>							
<b>Task 100 Subtotal</b>	680	\$153,635	\$16,574	\$4,625	\$0	\$0	\$174,833
<b>TASK 200 - Kickoff Meeting and Site Investigation</b>							
<b>Task 200 Subtotal</b>	59	\$14,618	\$10,213	\$2,928	\$0	\$0	\$27,760
<b>TASK 300 - Data Review/Gap Analysis</b>							
<b>Task 300 Subtotal</b>	50	\$10,875	\$5,232	\$0	\$0	\$0	\$16,108
<b>TASK 400 - Design Flow Requirement</b>							
<b>Task 400 Subtotal</b>	353	\$78,816	\$9,875	\$0	\$0	\$0	\$88,691
<b>TASK 500 - Regulatory Coordination and Assistanct</b>							
<b>Task 500 Subtotal</b>	18	\$4,264	\$0	\$17,835	\$0	\$0	\$22,099
<b>TASK 600 - Pump Station and Procurement Alternative Analysis</b>							
<b>Task 600 Subtotal</b>	460	\$118,170	\$34,977	\$0	\$73,500	\$0	\$226,648
<b>TASK 700 - Preliminary Design</b>							
<b>Task 700 Subtotal</b>	648	\$144,341	\$142,101	\$3,631	\$0	\$0	\$290,073
<b>TASK 800 - Pump and Electrical Equipment Pre-Proceurement Services</b>							
<b>Task 800 Subtotal</b>	227	\$52,188	\$38,658	\$0	\$0	\$0	\$90,846
<b>TASK 900 - Final Design</b>							
<b>Task 900 Subtotal</b>	1,556	\$352,751	\$235,073	\$0	\$0	\$62,580	\$650,404
<b>TASK 1000 - Bid Period Services</b>							
<b>Task 1000 Subtotal</b>	110	\$27,698	\$16,862	\$0	\$0	\$0	\$44,560
<b>TASK 1100 - Quality Control</b>							
<b>Task 1100 Subtotal</b>	167	\$40,940	\$26,170	\$0	\$0	\$0	\$67,110
<b>TOTAL CONTRACT AMOUNT</b>	<b>4,329</b>	<b>\$998,297</b>	<b>\$535,735</b>	<b>\$29,018</b>	<b>\$73,500</b>	<b>\$62,580</b>	<b>\$1,699,131</b>



**Clackamas County Water Environment Services  
Influent Pump Station Expansion  
Level of Effort Estimate Detail - Carollo and Subconsultants  
May 3, 2023**

WORK TASKS	Principal in Charge	QC Reviewers	Project Manager	Design Manager	TECHNICAL EXPERT: Pump Station Lead	Pump Station Staff	TECHNICAL EXPERT: Process Model Expert	TECHNICAL EXPERT: CFD Modeling Lead	CFD Modeling and Process Support Staff	Structural Lead	Structural Staff	Civil/Site Lead	HVAC Lead	Cost Estimator	CAD/ Graphics Tech.	Technical Writer	WP/ Admin.	Carollo Hours	Carollo DL Cost	ODCs	Subtotal Carollo Cost	Subconsultant Cost				Total Cost		
																						HDR	West Yost	Clemson Engineering Hydraulics	Mechanical Solutions, Inc.			
Hourly Rate	\$250	\$250	\$250	\$203	\$301	\$166	\$255	\$258	\$172	\$250	\$187	\$250	\$234	\$203	\$203	\$180	\$113											
2024 Direct Labor (DL) Rates	\$250	\$250	\$250	\$214	\$319	\$175	\$270	\$273	\$181	\$250	\$198	\$250	\$247	\$214	\$214	\$190	\$119											
2025 Direct Labor (DL) Rates	\$250	\$250	\$250	\$226	\$338	\$185	\$286	\$290	\$191	\$250	\$209	\$250	\$250	\$226	\$226	\$201	\$126											
<b>TASK 100 - PROJECT MANAGEMENT</b>																												
<b>Subtask 110 - Project Management Plan</b>																												
1. Prepare a Draft Project Management Plan			36	12		12												4	64	\$ 13,884	\$ -	\$ 13,884	\$ 363	\$ -	\$ -	\$ -	\$ 14,248	
2. Implement Project Management Plan			4	12		12												4	32	\$ 5,884	\$ -	\$ 5,884	\$ -	\$ -	\$ -	\$ -	\$ 5,884	
			32															32	\$ 8,000	\$ -	\$ 8,000	\$ 363	\$ -	\$ -	\$ -	\$ 8,363		
<b>Subtask 120 - Project Monitoring and Reporting</b>																												
1. Develop and maintain the project schedule			253	351														12	616	\$ 139,751	\$ -	\$ 139,751	\$ 16,210	\$ 4,625	\$ -	\$ -	\$ 160,585	
2. Prepare monthly project status reports			24	24															48	\$ 10,869	\$ -	\$ 10,869	\$ -	\$ 702	\$ -	\$ -	\$ 11,571	
3. Manage and coordinate internal and external resources			36	84														12	132	\$ 28,442	\$ -	\$ 28,442	\$ 11,808	\$ 2,809	\$ -	\$ -	\$ 43,059	
4. Set-up subconsultant agreements and insurance			95	95															190	\$ 44,116	\$ -	\$ 44,116	\$ 4,402	\$ 1,113	\$ -	\$ -	\$ 49,631	
5. Conduct bi-weekly project management calls			8	32															40	\$ 8,860	\$ -	\$ 8,860	\$ -	\$ -	\$ -	\$ -	\$ 8,860	
			90	116															206	\$ 47,464	\$ -	\$ 47,464	\$ -	\$ -	\$ -	\$ -	\$ 47,464	
<b>Task 100 Subtotal</b>			289	363		12												16	680	\$ 153,635	\$ -	\$ 153,635	\$ 16,574	\$ 4,625	\$ -	\$ -	\$ 174,833	
<b>TASK 200 - Kickoff Meeting and Site Investigation</b>																												
<b>Subtask 200 - Kickoff Meeting and Site Investigation</b>																												
1. Prepare meeting materials			18	29	10													2	59	\$ 13,618	\$ 1,000	\$ 14,618	\$ 10,213	\$ 2,928	\$ -	\$ -	\$ 27,760	
2. Conduct kickoff meeting and site investigations			8	16															24	\$ 5,246	\$ -	\$ 5,246	\$ 3,626	\$ -	\$ -	\$ -	\$ 8,872	
3. Prepare draft meeting summary			8	8	10														26	\$ 6,631	\$ 1,000	\$ 7,631	\$ 5,820	\$ 2,226	\$ -	\$ -	\$ 15,677	
4. Prepare final meeting summary			1	3															5	\$ 972	\$ -	\$ 972	\$ 767	\$ 702	\$ -	\$ -	\$ 2,442	
			1	2															4	\$ 769	\$ -	\$ 769	\$ -	\$ -	\$ -	\$ -	\$ 769	
<b>Task 200 Subtotal</b>			18	29	10													2	59	\$ 13,618	\$ 1,000	\$ 14,618	\$ 10,213	\$ 2,928	\$ -	\$ -	\$ 27,760	
<b>TASK 300 - Data Review/Gap Analysis</b>																												
<b>Subtask 300 - Data Review/Gap Analysis</b>																												
1. Review available data and identify gaps or needs			6	24	2	4	6	2		2			2					2	50	\$ 10,875	\$ -	\$ 10,875	\$ 5,232	\$ -	\$ -	\$ -	\$ 16,108	
2. Summarize needs in a Data Gap Summary Memo			2	8	2	4	6	2		2			2						28	\$ 6,402	\$ -	\$ 6,402	\$ 1,345	\$ -	\$ -	\$ -	\$ 7,747	
3. Conduct data collection coordination meeting			2	12															16	\$ 3,161	\$ -	\$ 3,161	\$ 2,952	\$ -	\$ -	\$ -	\$ 6,114	
			2	4															6	\$ 1,311	\$ -	\$ 1,311	\$ 935	\$ -	\$ -	\$ -	\$ 2,246	
<b>Task 300 Subtotal</b>			6	24	2	4	6	2		2			2					2	50	\$ 10,875	\$ -	\$ 10,875	\$ 5,232	\$ -	\$ -	\$ -	\$ 16,108	
<b>TASK 400 - Design Flow Requirement</b>																												
<b>Subtask 410 - Design Flow Requirement Evaluation</b>																												
1. Review prior design flow projections and assumptions	2		19	31	48	56	56		24									2	238	\$ 53,911	\$ 1,000	\$ 54,911	\$ 3,740	\$ -	\$ -	\$ -	\$ 58,651	
2. Review DEQ pump station design requirements			6	8	12	8	12												46	\$ 11,122	\$ -	\$ 11,122	\$ -	\$ -	\$ -	\$ -	\$ 11,122	
3. Perform statistical flow frequency analysis and develop diurnal conditions			1	10	8	10	8												19	\$ 4,541	\$ -	\$ 4,541	\$ 3,215	\$ -	\$ -	\$ -	\$ 7,756	
4. Develop draft design conditions			4	16	40	40	40		24										85	\$ 18,381	\$ -	\$ 18,381	\$ -	\$ -	\$ -	\$ -	\$ 18,381	
5. Prepare for Design Flow Requirement and Regulatory Coordination Workshop	2		8	8	4	12	4												20	\$ 4,549	\$ -	\$ 4,549	\$ -	\$ -	\$ -	\$ -	\$ 4,549	
6. Conduct Design Flow Requirement and Regulatory Coordination Workshop			8	8	4	12	4												38	\$ 8,342	\$ -	\$ 8,342	\$ -	\$ -	\$ -	\$ -	\$ 8,342	
7. Prepare draft workshop summary			4	4	10	4													22	\$ 5,485	\$ 1,000	\$ 6,485	\$ 525	\$ -	\$ -	\$ -	\$ 7,010	
8. Prepare final workshop summary			1	3															5	\$ 972	\$ -	\$ 972	\$ -	\$ -	\$ -	\$ -	\$ 972	
			2	2															3	\$ 519	\$ -	\$ 519	\$ -	\$ -	\$ -	\$ -	\$ 519	
<b>Subtask 420 - Pump Station Capacity Requirement Technical Memorandum</b>																												
1. Prepare Draft Pump Station Capacity Requirement TM.			12	24	16	56												7	115	\$ 23,905	\$ -	\$ 23,905	\$ 6,135	\$ -	\$ -	\$ -	\$ 30,040	
2. Prepare Final Pump Station Capacity Requirement TM.			8	16	12	40													4	80	\$ 16,750	\$ -	\$ 16,750	\$ 4,002	\$ -	\$ -	\$ -	\$ 20,752
			4	8	4	16													3	35	\$ 7,155	\$ -	\$ 7,155	\$ 2,132	\$ -	\$ -	\$ -	\$ 9,287
<b>Task 400 Subtotal</b>	2		31	55	64	112	56		24									9	353	\$ 77,816	\$ 1,000	\$ 78,816	\$ 9,875	\$ -	\$ -	\$ -	\$ 88,691	
<b>TASK 500 - Regulatory Coordination and Assistance</b>																												
<b>Subtask 500 - Regulatory Coordination and Assistance</b>																												
1. Review design condition for DEQ compliance	3		10	5															18	\$ 4,264	\$ -	\$ 4,264	\$ -	\$ 17,835	\$ -	\$ -	\$ 22,099	
2. Prepare a written strategy to engage DEQ on alternative designs			2	2															4	\$ 906	\$ -	\$ 906	\$ -	\$ 2,783	\$ -	\$ -	\$ 3,688	
3. Prepare for Design Flow Requirement and Regulatory Coordination Workshop	2		2	2															6	\$ 1,406	\$ -	\$ 1,406	\$ -	\$ 4,041	\$ -	\$ -	\$ 5,447	
4. Conduct Design Flow Requirement and Regulatory Coordination Workshop																					\$ -	\$ -	\$ -	\$ -	\$ 2,226	\$ -	\$ 2,226	
5. Prepare draft workshop summary																					\$ -	\$ -	\$ -	\$ 2,226	\$ -	\$ -	\$ 2,226	
6. Prepare final workshop summary																					\$ -	\$ -	\$ -	\$ 848	\$ -	\$ -	\$ 848	
7. DEQ Coordination			5																		\$ -	\$ -	\$ -	\$ 702	\$ -	\$ -	\$ 702	
8. Prepare regulatory language for the Pump Station Capacity Requirement TM	1		1	1															5	\$ 1,250	\$ -	\$ 1,250	\$ -	\$ 2,226	\$ -	\$ -	\$ 3,476	
			1	1															3	\$ 703	\$ -	\$ 703	\$ -	\$ 2,783	\$ -	\$ -	\$ 3,485	
<b>Task 500 Subtotal</b>	3		10	5															18	\$ 4,264	\$ -	\$ 4,264	\$ -	\$ 17,835	\$ -	\$ -	\$ 22,099	
<b>TASK 600 - Pump Station and Procurement Alternative Analysis</b>																												
<b>Subtask 610 - Develop Conceptual Layout Alternatives</b>																												
1. Perform initial evaluation of pumps types			24	55	60	58		12	48	12	16	4						3	316	\$ 71,718	\$ 1,000	\$ 72,718	\$ 27,548	\$ -	\$ -	\$ -	\$ 100,265	
2. Perform initial evaluation of EIC requirements			4	8	8	24													36	\$ 7,619	\$ -	\$ 7,619	\$ -	\$ -	\$ -	\$ -	\$ 7,619	
3. Perform preliminary CFD modeling to confirm wet well hydraulics			2	4															6	\$ 1,357	\$ -	\$ 1,357	\$ 5,905	\$ -	\$ -	\$ -	\$ 7,262	
4. Perform preliminary review of capital and operating costs for each alternative			4	4	0	8	40												56	\$ 11,555	\$ -	\$ 11,555	\$ -	\$ -	\$ -	\$ -	\$ 11,555	
5. Provide structural input on supports and structural modifications for each alternative			6	4	16	24													74	\$ 16,814	\$ -	\$ 16,814	\$ 7,135	\$ -	\$ -	\$ -	\$ 23,949	
6. Identify general construction sequencing plan for each alternative			2	16	4						8	16							26	\$ 5,591	\$ -	\$ 5,591	\$ -	\$ -	\$ -	\$ -	\$ 5,591	
7. Prepare for Layout Review Workshop			4	8	12	8					0								22	\$ 5,203	\$ -	\$ 5,203	\$ 4,763	\$ -	\$ -	\$ -	\$ 9,966	
8. Conduct Layout Review Workshop			4	4	10	2					2	2							48	\$ 11,437	\$ -	\$ 11,437	\$ 3,150	\$ -	\$ -	\$ -	\$ 14,587	
9. Prepare draft workshop summary			4	4	10	2					2	2							24	\$ 6,443	\$ 1,000	\$ 7,443	\$ 1,575	\$ -	\$ -	\$ -	\$ 9,018</	





**Clackamas County Water Environment Services  
Influent Pump Station Expansion  
Level of Effort Estimate Detail - HDR  
May 3, 2023**

WORK TASKS	Principal	Project Manager	Design Manager	Project Electrical Engineer	Staff Electrical Engineer	Electrical Designer	Pump Station Peer Review	Tech Editor	Project Coordinator	Project Accountant	Quality Control	Total Hours	DL Cost	Expenses	Total Cost
	Miller, Joseph P	Arteaga, John	Best, Donald E	See, Yee Ping	Tee, Andrew Lee	Lee, Justin Joseph	Allaban, Charlie	Switzer, Jennifer M	Senseman, Christine H	Oxford, Christy	Various				
<b>Direct Labor (DL) Rates</b>	\$250.00	\$230.78	\$250.00	\$250.00	\$195.23	\$185.79	\$250.00	\$160.90	\$107.65	\$115.39	\$250				
<b>TASK 100 - PROJECT MANAGEMENT</b>															
<b>Subtask 110 - Project Management Plan</b>	0	0	0	0	0	0	0	0	0	3	0	3	\$346	\$0	\$346
1. Prepare a Draft Project Management Plan												0	\$0	\$0	\$0
2. Implement Project Management Plan		0								3		3	\$346	\$0	\$346
<b>Subtask 120 - Project Monitoring and Reporting</b>	6	40	0	0	0	0	0	0	18	24	0	88	\$15,438	\$0	\$15,438
1. Develop and maintain the project schedule												0	\$0	\$0	\$0
2. Prepare monthly project status reports	4	24							18	24		70	\$11,246	\$0	\$11,246
3. Manage and coordinate interal resources	2	16										18	\$4,192	\$0	\$4,192
4. Conduct weekly Project Management Calls												0	\$0	\$0	\$0
<b>Task 100 Subtotal</b>	6	40	0	0	0	0	0	0	18	27	0	91	\$15,784	\$0	\$15,784
<b>TASK 200 - Kickoff Meeting and Site Investigation</b>	0	3	6	14	16	0	0	1	0	0	0	40	\$8,977	\$750	\$9,727
1. Prepare meeting materials		1	2	4	8			1				16	\$3,454	\$0	\$3,454
2. Conduct Kickoff Meeting and Site investigations		1	4	8	8							21	\$4,793	\$750	\$5,543
3. Prepare draft meeting summary		1		2								3	\$731	\$0	\$731
4. Prepare final meeting summary												0	\$0	\$0	\$0
<b>Task 200 Subtotal</b>	0	3	6	14	16	0	0	1	0	0	0	40	\$8,977	\$750	\$9,727
<b>TASK 300 - Data Review/Gap Analysis</b>	0	0	4	4	14	0	0	0	0	0	1	23	\$4,983	\$0	\$4,983
1. Review available data and identify gaps or needs		0		2	4							6	\$1,281	\$0	\$1,281
2. Summarize needs in a Data Gap Summary Memo		0	2	2	8						1	13	\$2,812	\$0	\$2,812
3. Conduct Data Collection Coordination Meeting 1			2		2							4	\$890	\$0	\$890
<b>Task 300 Subtotal</b>	0	0	4	4	14	0	0	0	0	0	1	23	\$4,983	\$0	\$4,983
<b>TASK 400 - Design Flow Requirement</b>															
<b>Subtask 410 - Design Flow Requirement Evaluation</b>	0	0	4	2	8	0	2	0	0	0	0	16	\$3,562	\$0	\$3,562
1. Review prior design flow projections and assumptions												0	\$0	\$0	\$0
2. Review DEQ Pump Station Design Requirements			2	2	8		2					14	\$3,062	\$0	\$3,062
3. Perform statistical flow frequency analysis												0	\$0	\$0	\$0
4. Develop draft design conditions												0	\$0	\$0	\$0
5. Prepare for Design Flow Requirement and Regulatory Coordination Workshop												0	\$0	\$0	\$0
6. Conduct Design Flow Requirement and Regulatory Coordination Workshop			2									2	\$500	\$0	\$500
7. Prepare draft workshop summary												0	\$0	\$0	\$0
8. Prepare final workshop summary												0	\$0	\$0	\$0
<b>Subtask 420 - Pump Station Capacity Requirement Technical Memorandum</b>	0	0	3	6	12	0	3	0	0	0	2	26	\$5,843	\$0	\$5,843
1. Prepare Draft Pump Station Capacity Requirement TM.			2	4	8		2				1	17	\$3,812	\$0	\$3,812
2. Prepare Final Pump Station Capacity Requirement TM.			1	2	4		1				1	9	\$2,031	\$0	\$2,031
<b>Task 400 Subtotal</b>	0	0	7	8	20	0	5	0	0	0	2	42	\$9,405	\$0	\$9,405
<b>TASK 500 - Regulatory Coordination and Assistanct</b>	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0
1. Review design condition for DEQ compliance												0	\$0	\$0	\$0
2. Prepare a written strategy to engage DEQ on alternative designs												0	\$0	\$0	\$0
3. Prepare for Design Flow Requirement and Regulatory Coordination Workshop												0	\$0	\$0	\$0
4. Conduct Design Flow Requirement and Regulatory Coordination Workshop												0	\$0	\$0	\$0

**Clackamas County Water Environment Services**  
**Influent Pump Station Expansion**  
**Level of Effort Estimate Detail - HDR**  
**May 3, 2023**

WORK TASKS	Principal	Project Manager	Design Manager	Project Electrical Engineer	Staff Electrical Engineer	Electrical Designer	Pump Station Peer Review	Tech Editor	Project Coordinator	Project Accountant	Quality Control	Total Hours	DL Cost	Expenses	Total Cost
	Miller, Joseph P	Arteaga, John	Best, Donald E	See, Yee Ping	Tee, Andrew Lee	Lee, Justin Joseph	Allaban, Charlie	Switzer, Jennifer M	Senseman, Christine H	Oxford, Christy	Various				
<b>Direct Labor (DL) Rates</b>	\$250.00	\$230.78	\$250.00	\$250.00	\$195.23	\$185.79	\$250.00	\$160.90	\$107.65	\$115.39	\$250				
5. Prepare draft workshop summary												0	\$0	\$0	\$0
6. Prepare final workshop summary												0	\$0	\$0	\$0
7. DEQ Coordination												0	\$0	\$0	\$0
8. Prepare regulatory language for the Pump Station Capacity Requirement TM												0	\$0	\$0	\$0
<b>Task 500 Subtotal</b>	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0
<b>TASK 600 - Pump Station and Procurement Alternative Analysis</b>															
<b>Subtask 610 - Develop Conceptual Layout Alternatives</b>	0	0	21	39	48	6	0	0	0	0	0	114	\$25,486	\$750	\$26,236
1. Perform initial evaluation of pumps types												0	\$0	\$0	\$0
2. Perform initial evaluation of EIC requirements			4	6	16							26	\$5,624	\$0	\$5,624
3. Perform preliminary CFD modeling to confirm wet well hydraulics												0	\$0	\$0	\$0
4. Perform preliminary review of captial and operating costs for each alternative			2	8	22							32	\$6,795	\$0	\$6,795
5. Provide structural input on supports and structural modifications for each alternative												0	\$0	\$0	\$0
6. Identify general construction sequencing plan for each alternative			3	6	6	6						21	\$4,536	\$0	\$4,536
7. Prepare for Layout Review Workshop			3	6	0							9	\$2,250	\$750	\$3,000
8. Conduct Layout Review Workshop			2	4	0							6	\$1,500	\$0	\$1,500
9. Prepare draft workshop summary			1	1	0							2	\$500	\$0	\$500
10. Prepare final workshop summary			2	4	0							6	\$1,500	\$0	\$1,500
11. Provide support for preferred layout selection			4	4	4							12	\$2,781	\$0	\$2,781
<b>Subtask 620 - Preferred Alternative CFD and Physical Modeling</b>	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0
1. Perform CFD modelling of the preferred alternative												0	\$0	\$0	\$0
2. Perform physical modeling of the preferred alternative												0	\$0	\$0	\$0
<b>Subtask 630 - Procurement Option Evaluation</b>	0	0	4	4	26	0	0	0	0	0	0	34	\$7,076	\$0	\$7,076
1. Evaluate procurement options for the preferred alternative			2	2	18							22	\$4,514	\$0	\$4,514
2. Prepare a summary of equipment procurement strategies			2	2	8							12	\$2,562	\$0	\$2,562
<b>Task 600 Subtotal</b>	0	0	25	43	74	6	0	0	0	0	0	148	\$32,562	\$750	\$33,312
<b>TASK 700 - Preliminary Design</b>															
<b>Subtask 710 - Basis of Design Report</b>	0	0	6	28	60	80	3	8	0	0	0	185	\$37,114	\$0	\$37,114
1. Develop Draft BODR			4	12	50	60	2	6				134	\$26,374	\$0	\$26,374
2. Develop Final BODR			2	16	10	20	1	2				51	\$10,740	\$0	\$10,740
<b>Subtask 720 - 30% Design</b>	0	0	30	46	148	248	0	0	0	0	17	489	\$98,220	\$0	\$98,220
1. 30% Design Specifications			9	8	32	40					3	92	\$18,679	\$0	\$18,679
2. 30% Design Drawing Set			16	12	84	160					12	284	\$56,126	\$0	\$56,126
3. 30% Design Cost Estimate			2	12	8	38					2	62	\$12,622	\$0	\$12,622
4. Prepare for 30% Design Review Workshop			1	4	6	10						21	\$4,279	\$0	\$4,279
5. Conduct 30% Design Review Workshop			1	4	6							11	\$2,421	\$0	\$2,421
6. Prepare draft workshop summary				4	6							10	\$2,171	\$0	\$2,171
7. Prepare final workshop summary			1	2	6							9	\$1,921	\$0	\$1,921
<b>Task 700 Subtotal</b>	0	0	36	74	208	328	3	8	0	0	17	674	\$135,334	\$0	\$135,334
<b>TASK 800 - Pump and Electrical Equipment Pre-Procurement Services (Optional)</b>															
<b>Subtask 810 - Define Equipment for Pre-Procurement</b>	0	0	4	12	22	0	6	0	0	0	0	44	\$9,795	\$0	\$9,795
1. Identify list of equipment that may be pre-procured			2	6	10		4					22	\$4,952	\$0	\$4,952
2. Develop initial evaluation criteria for selection			2	6	12		2					22	\$4,843	\$0	\$4,843

**Clackamas County Water Environment Services  
Influent Pump Station Expansion  
Level of Effort Estimate Detail - HDR  
May 3, 2023**

WORK TASKS	Principal	Project Manager	Design Manager	Project Electrical Engineer	Staff Electrical Engineer	Electrical Designer	Pump Station Peer Review	Tech Editor	Project Coordinator	Project Accountant	Quality Control	Total Hours	DL Cost	Expenses	Total Cost
	Miller, Joseph P	Arteaga, John	Best, Donald E	See, Yee Ping	Tee, Andrew Lee	Lee, Justin Joseph	Allaban, Charlie	Switzer, Jennifer M	Senseman, Christine H	Oxford, Christy	Various				
<b>Direct Labor (DL) Rates</b>	\$250.00	\$230.78	\$250.00	\$250.00	\$195.23	\$185.79	\$250.00	\$160.90	\$107.65	\$115.39	\$250				
3. Prepare for Evaluation Criteria Workshop												0	\$0	\$0	\$0
4. Conduct Evaluation Criteria Workshop												0	\$0	\$0	\$0
5. Prepare Draft Meeting Summary												0	\$0	\$0	\$0
6. Prepare Final Meeting Summary												0	\$0	\$0	\$0
<b>Subtask 820 - Assemble Electrical Pre-Procurement Packages</b>	0	0	3	8	16	12	0	0	0	0	2	41	\$8,603	\$0	\$8,603
1. Prepare draft electrical pre-procurement documents			2	4	10	12					1	29	\$5,932	\$0	\$5,932
2. Prepare final electrical pre-procurement documents			1	4	6						1	12	\$2,671	\$0	\$2,671
<b>Subtask 830 - Assemble Pump Pre-Procurement Packages</b>	0	0	2	6	10	16	0	0	0	0	2	36	\$7,425	\$0	\$7,425
1. Prepare draft pump pre-procurement documents			1	2	4	6					1	14	\$2,896	\$0	\$2,896
2. Prepare final pump pre-procurement documents			1	4	6	10					1	22	\$4,529	\$0	\$4,529
<b>Subtask 840 - Respond to technical questions during advertising/bid period</b>	0	0	4	6	6	12	0	0	0	0	0	28	\$5,901	\$0	\$5,901
1. Provide responses to technical questions during bid period			2	2	6	12						22	\$4,401	\$0	\$4,401
2. Answer District questions during scoring and evaluation period			2	4								6	\$1,500	\$0	\$1,500
<b>Subtask 850 - Review Equipment Submittals</b>	0	0	4	6	12	0	0	0	0	0	1	23	\$5,093	\$0	\$5,093
1. Review pump submittals			2	2	4							8	\$1,781	\$0	\$1,781
2. Review electrical submittals			2	4	8						1	15	\$3,312	\$0	\$3,312
<b>Task 800 Subtotal</b>	0	0	17	38	66	40	6	0	0	0	5	172	\$36,817	\$0	\$36,817
<b>TASK 900 - Final Design</b>															
<b>Subtask 910 - 60% Design</b>	0	0	61	108	158	176	14	0	0	0	6	523	\$110,795	\$0	\$110,795
1. Prepare responses to District comments on the 30% design				8	12	12						32	\$6,572	\$0	\$6,572
2. Design Vibration Analysis Support												0	\$0	\$0	\$0
3. 60% Design Specifications			23	32	28	32	4				1	120	\$26,412	\$0	\$26,412
4. 60% Design Drawing Set			30	40	64	132	8				4	278	\$57,519	\$0	\$57,519
5. 60% Design Cost Estimate			2	20	36		2				1	61	\$13,278	\$0	\$13,278
6. Prepare for 60% Design Review Workshop			1	8	8							17	\$3,812	\$0	\$3,812
7. Conduct 60% Design Review Workshop			2		4							6	\$1,281	\$0	\$1,281
8. Prepare draft workshop summary			2		4							6	\$1,281	\$0	\$1,281
9. Prepare final workshop summary			1		2							3	\$640	\$0	\$640
<b>Subtask 920 - 90% Design</b>	0	0	49	70	140	162	0	0	0	0	4	425	\$88,180	\$0	\$88,180
1. Prepare responses to District comments on the 60% design		0	12	8	48							68	\$14,371	\$0	\$14,371
2. 90% Design Specifications		0	19	36	32	54					1	142	\$30,280	\$0	\$30,280
3. 90% Design Drawing Set		0	17	24	60	84					2	187	\$38,070	\$0	\$38,070
4. Building department permitting effort support												0	\$0	\$0	\$0
5. 90% Design Cost Estimate			1	2		24					1	28	\$5,459	\$0	\$5,459
<b>Subtask 930 - Bid Documents</b>	0	0	8	14	48	54	0	0	0	0	0	124	\$24,904	\$0	\$24,904
1. Bid Specifications			2	4	24							30	\$6,186	\$0	\$6,186
2. Bid Drawing Set			4	6	24	30						64	\$12,759	\$0	\$12,759
3. Final Cost Estimate		0	2	4		24						30	\$5,959	\$0	\$5,959
<b>Task 900 Subtotal</b>	0	0	118	192	346	392	14	0	0	0	10	1,072	\$223,879	\$0	\$223,879
<b>TASK 1000 - Bid Period Services</b>															
<b>Subtask 1010 - Attend Pre-Bid Conference</b>	0	0	2	0	0	0	0	0	0	0	0	2	\$500	\$0	\$500

**Clackamas County Water Environment Services  
Influent Pump Station Expansion  
Level of Effort Estimate Detail - HDR  
May 3, 2023**

WORK TASKS	Principal	Project Manager	Design Manager	Project Electrical Engineer	Staff Electrical Engineer	Electrical Designer	Pump Station Peer Review	Tech Editor	Project Coordinator	Project Accountant	Quality Control	Total Hours	DL Cost	Expenses	Total Cost
	Miller, Joseph P	Arteaga, John	Best, Donald E	See, Yee Ping	Tee, Andrew Lee	Lee, Justin Joseph	Allaban, Charlie	Switzer, Jennifer M	Senseman, Christine H	Oxford, Christy	Various				
<b>Direct Labor (DL) Rates</b>	\$250.00	\$230.78	\$250.00	\$250.00	\$195.23	\$185.79	\$250.00	\$160.90	\$107.65	\$115.39	\$250				
1. Attend Pre-Bid Conference			2									2	\$500	\$0	\$500
<b>Subtask 1020 - Respond to Bid Period Questions</b>	0	0	2	4	12	0	0	0	0	0	0	18	\$3,843	\$0	\$3,843
1. Provide responses to technical questions during bidding			2	4	12							18	\$3,843	\$0	\$3,843
<b>Subtask 1030 - Prepare Bid Document Addenda</b>	0	0	1	2	4	0	0	0	0	0	0	7	\$1,531	\$0	\$1,531
1. Prepare addenda to clarify and/or modify the Final Project Bidding documents			1	2	4							7	\$1,531	\$0	\$1,531
<b>Subtask 1040 - Prepare Conformed Documents</b>	0	0	8	12	24	0	0	0	0	0	2	46	\$10,186	\$0	\$10,186
1. Prepare Conformed Specifications			4	6	12						1	23	\$5,093	\$0	\$5,093
2. Prepare Conformed Drawings			4	6	12						1	23	\$5,093	\$0	\$5,093
<b>Task 1000 Subtotal</b>	0	0	13	18	40	0	0	0	0	0	2	73	\$16,059	\$0	\$16,059
<b>TASK 1100 - Quality Control</b>															
<b>Subtask 1110 - 30% Internal Quality Control Coordination</b>	0	0	0	0	0	0	4	0	0	0	10	14	\$3,500	\$0	\$3,500
1. Perform QA/QC review of 30% design documents											10	10	\$2,500	\$0	\$2,500
2. Perform pump selection peer review							4					4	\$1,000	\$0	\$1,000
3. Perform QA/QC review of WES Division 0 specifications												0	\$0	\$0	\$0
<b>Subtask 1020 - 60% Internal Quality Control Coordination</b>	0	4	4	0	0	0	0	0	4	0	21	33	\$7,604	\$0	\$7,604
1. Perform QA/QC and constructability review of the 60% design documents		4	4						4		21	33	\$7,604	\$0	\$7,604
<b>Subtask 1030 - 90% Internal Quality Control Coordination</b>	0	4	1	6	6	12	4	0	2	0	9	44	\$9,539	\$0	\$9,539
1. Perform QA/QC and constructability review of the 90% design documents		4	1	6	6	12	4	0	2	0	9	44	\$9,539	\$0	\$9,539
<b>Subtask 1040 - Bid Documents Internal Quality Control Coordination</b>	0	4	8	0	0	0	2	0	1	0	3	18	\$4,281	\$0	\$4,281
1. Perform QA/QC and constructability review of the Bid Documents		4	8	0	0	0	2	0	1	0	3	18	\$4,281	\$0	\$4,281
<b>Task 1100 Subtotal</b>	0	12	13	6	6	12	10	0	7	0	43	109	\$24,924	\$0	\$24,924
<b>TOTAL CONTRACT AMOUNT</b>	6	55	239	397	790	778	38	9	25	27	80	2,444	\$508,724	\$1,500	\$510,224

**Clackamas County Water Environment Services  
Influent Pump Station Expansion  
Level of Effort Estimate Detail - West Yost  
May 3, 2023**

WORK TASKS	Regulatory Lead	Regulatory Technical Advisor	Admin	Total Hours	DL Cost	Expenses	Total Cost
	Meyer	Kapur	TBD				
<b>Direct Labor (DL) Rates</b>	\$250	\$250	\$131				
<b>TASK 100 - PROJECT MANAGEMENT</b>							
<b>Subtask 110 - Project Management Plan</b>	0		0	0	\$0	\$0	\$0
1. Prepare a Draft Project Management Plan				0	\$0	\$0	\$0
1. Implement Project Management Plan				0	\$0	\$0	\$0
<b>Subtask 120 - Project Monitoring and Reporting</b>	14	0	5	19	\$4,155	\$249	\$4,404
1. Develop and maintain the project schedule	2		1	3	\$631	\$38	\$669
2. Prepare monthly project status reports	8		4	12	\$2,524	\$151	\$2,675
3. Manage and coordinate interal resources	4			4	\$1,000	\$60	\$1,060
4. Conduct weekly Project Management Calls				0	\$0	\$0	\$0
<b>Task 100 Subtotal</b>	14	0	5	19	\$4,155	\$249	\$4,404
<b>TASK 200 - Kickoff Meeting and Site Investigation</b>	10	0	1	11	\$2,631	\$158	\$2,789
1. Prepare meeting materials				0	\$0	\$0	\$0
2. Conduct Kickoff Meeting and Site investigations	8			8	\$2,000	\$120	\$2,120
3. Prepare draft meeting summary	2		1	3	\$631	\$38	\$669
4. Prepare final meeting summary				0	\$0	\$0	\$0
<b>Task 200 Subtotal</b>	10	0	1	11	\$2,631	\$158	\$2,789
<b>TASK 300 - Data Review/Gap Analysis</b>	0		0	0	\$0	\$0	\$0
1. Review available data and identify gaps or needs				0	0	0	0
2. Summarize needs in a Data Gap Summary Memo				0	\$0	\$0	0
3. Conduct Data Collection Coordination Meeting 1				0	\$0	\$0	\$0
<b>Task 300 Subtotal</b>	0		0	0	\$0	\$0	\$0
<b>TASK 400 - Design Flow Requirement</b>							
<b>Subtask 410 - Design Flow Requirement Evaluation</b>	0		0	0	\$0	\$0	\$0
1. Review prior design flow projections and assumptions				0	0	0	0
2. Review DEQ Pump Station Design Requirements				0	0	0	0
3. Perform statistical flow frequency analysis				0	0	0	0
4. Develop draft design conditions				0	0	0	0
5. Prepare for Design Flow Requirement and Regulatory Coordination Workshop				0	0	0	0
6. Conduct Design Flow Requirement and Regulatory Coordination Workshop				0	0	0	0
7. Prepare draft workshop summary				0	\$0	\$0	\$0
8. Prepare final workshop summary				0	\$0	\$0	\$0
<b>Subtask 420 - Pump Station Capacity Requirement Technical Memorandum</b>	0		0	0	\$0	\$0	\$0
1. Prepare Draft Pump Station Capacity Requirement TM.				0	\$0	\$0	\$0
2. Prepare Final Pump Station Capacity Requirement TM.				0	\$0	\$0	\$0
<b>Task 400 Subtotal</b>	0		0	0	\$0	\$0	\$0
<b>TASK 500 - Regulatory Coordination and Assistance</b>	52	10	4	66	\$16,024	\$961	\$16,985
1. Review design condition for DEQ compliance	8	2		10	\$2,500	\$150	\$2,650
2. Prepare a written strategy to engage DEQ on alternative designs	12	2	1	15	\$3,631	\$218	\$3,849



**Clackamas County Water Environment Services  
Influent Pump Station Expansion  
Level of Effort Estimate Detail - West Yost  
May 3, 2023**

WORK TASKS	Regulatory Lead	Regulatory Technical Advisor	Admin	Total Hours	DL Cost	Expenses	Total Cost
	Meyer	Kapur	TBD				
<b>Direct Labor (DL) Rates</b>	\$250	\$250	\$131				
3. Prepare for Design Flow Requirement and Regulatory Coordination Workshop	8			8	\$2,000	\$120	\$2,120
4. Conduct Design Flow Requirement and Regulatory Coordination Workshop	4	4		8	\$2,000	\$120	\$2,120
5. Prepare draft workshop summary	2		2	4	\$762	\$46	\$808
6. Prepare final workshop summary	2		1	3	\$631	\$38	\$669
7. DEQ Coordination	5			8	\$2,000	\$120	\$2,120
8. Prepare regulatory language for the Pump Station Capacity Requirement TM	8	2		10	\$2,500	\$150	\$2,650
<b>Task 500 Subtotal</b>	<b>52</b>	<b>10</b>	<b>4</b>	<b>66</b>	<b>\$16,024</b>	<b>\$961</b>	<b>\$16,985</b>
<b>TASK 600 - Pump Station and Procurement Alternative Analysis</b>							
<b>Subtask 610 - Develop Conceptual Layout Alternatives</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
1. Perform initial evaluation of pumps types				0	\$0	\$0	\$0
2. Perform initial evaluation of EIC requirements				0	\$0	\$0	\$0
3. Perform preliminary CFD modeling to confirm wet well hydraulics				0	\$0	\$0	\$0
4. Perform preliminary review of capital and operating costs for each alternative				0	\$0	\$0	\$0
5. Provide structural input on supports and structural modifications for each alternative				0	\$0	\$0	\$0
6. Identify general construction sequencing plan for each alternative				0	\$0	\$0	\$0
7. Prepare for Layout Review Workshop				0	\$0	\$0	\$0
8. Conduct Layout Review Workshop				0	\$0	\$0	\$0
9. Prepare draft workshop summary				0	\$0	\$0	\$0
10. Prepare final workshop summary				0	\$0	\$0	\$0
11. Provide support for preferred layout selection				0	\$0	\$0	\$0
<b>Subtask 620 - Preferred Alternative CFD and Physical Modeling</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
1. Perform CFD modelling of the preferred alternative				0	\$0	\$0	\$0
2. Perform physical modeling of the preferred alternative				0	\$0	\$0	\$0
<b>Subtask 630 - Procurement Option Evaluation</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
1. Evaluate procurement options for the preferred alternative				0	\$0	\$0	\$0
2. Prepare a summary of equipment procurement strategies				0	\$0	\$0	\$0
<b>Task 600 Subtotal</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>TASK 700 - Preliminary Design</b>							
<b>Subtask 710 - Basis of Design Report</b>	<b>10</b>	<b>2</b>	<b>2</b>	<b>14</b>	<b>\$3,262</b>	<b>\$196</b>	<b>\$3,458</b>
1. Develop Draft BODR	8	2	1	11	\$2,631	\$158	\$2,789
2. Develop Final BODR	2		1	3	\$631	\$38	\$669
<b>Subtask 720 - 30% Design</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
1. 30% Design Specifications				0	\$0	\$0	\$0
2. 30% Design Drawing Set				0	\$0	\$0	\$0
3. 30% Design Cost Estimate				0	\$0	\$0	\$0
4. Prepare for 30% Design Review Workshop				0	\$0	\$0	\$0
5. Conduct 30% Design Review Workshop				0	\$0	\$0	\$0
6. Prepare draft workshop summary				0	\$0	\$0	\$0
7. Prepare final workshop summary				0	\$0	\$0	\$0
<b>Task 700 Subtotal</b>	<b>10</b>	<b>2</b>	<b>2</b>	<b>14</b>	<b>\$3,262</b>	<b>\$196</b>	<b>\$3,458</b>

**Clackamas County Water Environment Services  
Influent Pump Station Expansion  
Level of Effort Estimate Detail - West Yost  
May 3, 2023**

WORK TASKS	Regulatory Lead	Regulatory Technical Advisor	Admin	Total Hours	DL Cost	Expenses	Total Cost
	Meyer	Kapur	TBD				
<b>Direct Labor (DL) Rates</b>	\$250	\$250	\$131				
<b>TASK 800 - Pump and Electrical Equipment Pre-Procurement Services (Optional)</b>							
<b>Subtask 810 - Define Equipment for Pre-Procurement</b>	0	0	0	0	\$0	\$0	\$0
1. Identify list of equipment that may be pre-procured				0	\$0	\$0	\$0
2. Develop initial evaluation criteria for selection				0	\$0	\$0	\$0
3. Prepare for Evaluation Criteria Workshop				0	\$0	\$0	\$0
4. Conduct Evaluation Criteria Workshop				0	\$0	\$0	\$0
5. Prepare Draft Meeting Summary				0	\$0	\$0	\$0
6. Prepare Final Meeting Summary				0	\$0	\$0	\$0
<b>Subtask 820 - Assemble Electrical Pre-Procurement Packages</b>	0	0	0	8	\$0	\$0	\$0
1. Prepare draft electrical pre-procurement documents				4	\$0	\$0	\$0
2. Prepare final electrical pre-procurement documents				4	\$0	\$0	\$0
<b>Subtask 830 - Assemble Pump Pre-Procurement Packages</b>	0	0	0	0	\$0	\$0	\$0
1. Prepare draft pump pre-procurement documents				0	\$0	\$0	\$0
2. Prepare final pump pre-procurement documents				0	\$0	\$0	\$0
<b>Subtask 840 - Respond to technical questions during advertising/bid period</b>	0	0	0	0	\$0	\$0	\$0
1. Provide responses to technical questions during bid period				0	\$0	\$0	\$0
2. Answer District questions during scoring and evaluation period				0	\$0	\$0	\$0
<b>Subtask 850 - Review Equipment Submittals</b>	0	0	0	0	\$0	\$0	\$0
1. Review pump submittals				0	\$0	\$0	\$0
2. Review electrical submittals				0	\$0	\$0	\$0
<b>Task 800 Subtotal</b>	0		0	8	\$0	\$0	\$0
<b>TASK 900 - Final Design</b>							
<b>Subtask 910 - 60% Design</b>	0	0	0	0	\$0	\$0	\$0
1. Prepare responses to District comments on the 30% design				0	\$0	\$0	\$0
2. Design Vibration Analysis Support				0	\$0	\$0	\$0
3. 60% Design Specifications				0	\$0	\$0	\$0
4. 60% Design Drawing Set				0	\$0	\$0	\$0
5. 60% Design Cost Estimate				0	\$0	\$0	\$0
6. Prepare for 60% Design Review Workshop				0	\$0	\$0	\$0
7. Conduct 60% Design Review Workshop				0	\$0	\$0	\$0
8. Prepare draft workshop summary				0	\$0	\$0	\$0
9. Prepare final workshop summary				0	\$0	\$0	\$0
<b>Subtask 920 - 90% Design</b>	0	0	0	0	\$0	\$0	\$0
1. Prepare responses to District comments on the 60% design				0	\$0	\$0	\$0
2. 90% Design Specifications				0	\$0	\$0	\$0
3. 90% Design Drawing Set				0	\$0	\$0	\$0
4. Building department permitting effort support				0	\$0	\$0	\$0
5. 90% Design Cost Estimate				0	\$0	\$0	\$0
<b>Subtask 930 - Bid Documents</b>	0		0	0	\$0	\$0	\$0
1. Bid Specifications				0	\$0	\$0	\$0
2. Bid Drawing Set				0	\$0	\$0	\$0

**Clackamas County Water Environment Services  
Influent Pump Station Expansion  
Level of Effort Estimate Detail - West Yost  
May 3, 2023**

WORK TASKS	Regulatory Lead	Regulatory Technical Advisor	Admin	Total Hours	DL Cost	Expenses	Total Cost
	Meyer	Kapur	TBD				
<b>Direct Labor (DL) Rates</b>	\$250	\$250	\$131				
3. Final Cost Estimate				0	\$0	\$0	\$0
<b>Task 900 Subtotal</b>	0		0	0	\$0	\$0	\$0
<b>TASK 1000 - Bid Period Services</b>							
<b>Subtask 1010 - Attend Pre-Bid Conference</b>	0	0	0	0	\$0	\$0	\$0
1. Attend Pre-Bid Conference				0	\$0	\$0	\$0
<b>Subtask 1020 - Respond to Bid Period Questions</b>	0	0	0	0	\$0	\$0	\$0
1. Provide responses to technical questions during bidding				0	\$0	\$0	\$0
<b>Subtask 1030 - Prepare Bid Document Addenda</b>	0	0	0	0	\$0	\$0	\$0
1. Prepare addenda to clarify and/or modify the Final Project Bidding documents				0	\$0	\$0	\$0
<b>Subtask 1040 - Prepare Conformed Documents</b>	0	0	0	0	\$0	\$0	\$0
1. Prepare Conformed Specifications				0	\$0	\$0	\$0
2. Prepare Conformed Drawings				0	\$0	\$0	\$0
<b>Task 1000 Subtotal</b>	0		0	0	\$0	\$0	\$0
<b>TASK 1100 - Quality Control</b>							
<b>Subtask 1110 - 30% Internal Quality Control Coordination</b>	0	0	0	0	\$0	\$0	\$0
1. Perform QA/QC review of 30% design documents				0	0	0	0
2. Perform pump selection peer review				0	\$0	\$0	\$0
3. Perform QA/QC review of WES Division 0 specifications				0	\$0	\$0	\$0
<b>Subtask 1020 - 60% Internal Quality Control Coordination</b>	0	0	0	0	\$0	\$0	\$0
1. Perform QA/QC and constructability review of the 60% design documents				0	0	0	0
<b>Subtask 1030 - 90% Internal Quality Control Coordination</b>	0	0	0	0	\$0	\$0	\$0
1. Perform QA/QC and constructability review of the 90% design documents				0	0	0	0
<b>Subtask 1040 - Bid Documents Internal Quality Control Coordination</b>	0	0	0	0	\$0	\$0	\$0
1. Perform QA/QC and constructability review of the Bid Documents				0	0	0	0
<b>Task 1100 Subtotal</b>	0	0	0	0	\$0	\$0	\$0
<b>TOTAL CONTRACT AMOUNT</b>	<b>86</b>	<b>12</b>	<b>12</b>	<b>118</b>	<b>\$26,072</b>	<b>\$1,564</b>	<b>\$27,636</b>