CLACKAMAS
WATER ENVIRONMENT SERVICES

GREGORY L. GEIST | DIRECTOR
Water Quality Protection
Surface Water Management
Wastewater Collection & Treatment

October 31, 2024 BCC Agenda Date/Item: _____

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

Approval of a Contract with Jacobs Engineering Group Inc. for aeration basin improvement design services. Contract Value is $849,058 for 5 years. Funding is through WES Sanitary Sewer Construction Funds.
No County General Funds are involved.

Previous Board Action/Review	Presented at Issues – October 29, 2024.		
Performance Clackamas	1. This project supports the WES Strategic Plan to provide enterprise resiliency, infrastructure strategy, and performance and operational optimization. 2. This project supports the County's Strategic Plan of building a strong infrastructure that delivers services to customers and honors, utilizes, promotes and invest in our natural resources.		
Counsel Review	Yes	**Procurement Review**	Yes
Contact Person	Jeff Stallard	**Contact Phone**	503-278-2311

EXECUTIVE SUMMARY: The aeration basins at the Tri-City Water Resource Recovery Facility consist of four large concrete tanks that were originally built in the 1980's as part of Tri-City's initial construction. The aeration basins are a critical part of the secondary treatment process that removes organic matter from wastewater, which is necessary for permit compliance.

The aeration system is comprised of pumps, pipes, blowers, instrumentation, and electronic controls that must constantly work together to precisely control the flow of oxygen while managing energy consumption. These parts have naturally experienced extensive wear and tear over the years, and both the Willamette Facilities Plan and the adopted WES Capital Improvement Plan identify the need to rehabilitate Tri-City's aeration treatment system.

This contract is for engineering design services for the aeration basin improvements. A future amendment to add engineering services during construction of the improvements is anticipated.

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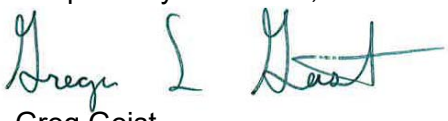
RECOMMENDATION: Staff recommends that the Board of County Commissioners of Clackamas County, acting as the governing body of Water Environment

Services, approve Contract 1013 with Jacobs Engineering Group Inc. for services necessary to design aeration basin improvements.

Respectfully submitted,



Greg Geist
Director, WES

Attachment: Jacobs Engineering Group Inc. Contract #1013

WATER ENVIRONMENT SERVICES
PERSONAL SERVICES CONTRACT
Contract #1013

This Personal Services Contract (this "Contract") is entered into between **Jacobs Engineering Group Inc.** ("Contractor"), and Water Environment Services, an intergovernmental entity formed pursuant to ORS Chapter 190 ("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 30, 2029**.

2. **Scope of Work.** Contractor shall provide the following engineering necessary to design Tri-City Water Resources Recovery Facility Aeration Basin Improvements ("Work"), further described in **Exhibit A.**

3. **Consideration.** The District agrees to pay Contractor, from available and authorized funds, a sum not to exceed **Eight Hundred Forty-Nine Thousand Fifty-Eight dollars ($849,058.00)**, for accomplishing the Work required by this Contract. Consideration rates are on a fixed fee basis in accordance with the rates and costs specified in Exhibit A. If any interim payments to Contractor are made, such payments shall be made only in accordance with the schedule and requirements in Exhibit A.

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. Contractor shall submit invoices in proper form within sixty (60) calendar days after the end of the month in which the services were rendered. 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: Wes-payables@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, and Exhibit A.

7. Contractor and District Contacts.

Contractor	District
Administrator: Todd Dye Phone: 541-908-6036 Email: todd.dye@jacobs.com	Administrator: Haakon Ogbeide Phone: 971-803-2955 Email: Hogbeide@clackamas.us

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 three (3) 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 to the extent caused by any negligent act or omission 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 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 include the District and Clackamas County as an additional insureds on all required liability policies, except for Workers Compensation and Professional Liability. 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 the County Contract Analyst.

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.
☒ Required – Commercial General Liability: with limits of $1,000,000 per occurrence, with an annual aggregate limit of $2,000,000 for Bodily Injury and Property Damage.
☒ Required – Professional Liability: with limits of $1,000,000 per claim, with an annual aggregate limit of $2,000,000 for damages caused by error, omission or negligent acts.
☒ Required – Automobile Liability: combined single limit, or the equivalent, with limits of $1,000,000 per accident for Bodily Injury and Property Damage.

The policy(s) shall be primary insurance as respects to the District, except for Workers Compensation and Professional Liability. Any insurance or self-insurance maintained by the District shall be excess and shall not contribute to it, except for Workers Compensation and Professional Liability. 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 Contact 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. 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, 28 and 32, 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. **TERMINATION.** 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. **Reserved.**

29. **Reserved.**

30. **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 District with such Key Person's services unless the District provides prior written consent to such reassignment or transfer.

31. Reserved.

32. MERGER. THIS CONTRACT CONSTITUTES THE ENTIRE AGREEMENT BETWEEN THE PARTIES WITH RESPECT TO THE SUBJECT MATTER REFERENCED THEREIN. THERE ARE NO UNDERSTANDINGS, AGREEMENTS, OR REPRESENTATIONS, ORAL OR WRITTEN, NOT SPECIFIED HEREIN REGARDING THIS CONTRACT. NO AMENDMENT, CONSENT, OR WAIVER OF TERMS OF THIS CONTRACT SHALL BIND EITHER PARTY UNLESS IN WRITING AND SIGNED BY ALL PARTIES. ANY SUCH AMENDMENT, CONSENT, OR WAIVER SHALL BE EFFECTIVE ONLY IN THE SPECIFIC INSTANCE AND FOR THE SPECIFIC PURPOSE GIVEN. CONTRACTOR, BY THE SIGNATURE HERETO OF ITS AUTHORIZED REPRESENTATIVE, IS AN INDEPENDENT CONTRACTOR, ACKNOWLEDGES HAVING READ AND UNDERSTOOD THIS CONTRACT, AND CONTRACTOR AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS.

By their signatures below, the parties to this Contract agree to the terms, conditions, and content expressed herein.

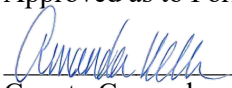
Jacobs Engineering Group Inc.	Water Environment Services
	
10/15/2024	
Authorized Signature Date	Chair Date
Client Account Manager, VP	
Name / Title (Printed)	Recording Secretary
064469-83	
Oregon Business Registry #	Approved as to Form:
FBC/Delaware	 10/15/2024
Entity Type / State of Formation	County Counsel Date

EXHIBIT A
PERSONAL SERVICES CONTRACT
SCOPE OF WORK

EXHIBIT A – SCOPE OF WORK
Clackamas County Water Environment Services
Tri-City WRRF Aeration Basin Improvements Project – Jacobs Contract #1013; WES Project #700224304 Design Services, Engineering Services During Construction and Construction Management Services

Contents

Attachments
Attachment A: Preliminary Drawing List
Attachment B: Level of Effort and Pricing
Attachment C: Preliminary Schedule

Background

Clackamas Water Environment Services (District) has identified operational and condition-based improvements required to provide improved process performance and increased reliability of the existing aeration facilities at the Tri-City Water Resource Recovery Facility (TCWRRF). Jacobs (Consultant) shall provide design services and engineering Services During Construction (SDC) as defined below.

The design services will include an existing system evaluation, 30% preliminary design, midpoint design review, 90% draft contract and 100% bid ready documents. Construction of the improvements is expected to be via traditional design-bid-build in a single contract for construction over multiple construction seasons.

Consultant's SDC are intended to assist the District to administer the contract for construction, monitor the performance of the construction contractor, verify that the contractor's work is in substantial compliance with the Contract Documents, and assist the District in responding to events that occur during the construction. These SDC are based upon the understanding that the District will contract directly with the General Contractor and will be actively involved in the

construction process to make decisions, provide approvals, and perform other actions necessary for the completion of the construction.

Assumptions – General

The following key assumptions were used when determining the scope, level of effort compensation to the Consultant. These assumptions are in addition to those included in the Scope of Services.

1. The design will be based on standards in effect on the effective date of the notice to proceed.
2. Meetings and Workshops will be held virtually, except as specifically noted.
3. Consultant will submit minutes from each workshop not later than 5 working days following each respective workshop.
4. Consultant will use the Construction Specifications Institute (CSI) 49 Division format master specifications.
5. Consultant will provide Division 1 and technical specifications for project use with District review and comment.
6. Drawings (11-inch by 17-inch) in electronic PDF format will be provided for each District internal review. Jacobs will provide Bluebeam Revu session (District will provide free Bluebeam software license to its staff) to allow District collaboration on review of design documents.
7. Where deliverable documents are identified, hereinafter, electronic copies of the deliverable will be provided in PDF format and original DOC format.
8. The Consultant's standard CAD software (MicroStation) will be used to produce the drawings, in conformance with Jacobs CAD drafting standards which are based on US National CAD standard.
9. The site is free of any hazardous wastes, asbestos, lead paint or other types of contamination that might require remediation.
10. In providing opinions of cost, financial analyses, economic feasibility projections, and schedules for the Project, Consultant has no control over cost or price of labor and materials; unknown or latent conditions of existing equipment or structures that may affect operation or maintenance costs; competitive bidding procedures and market conditions; time or quality of performance by operating personnel or third parties; and other economic and operational factors that may materially affect the ultimate Project cost or schedule. Therefore, Consultant makes no warranty that District's actual Project costs, financial aspects, economic feasibility, or schedules will not vary from Consultant opinions, analyses, projections, or estimates.
11. Consultant's design services are expected to last 15 months from notice to proceed through bid phase services.
12. The Consultant's project management task scope assumes a 15 month duration from notice to proceed through the end of Design services (Tasks 2 through 5) and Bid Phase Services (Task 7) and does not include project management during future engineering services during construction. It is assumed that project management scope for engineering services during construction will be negotiated as part of an addendum adding the engineering services

during construction tasks to the scope. It should be noted that Task 10 Control System Software Services will occur beyond the end of the 15 month design phase, and Project Management costs for that duration have not been included.

District-provided Services

1. The District will provide to Consultant all known data in District's possession relating to Consultant's services on the Project including process operational data, facility record drawings, operations and maintenance information, SCADA programming and CAD drawings when available. Consultant will reasonably rely upon the accuracy, timeliness, and completeness of the information provided by District.
2. The 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. The District will furnish required information, examine deliverables submitted by Consultant, and render decisions and approvals in a timely manner.
4. The 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. The District will provide Division 00 procurement and contracting specifications.
6. The District will perform required permitting activities.
7. The District will pre-purchase select equipment and/or materials to minimize schedule impacts if necessary. Consultant will evaluate long-lead time items that may require owner-furnished procurement, and will prepare owner-furnished specifications as an optional scope item to support the procurement effort.
8. The District will send diffusers to existing diffuser manufacturer to evaluate condition.
9. The District will provide to Consultant any recent process modeling (e.g. BioWin model prepared during facilities planning by others) and other process/operations related data.
10. The District will participate in regularly scheduled project status meetings.

Task 1 Project Management

1.1 Progress Meetings and Updates

The Consultant's project manager will meet with District's project manager weekly to review project progress, schedule, and discuss upcoming work activities during the design and bid phases. The Consultant's project manager shall meet with District's project manager periodically throughout the construction phases of the project to review project progress and discuss upcoming work activities.

1.2 Project Work Plan

The purpose of this task is to prepare a project work plan that will be used during the execution of this project work. Specific elements of the plan will include definition of District and Consultant project organization, communication, project cost control procedures, document

control, health and safety plan, change management and other project management requirements.

1.3 Decision Log

The Consultant's project manager will prepare and keep current a decision log documenting key project decisions.

1.4 Invoicing, Cost and Schedule Control

The Consultant's project manager will manage, administer, coordinate, and integrate work of the Consultant's team as required to deliver the project within budget and on schedule.

Consultant's project manager will prepare and submit to the District's project manager on a monthly basis, an invoice, a brief cost and schedule status report and updated summary project schedule showing actual versus projected.

Task 1 Deliverables:

- Project Work Plan
- Weekly Project Management meeting notes
- Decision Log
- Monthly Invoice and Narrative

Task 2 Existing System Evaluation

Task Assumptions:

1) The condition of existing concrete at aeration basins (influent channel, effluent channel, elevated slabs, aeration basins walls and floor) will be assessed for carbonation, cracking, spalling, deteriorated joint sealants and other structural defects. Each aeration basin (1 through 4) will be evaluated.

2) The District will provide the Consultant with an inventory of Aeration Basin mechanical components and their condition.

3) The existing system evaluation will include assessment of the following systems that support the supply and control of aeration basin flow streams including: primary effluent wastewater, low pressure aeration air, return activated sludge, and mixed-liquor return. Evaluation of these systems will include the following subsystem evaluations:

    a. Condition, capacity/size, operational capability, of Instrumentation and Control related equipment and systems hardware (e.g. programmable logic controllers, instruments, conduits, communications wiring), communications protocols, and control logic/software programming.

    b. Condition, capacity/size and operational capability the aeration system including water control gates (slide gates, sluice gates and actuators), process air valves and actuators, reclaimed water system that flushes basin floors, mud valves, mixers, mixed liquor recycle system (pumps, valves, piping), diffused air system (membrane disc diffusers, laterals, headers, drop legs and process piping).

    c. Condition and capacity of existing electrical systems including conduit and conductor condition, and spare conduit capacity. It is assumed that the number and type of

equipment being replaced will be roughly equivalent to the existing equipment and systems being replaced, and that existing motor control center(s) have sufficient capacity for incremental capacity upgrades.

d. Condition and capacity of existing high-pressure pneumatic air system.

4) It assumed that no major improvements to MBR treatment, secondary clarifiers, sludge pumping, or aeration blowers are included in this project.

2.1 Kickoff Meeting

The Kickoff meeting will be scheduled within two weeks of Notice to Proceed. The objective of the 1-hour meeting is to communicate the schedule, critical path items, and discuss project objectives and key decision points. The kickoff meeting will also include scheduling site visits. The Kickoff Meeting will be attended by Consultant's Project Manager, Design Manager, Process Engineer, Instrumentation and Controls Engineer, Mechanical Engineer, Electrical Engineer, Structural Engineer, Coating and Corrosion Engineer and Operations and Maintenance Subconsultant.

Deliverables:

- Kickoff Meeting Agenda and Minutes
- Action Item Log
- Decision Log

2.2 Data Request and Initial Analysis

The purpose of this task is to collect relevant and available information to develop a basic understanding of the existing aeration system as it relates to the objectives of this project. This is expected to include existing records (drawings and O&M manuals), process operations data and existing BioWin model. The data request will be submitted to the District prior to Site Visits. Consultant shall perform an initial analysis of the District-provided information including SCADA historical data and existing documentation relevant to the aeration basins and surrounding areas.

Deliverables:

- Email request for information.

2.3 Site Visits to TCWRRF Facility

Conduct site visits to the TCWRRF with District O&M staff to view instrument and control systems, mechanical equipment and piping, electrical equipment and systems, and basin structural concrete. Assume a minimum of two days of site visits plus travel by Consultant, including Project Manager, Design Manager, Instrumentation and Controls Engineer, Process Engineer, Mechanical Engineer, Electrical Engineer, and Structural Engineer.

2.4 Concrete Condition Assessment

The concrete condition assessment will include inspection 2 of the aeration basins. The assessment will use a graded approach with the following steps:

- **Visual Inspection:** Visual inspection will identify cracks, spalling, exposed reinforcement, deteriorated joint sealants, and other indicators of structural defects (e.g., rust staining). The next step will include pH testing of existing concrete to determine the depth of carbonated concrete that may require refurbishment. If the encountered depth of carbonated concrete exceeds ¼ inch, additional non-destructive and destructive testing is recommended to determine the density and soundness of the concrete. The testing recommended is as follows:
- **Penetration Testing:** This test uses a Windsor Probe to drive a hardened steel shape into the concrete using a powder-actuated charge. Based upon the penetration depth, Moh's hardness of the concrete can be determined using a calibrated chart and compared to the corresponding concrete strength. It would be recommended that the penetration testing occurs two basins at a minimum of 5 distinct locations per basin to determine the concrete properties.

Task 3 Preliminary 30% Design

The preliminary design will build on topics discussed during the kickoff meeting along with existing data and site specific knowledge.

3.1 Workshop 1 (Review Control Alternatives)

Workshop 1 will be approximately 2 hours and will be attended by Consultant's Project Manager, Design Manager, Instrumentation and Controls Engineer, and Process Engineer and Operations and Maintenance Subconsultant. The goal of the workshop will be to review aeration process control alternatives and evaluate replacement of the current Profibus communications protocol to/from existing field instruments and valves.

Deliverables:

- Workshop Agenda & Materials
- Workshop 1 Meeting Minutes
- Action Item Log Update
- Decision Log Update

3.2 Workshop 2 (Confirm Equipment, Control Approach, and Basis of Design)

Workshop 2 will be a 2 hour workshop held after completion of Workshop 1 (Task 3.1), the Existing Systems Evaluations (Task 2) and associated site visits and field activities. Workshop 2 will be attended by the Consultant's Project Manager, Design Manager, Structural Engineer, Corrosion and Coatings Engineer, Process Engineer, Mechanical Engineer, Electrical Engineer, Instrumentation and Controls Engineer, and Operations and Maintenance Subconsultant. The workshop will confirm the scope of existing equipment and systems upgrades to be included in the Basis of Design report.

Deliverables:

- Workshop Agenda & Materials
- Workshop 2 Meeting Minutes
- Action Item Log Update

- Decision Log Update

3.3 Preliminary (30%) Design Documents

The purpose of this task is to finalize and document the design approach in preliminary design report. The report will be used as the Basis of Design for the 90% Contract Documents.

The baseline design scope includes the following upgrades to the aeration basins based on the Tri-City Facilities Plan (Carollo, 2022) condition assessment recommendations:

1. Rehabilitate CAS AB1, AB2, AB3, and AB4 Complete Mix Effluent Channel Isolation Gates.
2. Replace CAS AB1, AB2, AB3, and AB4 Zone A, B, C, and D Dissolved Oxygen Transmitters
3. Rehabilitate CAS AB1-2 and AB3-4 Dewatering Pumps; replace Isolation Valves
4. Rehabilitate CAS AB1, AB2, AB3, and AB4 structural cracks and joint sealants, including repair of cracks, cleaning and resealing of expansion joints (including addressing leakage into RAS building and pipe galleries), removal of organic debris from surfaces of the effluent channel, securing end supports of the walkway bridges, and filling gaps in the walkways to ensure a safe walking surface. This item does not include full refurbishment of the concrete surfaces within the basins to address concrete carbonation.
5. Replace ML Flume No. 2 (Select Treat) Bypass Gate.
6. Rehabilitate CAS AB Effluent Isolation Gate.
7. Rehabilitate CAS AB1, AB2, AB3, and AB4 Effluent Gates.
8. Replace CAS AB1, AB2, AB3, and AB4 Mixers 1 and 2.
9. Replace CAS AB1, AB2, AB3, and AB4 Zone A, B, C, and D Flow Control Valves.
10. Replace CAS AB1, AB2, AB3, and AB4 Zone A, B, C, and D Flow Indicating Transmitters.
11. Rehabilitate CAS AB4 Actuated Wall Valves No. 1, 2, and 3.
12. Replace CAS Channel Blowers 1 and 3 Temp Switch High.
13. Replace CAS Primary Effluent Channel Level Indicating Transmitter.
14. Rehabilitate CAS/MBR AB4 Isolation Valve.
15. Rehabilitate ML Flume Box Influent Gate.
16. Rehabilitate ML Flume No. 1 and 2 Effluent Gates.

Items recommended for rehabilitation in the Tri-City Facilities Plan (Carollo, 2022)recommendations will be reviewed based on the condition assessment site visits in Task 2, and where appropriate, the recommendation for full replacement may be made. If additional replacement or refurbishment is outside of the baseline list of 16 items is identified during Task 2 System evaluation, the additional design scope will be negotiated by amendment.

Deliverables:

- Draft/Final Preliminary Basis of Design Report Summarizing the design approach including:
  - Summary of existing system evaluation and condition assessment findings
  - Recommendations for concrete rehabilitation approach
  - Recommendations for mechanical, electrical and instrumentation and control equipment and system replacements, upgrades, or refurbishment
  - Recommended approach for replacement of existing Profibus communications protocol replacement
  - Recommendations for construction sequencing and constraints
  - Preliminary construction schedule (in MS Project)
  - Recommendations for bidding approach (base bid, bid alternates, lump sum and unit price work)
- 30% design drawings including:
  - Preliminary structural plans and sections
  - Preliminary P&IDs
  - Preliminary Control Block Diagram (PLC/HMI Network Diagram)
  - Preliminary mechanical plans and sections
  - Preliminary electrical plans and one-line diagrams
- Control Logic Concept
  - Recommendations for aeration control strategies and capacity upgrades.
  - Preliminary HMI Screens
  - Preliminary Control Loop Descriptions
- Construction Cost Estimate (AACE Class 4 estimate)

A preliminary design and construction schedule is provided as Attachment C to this SOW which will be further evaluated during design. The preliminary construction schedule shows a 2 year construction duration, which is WES's preferred timeline for construction implementation.

If full rehabilitation of concrete in the aeration basins is necessary, completion of improvements to two aeration basins in a single season will require the Contractor to performed work in both basins fully in parallel with two separate crews for each trade. Construction of two basins in one dry season also has increased risk to operations if the Contractor is delayed in completing work and returning the basins to service by the end of the dry season.

3.4 Preliminary Design Review Workshop

The Preliminary Design Review workshop will be held virtually approximately one week after the Preliminary Design Documents are submitted and reviewed by the district. The Preliminary Design Review Workshop will be attended by the Consultant's Project Manager, Design Manager, Structural Engineer, Corrosion and Coatings Engineer, Process Engineer, Mechanical Engineer, Electrical Engineer, Instrumentation and Controls Engineer, and Operations and Maintenance Subconsultant.

Deliverables:

- Design Review Meeting Agenda & Materials
- Design Review Meeting Minutes
- Action Item Log Update
- Decision Log Update

Task 4 Draft Contract Documents (90% Design)

4.1 90% Midpoint Design Review

The purpose of the mid-point design review workshop is to address design items typically addressed at the 60% phase of the project without formal review documents. The midpoint design review will address District comments on the 30% design deliverables and provide a status update on progress since the 30% design deliverable and any key design issues requiring District input or decisions. The midpoint design workshop will be attended by the Consultant's Project Manager, Design Manager, Structural Engineer, Corrosion and Coatings Engineer, Process Engineer, Mechanical Engineer, Electrical Engineer, Instrumentation and Controls Engineer, and Operations and Maintenance Subconsultant.

Deliverables:

- Workshop Agenda & Materials
- Mid-Point Design Workshop Meeting Minutes
- Action Item Log Update
- Decision Log Update

4.2 Draft Contract Documents (90% Deliverables)

The baseline scope elements include the 16 items identified in Task 3.

The purpose of the draft contract document task is to finalize the design pending District's review and feedback on the contract documents. All specifications and drawing will be completed to the 90% level or greater. The consultant will also provide support to the District in preparing required permits (e.g. Building, Mechanical, Electrical). The District will submit and obtain all required permits. The anticipated drawing list is provided as Attachment 1 to this SOW.

Deliverables:

- Process Control Narratives
- Draft Contract Documents
  - Draft Construction Specification Including (Division 00 & 01)
- Draft Plans and Drawings
- Draft Permit Applications
- Stamp/sealed drawings for outside agency permit review, if required
- Critical path Construction Schedule (MS Project)
- Construction cost estimate (AACE Class 1 Estimate)
- Tabular bid schedule for District's use on Bid Form (including bid items for lump sum, unit price, and allowances)

4.3 Draft Contract Review Workshop

The draft contract review workshop will be held virtually approximately one week after the draft contract documents are submitted and reviewed. The Draft Contract review workshop will be attended by the Consultant's Project Manager, Design Manager, Structural Engineer, Corrosion and Coatings Engineer, Process Engineer, Mechanical Engineer, Electrical Engineer, Instrumentation and Controls Engineer, and Operations and Maintenance Subconsultant.

Deliverables:

- Workshop Agenda & Materials
- Contract Document Review Workshop Meeting Minutes
- Action Item Log Update
- Decision Log Update

Task 5 Final Contract Documents (100% / Bid Deliverables)

The purpose of this task is to incorporate District comments, prepare final bid documents, and seal/deliver them to the District.

Deliverables:

- Bid Contract Documents
  - Bid Specifications
  - Bid Plans and Drawings
- Critical path Construction Schedule (MS Project)
- Construction cost estimate (AACE Class 1 Estimate)
- Tabular bid schedule for District's use on Bid Form (including bid items for lump sum, unit price, and allowances)

Task 6 Optional Scope Elements

The following subtasks that are optional scope elements that will only be performed upon authorization from the District.

6.1 Preliminary (30%) Design

Additional scope elements include the following items not included in the baseline scope if removal is required for the full concrete rehabilitation:

- Full concrete demolition and refurbishment
- Demolition and replacement of all in basin piping
- Demolition and replacement of aeration diffuser grids

These additional scope elements will be incorporated into the deliverables for the Preliminary Design, provided they a decision is made to include them no later than Preliminary Design Workshop 2.

6.2 Draft Contract Documents (90% Design)

Additional scope elements include incorporation of the items identified in Task 6.1 into the 90% deliverables.

6.3 Final Contract Documents (100% / Bid Deliverables)

Additional scope elements include incorporation of the items identified in Task 6.1 into the 100% deliverables.

6.4 Procurement Support for Owner Furnished Equipment and Materials

This optional task includes preparation of equipment specifications (draft and final), and support District procurement of select materials and equipment. This task includes an allowance for submittal review of Owner-furnished equipment and materials. For budget purposes, it is assumed that two mechanical related technical specification sections and two instrumentation & control related technical specification sections will be prepared. It is assumed that the District will prepare the Div 00 procurement specifications with support from the Consultant.

Deliverables:

- Draft equipment technical specifications
- Final equipment technical specifications

6.5 Process Modeling Support

This optional task includes review and analysis of existing BioWin modeling, with additional model runs and recommendations for process operation and efficiency analysis if requested by the District. This optional tasks assumes a total of 42 hours of modeling support.

Task 7 Quality Management

As part of each design phase, the Consultant will carry out a quality assurance program (QAP). The purpose of this QAP is to monitor the quality of the Project through the use of internal quality assurance/quality control (QA/QC) reviews as described herein. The Consultant will manage multidiscipline internal QA/QC review activities with senior review team. A QC review will be performed on process and cost calculations. A formal internal QA/QC review will be performed prior to the District review of deliverables.

A Quality Management Plan (QMP) will be prepared for the project to serve as a guide for all phases of the project. Key features of the QMP will include:

- A single point of contact responsible for all quality management.
- Independent quality review performed by discipline-specific quality reviewers to provide critical analysis without bias.
- Procedures for engineers; detailed checks of reports, calculations, drawings and specifications.

Audits by QA personnel may be conducted to verify conformance with the approved QMP and confirm that required checking and review functions are completed.

Design quality review documentation will demonstrate that quality review process is complete and review comments are acceptably addressed as a component of the overall records management system. The following documentation will be prepared, collected and properly stored in the project records system:

- Quality review forms used during internal quality reviews and issue tracking forms used to document those issues.
- Design review forms used by the District to document review comments.
- Technical verification forms signed by the reviewer and the appropriate project staff.
- Review-related correspondence with District staff and other external agencies or entities
- Audit correspondence, including results and corrective action documentation.

The level of effort for this task includes preparation of the QMP and QC reviews for each of the design phases.

Deliverables:

- Quality Management Plan
- Written documentation of QC reviews

Task 8 Bid Phase Services

Consultant shall provide services to assist the District in selection of a single Contractor assigned to construct the project.

The budget and level of effort included herein for this task is an allowance for use as directed by District staff. Consultant will provide services under this task up to the limits of the budget allocated. These services are expected to consist of the following.

8.1 Respond to Bidder Questions

It is assumed that the Procurement Officer will be the contact for receipt of bidder questions.

Consultant will provide technical interpretation of the Bid Documents and will prepare, for District Project Manager or Procurement Officer approval, proposed responses to all proposers' substantive questions and requests, which may be in the form of addenda. Responses to bidder questions will be provided by District to bidders. Substantive questions will be questions that cannot be answered by referral of proposers to unambiguous Bid Documents and the associated specifications and drawings for resolution and require Consultant's interpretation or clarification by addenda.

Deliverables:

- Log of bid questions with responses in Excel and PDF format.

8.2 Attend Pre-Bid Conference

Consultant will assist the District and Construction Manager in arranging and conducting one pre-bid conference. In consultation with District, Consultant will develop the draft agenda and content of the pre-bid conference. Consultant will take minutes or make other provisions for documenting the results of the pre-bid conference. Also, Consultant will record all questions and requests for additional information and shall assist with responses. District will issue responses and additional information.

Deliverables:

- Preparation of pre-bid conference minutes, and coordinate issuance of responses and additional information.

8.3 Prepare Addenda

Contractor will prepare all Addenda to the Bid Documents to be issued by the County Procurement Division. A maximum of two addenda is assumed. Addenda will be approved by the District.

Deliverables:

- Addenda during bid period.

8.4 Evaluate Bids

This task is an allowance to support District evaluation of bids.

Deliverables:

- As mutually agreed with District.

8.5 Conformed Documents

Contractor will incorporate addenda during bidding phase into the contract documents.

Deliverables:

- Three (3) hard copies of the Final Conformed Contract Documents including specifications and half-size (11-inch by 17-inch) drawings will be provided to the District.
- Three (3) hard copies of the Final Conformed Contract Documents including specifications and half-size (11-inch by 17-inch) drawings and one (1) full size set of drawings for the design Contractor.
- Four (4) hard copies of the Final Conformed Contract Documents including specifications and half-size (11-inch by 17-inch) drawings, plus two (2) full-size drawing sets, will be provided to the Construction Contractor prior to construction.

Task 9 Engineering Services During Construction

To be added by future amendment.

Task 10 Public Outreach Support – Not used.

Task 11 Control System Software Services

Consultant shall provide control system software services. The services include planning, programming, testing, and startup for the plant control system PLC and HMI system components to provide the functions described in the Control Loop Descriptions developed during the design phase.

Assumptions:

- The following tasks are not included in this subtask because they will be included elsewhere in the engineering services during construction scope of work:
  - Submittal review
  - Preparation of design clarifications and change orders
- Development of software loop descriptions.
- HMI and PLC software will be configured to District software standards.
- New Wonderware tags will be configured for alarming where necessary.
- Where possible, existing Intouch graphics and tags will be re-used for processes that are monitored and controlled by existing PLCs.
- Consultant will write programs in new files so all work can be done offsite at their office and only brought online at site as systems and components are commissioned.

- The scope assumes up to two SI workshops, two hours each. (draft and final).
- Configurations of historian will consist of addresses changes to the existing tags as devices and processes are transferred.
- Additional historian tags will be added as needed, up to 50 new historian tags.
- Operations training will include up to 4 days of onsite training for District operations staff.
- Site final software acceptance testing will include five days of formal testing, signoff, and documentation of software functionality with District.
- District staff will participate in software factory testing and final site software testing.
- No factory testing of equipment (drives or package systems) will be provided.
- Software O&M documentation is limited to electronic copies of the final HMI and PLC programs.

11.1 Project Meetings

Consultant shall plan and participate in project meetings related to Task 10 activities including attending construction meetings and coordinating with vendors.

Deliverables: Meeting notes

11.2 Software Planning – Software Loop Descriptions

Consultant shall review project design Control Loop Descriptions (including detailed control strategies), incorporate actual IO points and create alarm list identify HMI displays elements.

Consultant shall develop final software loop descriptions based on the final Control Loop Descriptions contained in the Contract Documents as updated during the Process O&M Manual developed under Task 10.7. Software loop descriptions shall define the automated monitoring and control functions to be provided by the PLC and HMI software.

Deliverables: Final software loop descriptions

11.3 Software Programming

Consultant shall perform the following activities:

- PLC programming for each new process systems according to control strategies.
- PLC programming for modifying existing systems.
- HMI programming for new process systems according to the control strategies.
- HMI programming for modifying existing systems.

Consultant shall provide control system software programming services based on the final software loop descriptions defined in Task 10.2. The purpose of this task is to configure the PLC

and HMI software to perform the functions identified in the Control Loop Descriptions developed in the Contract Documents. The major task items of software configuration shall include:

- PLC programming for new automated monitoring and control functions for existing and/or new PLCs.
- Wonderware Intouch HMI graphics for the facility improvements. Includes the following major approaches:
  - Draft graphics. Tag names will be duplicated with a marker to indicate their data.
- Review critical alarms to the existing alarm dialer software and add or adjust alarms as needed.

Deliverables:

- Draft Graphics Review Submittal
- Final Graphics Review Submittal

11.4 Factory software acceptance testing:

Consultant shall perform offline software testing in Consultant's local office. Two days will be coordinated with District staff to demonstrate, via Teams, the proper function of the PLC-HMI links with simulated I/O before the software is taken to the field for final site acceptance testing with actual I/O. The testing will be executed with the final PLC and HMI software configurations developed in Consultant's office.

Perform the following activities:

- Bench testing and coordination for all new PLC and HMI code.
- Write simulation logic to the extent possible to test control functions, feedback loops and HMI graphics.
- Coordinate with PIC contractor for control panel checkout, testing and configuration.

11.5 Site Acceptance Testing

Consultant shall perform the following activities:

- Onsite verification of field instrument operation, IO function, wiring and wire labeling on both ends of wires.
- Onsite setup and testing of control network hardware and networked field devices.
- Onsite integration and testing of vendor system integration including PLC data and control wiring.
- Create and maintain startup testing documentation.
- Performance testing of each subsystem.
- Coordination with plant staff for final commissioning.

Consultant shall provide control system software site acceptance testing services to confirm that the configured control system software provides the automated monitoring and control functions identified in the final loop descriptions. Major tasks include:

- Functional Test Part 1 (FT1): This effort is entirely the responsibility of the contractor. The tests and documentation are requirements of the contractor as specified in the Contract Documents.

- Functional Test Part (FT2): Repeat the Contractor's unwitnessed Functional Test Part 1 (FT1) to confirm that the wiring systems and field equipment are ready for software functional testing. This testing requires support by the contractor for simulating field I/O and troubleshooting wiring.
- Software Functional Acceptance Testing: Test the software functions identified in the final loop descriptions on a loop-by-loop basis using actual I/O from field devices. This testing will require multiple testing phases, dictated by the Contractor's schedule.
- Software Training:
  - Train District operations staff to use the new control system software.
- Site Software Acceptance Test Completion Documentation.
  - Site software acceptance testing: Software testing at project site with District staff to demonstrate the proper function of the PLC-HMI links with actual I/O after functional testing with the contractor has been completed. The testing will be executed with the final PLC and HMI software configurations started up at the project site.

Deliverables: Final site software acceptance test documentation consisting of formal signoff of software functions.

11.6 HMI/SCADA Staff Training

Consultant shall perform the following activities:

- Onsite training with plant staff on how new system operate and how to use the HMI.
- Review all HMI graphics and the functions of each screen element.
- Provide on the job assistance to operators as they begin using the new systems.
- Review alarm list and appropriate responses to alarms.
- Review basic troubleshooting for control system equipment.

11.7 HMI O&M Manual and Final Control System Software Documentation

Consultant shall perform the following activities:

- Provide written user manual for HMI system that includes process graphic screen captures and detailed description of associated functions.
- Incorporate as build control functionality description into HMI user manual to provide user with practical description of how the system operates.
- Include alarm list with descriptions and appropriate responses.

Jacobs will provide deliverables to document the final PLC and HMI software configurations.

- Final Software O&M Files.

Deliverables:

- Written HMI user manual (draft and final)
- DVDs containing the following (three copied):
  - Final HMI Graphics application
  - Final PLC files

- Electronic files for each of the following software O&M documents:
  - Three 3-ring binders containing the final software O&M document
  - Final software loop descriptions
  - Final software tag list
  - Printed color copies of the HMI main process graphics

Task 12 Construction Management/Field Services

May be added by future amendment.

Task 13 O&M Manual and Startup Support

May be added by future amendment.

Task 14 Post Construction, Construction Closeout and Documentation

May be added by future amendment.

Task 15 Safety

Safety related scope for future engineering services during construction may be added by future amendment.

Attachment A: Preliminary Design Drawing List

Sheet #	Discipline	Sheet Type	Drawing #	Drawing Title
1	General	General	G-001	COVER SHEET, LOCAITON AND VICINITY MAPS
2	General	General	G-002	INDEX TO DRAWINGS
3	General	General	G-003	ABBREVIATIONS -1
4	General	General	G-004	ABBREVIATIONS - 2
5	General	General	G-005	GENERAL LEGEND
6	Structural	Legend	G-006	STRUCTURAL LEGEND
7	Instrumentation & Controls	Legend	G-007	INSTRUMENTATION AND CONTROL LEGEND 1
8	Instrumentation & Controls	Legend	G-008	INSTRUMENTATION AND CONTROL LEGEND 2
9	Process Mechanical	Legend	G-009	PROCESS MECHANICAL LEGEND
10	Electrical	Legend	G-010	ELECTRICAL LEGEND
11	Civil	Plan	C-101	OVERALL SITE PLAN, ACCESS, AND STAGING
12	Instrumentation & Controls	P&ID	320-N-101	AERATION BASIN 1 P&ID

Attachment A: Preliminary Design Drawing List

Sheet #	Discipline	Sheet Type	Drawing #	Drawing Title
13	Instrumentation & Controls	P&ID	320-N-102	AERATION BASIN 2 P&ID
14	Instrumentation & Controls	P&ID	320-N-103	AERATION BASIN 3 P&ID
15	Instrumentation & Controls	P&ID	320-N-104	AERATION BASIN 4 P&ID
16	Instrumentation & Controls	Layout	320-N-201	PANEL LAYOUT
17	Instrumentation & Controls	Diagram	320-N-202	LCP WIRING DIAGRAM - POWER
18	Instrumentation & Controls	Diagram	320-N-203	LCP WIRING DIAGRAM - Rack # Slot #
19	Instrumentation & Controls	Diagram	320-N-204	LCP WIRING DIAGRAM - Rack # Slot #
20	Instrumentation & Controls	Diagram	320-N-205	LCP WIRING DIAGRAM - Rack # Slot #
21	Instrumentation & Controls	Diagram	320-N-206	LCP WIRING DIAGRAM - Rack # Slot #
22	Instrumentation & Controls	Diagram	320-N-207	LCP WIRING DIAGRAM - Rack # Slot #
23	Instrumentation & Controls	Diagram	320-N-208	LCP WIRING DIAGRAM - Rack # Slot #
24	Instrumentation & Controls	Diagram	320-N-209	LCP WIRING DIAGRAM - Rack # Slot #
25	Instrumentation & Controls	Diagram	320-N-210	LCP WIRING DIAGRAM - Rack # Slot #
26	Instrumentation & Controls	Diagram	320-N-211	LCP WIRING DIAGRAM - Rack # Slot #
27	Instrumentation & Controls	Diagram	320-N-212	LCP WIRING DIAGRAM - Rack # Slot #
28	Instrumentation & Controls	Diagram	320-N-213	LCP WIRING DIAGRAM - Rack # Slot #
29	Instrumentation & Controls	Diagram	320-N-214	LCP WIRING DIAGRAM - Rack # Slot #
30	Instrumentation & Controls	Diagram	320-N-215	LCP WIRING DIAGRAM - Rack # Slot #
31	Instrumentation & Controls	Diagram	320-N-216	LCP WIRING DIAGRAM - Rack # Slot #
32	Instrumentation & Controls	Diagram	320-N-217	LCP WIRING DIAGRAM - Rack # Slot #
33	Instrumentation & Controls	Diagram	320-N-218	LCP WIRING DIAGRAM - Rack # Slot #
34	Instrumentation & Controls	Diagram	320-N-219	LCP WIRING DIAGRAM - Rack # Slot #
35	Instrumentation & Controls	Diagram	320-N-220	LCP WIRING DIAGRAM - Rack # Slot #

Attachment A: Preliminary Design Drawing List

Sheet #	Discipline	Sheet Type	Drawing #	Drawing Title
36	Instrumentation & Controls	Details	320-N-300	INSTALLATION DETAILS
37	Structural	Demo	320-DS-101	STRUCTURAL DEMOLITION PLAN
38	Structural	Demo	320-DS-102	STRUCTURAL DEMOLITION SECTIONS 1
39	Structural	Plan	320-S-101	STRUCTURAL PLAN
40	Structural	Sections	320-S-102	STRUCTURAL SECTIONS
41	Structural	Details	320-S-104	STRUCTURAL DETAILS
42	Process Mechanical	Demo	320-DM-001	MECHANICAL DEMOLITION GROUND PLAN - AERATION BASINS 1 & 2
43	Process Mechanical	Demo	320-DM-002	MECHANICAL DEMOLITION GROUND PLAN - AERATION BASINS 3 & 4
44	Process Mechanical	Demo	320-DM-003	MECHANICAL DEMOLITION LOWER PLAN - AERATION BASINS 1 & 2
45	Process Mechanical	Demo	320-DM-004	MECHANICAL DEMOLITION LOWER PLAN - AERATION BASINS 3 & 4
46	Process Mechanical	Demo	320-DM-005	MECHANICAL DEMOLITION SECTIONS
47	Process Mechanical	Demo	320-DM-006	MECHANICAL DEMOLITION DETAILS
48	Process Mechanical	Plan	320-M-101	MECHANICAL - AERATION BASINS 1 & 2 GROUND PLAN
49	Process Mechanical	Plan	320-M-102	MECHANICAL - AERATION BASINS 3 & 4 GROUND PLAN
50	Process Mechanical	Plan	320-M-103	MECHANICAL - AERATION BASINS 1 & 2 LOWER PLAN
51	Process Mechanical	Plan	320-M-104	MECHANICAL - AERATION BASINS 3 & 4 LOWER PLAN
52	Process Mechanical	Sections	320-M-105	MECHANICAL - AERATION BASIN SECTIONS 1
53	Process Mechanical	Sections	320-M-106	MECHANICAL - AERATION BASIN SECTIONS 2
54	Process Mechanical	Details	320-M-107	MECHANICAL - AERATION BASIN DETAILS 1
55	Process Mechanical	Details	320-M-108	MECHANICAL - AERATION BASIN DETAILS 2
59	Electrical	Demo	320-DE-001	ELECTRICAL DEMOLITION PLAN - AERATION BAINS 1 & 2
60	Electrical	Demo	320-DE-002	ELECTRICAL DEMOLITION PLAN - AERATION BAINS 3 & 4
61	Electrical	Demo	320-DE-003	ELECTRICAL DEMOLITION - PANEL SCHEDULES
62	Electrical	Demo	320-DE-004	ELECTRICAL DEMOLITION PLAN - ELECTRICAL ROOM
63	Electrical	Plan	320-E-101	ELECTRICAL PLAN - AERATION BAINS 1 & 2
64	Electrical	Plan	320-E-102	ELECTRICAL - AERATION BAINS 3 & 4
65	Electrical	Plan	320-E-103	ELECTRICAL - ELECTRICAL ROOM PLAN
66	Electrical	Diagram	320-E-104	ELECTRICAL - ONE LINE DIAGRAM
67	Electrical	Diagram	320-E-105	ELECTRICAL PANEL SCHEDULES

Attachment A: Preliminary Design Drawing List

Sheet #	Discipline	Sheet Type	Drawing #	Drawing Title
68	Electrical	Diagram	320-E-106	ELECTRICAL AERATION BASIN 1 & 2 RISER DIAGRAMS
69	Electrical	Diagram	320-E-107	ELECTRICAL AERATION BASIN 3 &4 RISER DIAGRAMS
70	Electrical	Details	320-E-108	ELECTRICAL DETAILS
71	HVAC	Plan	320-H-101	AERATION HVAC PLAN

Attachment B - Level of Effort and Pricing

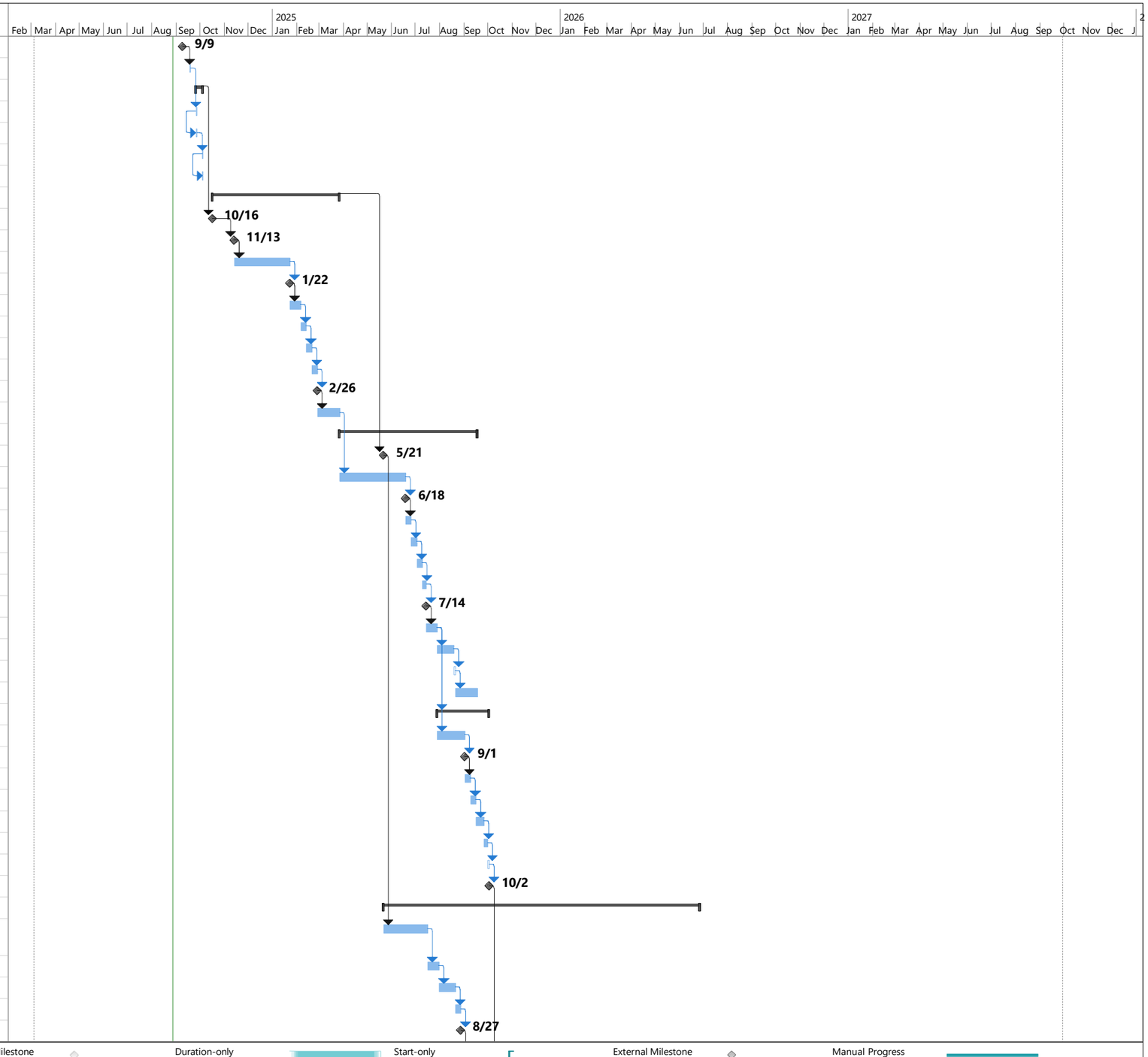
WES Tri-City WRRF Aeration Basin Improvements Project	Project Manager	Client Service Manager	DM	Senior Technical Consultant	Design Quality Manager	Discipline QA/QC Reviewers	SCADA/ Programming Lead	PLC/HMI Programming	I&C Lead	Process Engineer	Process Mechanical	HVAC	Staff Electrical	Structural	Corrosion/ Coatings	Cost Estimator	CAD - Senior	CAD - Mid-Level	Specifications Editor	Technical Editor	Admin Support	Project Controls	Hours	Labor	Expenses	Subcontract	Total Jacobs Labor and expense
	Todd Dye	Brady Fuller	Robert White	Bryan Youker	Katie Webster	Various	Daryl Banaszek	Michelle Kojs	Marlo Crenshaw	Corey Klibert	Eric Thompson	Jim Sackinger	Jacob Hellen	Alex Firth	Patterson Tuttle	Dean Kellar	Various	Various	Various	Various	Teresa Riddle	Garrett Bates					
2024 Billing Rate	$228.00	$260.00	$142.00	$260.00	$142.00	$251.00	$251.00	$218.00	$168.00	$208.00	$228.00	$251.00	$182.00	$260.00	$168.00	$229.00	$155.00	$115.00	$127.00	$127.00	$103.00	$142.00					
2025 Billing Rate	$234.84	$260.00	$146.26	$260.00	$146.26	$258.53	$258.53	$224.54	$173.04	$214.24	$234.84	$258.53	$187.46	$260.00	$173.04	$235.87	$159.65	$118.45	$130.81	$130.81	$106.09	$146.26					
2026 Billing Rate	$241.89	$260.00	$150.65	$260.00	$150.65	$260.00	$260.00	$231.28	$178.23	$220.67	$241.89	$260.00	$193.08	$260.00	$178.23	$242.95	$164.44	$122.00	$134.73	$134.73	$109.27	$150.65					
Billing Rate Category	Sr. Technical Staff	Senior Porject Manager	Staff Engineer 1	Sr. Engineer	Staff Engineer 1	Sr. Project Engineer	Sr. Project Engineer	Project Engineer	Staff Engineer 2	Technical Staff	Project Engineer	Sr. Engineer	Engineer	Sr. Engineer	Staff Engineer 2	Sr. Technical Staff	Technician 2	Technician 1	Technician 1	Technician 1	Office	Proect Controls					
Task 1 - Project Management																											**$ 44,439**
Task 1.1 - Progress Meetings and Updates																											$ -
Calendar Year 2024 (6 Months)	24		18																				42	$ 8,028	$ -	$ -	$ 8,028
Calendar Year 2025 (9 Months)	36		27																				63	$ 12,403	$ -	$ -	$ 12,403
Task 1.2 - Project Work Plan																											
Project Staffing Plan, Project Execution Plan	8																				8		16	$ 2,648	$ -	$ -	$ 2,648
Health and Safety Plan	3																				4		7	$ 1,096	$ -	$ -	$ 1,096
Task 1.3 - Decision Log																							0	$ -	$ -	$ -	$ -
Calendar Year 2024 (6 Months)	3		6																				9	$ 1,536	$ -	$ -	$ 1,536
Calendar Year 2025 (9 Months)	4.5		9																				13.5	$ 2,373	$ -	$ -	$ 2,373
Task 1.4 - Invoice, Cost, Schedule Control																							0	$ -	$ -	$ -	$ -
Calendar Year 2024 (6 Months)	18																				6	12	36	$ 6,426	$ -	$ -	$ 6,426
Calendar Year 2025 (9 Months)	27																				9	18	54	$ 9,928	$ -	$ -	$ 9,928
Task 2 - Existing System Evaluation																											**$ 47,954**
Task 2.1 - Kickoff Meeting	4	1	4	2			2		1	0			2	2									20	$ 4,137	$ -	$ -	$ 4,137
Task 2.2 - Data Request and Initial Analysis	8		4	2			2	4		0	12	2	4										36	$ 8,420	$ -	$ -	$ 8,420
Task 2.3 - Site Visits to TCWRRF Facility	16		16				16			0	16		16	16									96	$ 20,656	$ 360	$ -	$ 21,016
Task 2.4 - Concrete Condition Assessment																											
Planning and Coordination	4													4									8	$ 1,952			$ 1,952
Visual Inspection														8	4								12	$ 2,752	$ 75	$ -	$ 2,827
Penetration Testing														8									8	$ 2,080	$ 1,075	$ -	$ 3,155
Data Summary and Recommendations Tech Memo	3		3			1								16	4					2			25	$ 6,447	$ -	$ -	$ 6,447
Task 3 - Preliminary Design (30%)																											**$ 199,905**
Task 3.1 - Workshop 1 - Review Vendor and Control Alternatives	4	1	8	4			14	26		0	16		2	2	2								75	$ 17,398	$ -	$ -	$ 17,398
Task 3.2 - Workshop 2 - Confirm Equipment and Control Approach, and Basis of Design	4	1	8	4			14	26	32	0	32	2	6	2									131	$ 27,316	$ -	$ -	$ 27,316
Task 3.3 - Preliminary (30%) Design Documents																											
Basis of Design Report	8		24	4			4	8	4	0	16		6	3	3					6	4		93	$ 17,505	$ -	$ -	$ 17,505
Preliminary Design Drawings	3	0	6	2	0	0	12	24	40	0	75	6	32	5	0	0	42	349	0	0	0	0	596	$ 89,395	$ -	$ -	$ 89,395
CAD Coordination																	42										
General			6															12									
Civil	3																	3									
I&C							12	24	40									110									
Structural														5				24									
HVAC												6						6									
Process Mechanical				4							75							140									
Electrical													32					52									
Specifications Outline	2		2																2				6	$ 994	$ -	$ -	$ 994
Control Logic Concepts (Control Strategy, HMI screens, Loop Descriptions)	4		4				20	48															76	$ 16,964	$ -	$ -	$ 16,964
Preliminary (30%) Cost Estimate (AACE Class 4)	2	1	6	1		2		4			8		3	1		40				2			71	$ 15,414	$ -	$ -	$ 15,414
Incorporation of 30% Internal Review Comments	2		12				4	4	4	0	24	2	6	2	1								63	$ 12,826	$ -	$ -	$ 12,826
Task 3.4 - Preliminary Design Review Workshop	1.5	1	1	1			1		1		1		1	1									9.5	$ 2,093	$ -	$ -	$ 2,093
Task 4 Draft Contract Documents (90%)																											**$ 137,388**
Task 4.1 - 90% Midpoint Review	2	1	4	1			2	4	4	0	2		2	2	1								25	$ 5,220	$ -	$ -	$ 5,220
Task 4.2 - Draft Contract Documents (90% Deliverables)																											
Control Narratives	2		6	1			8	24			6												47	$ 10,473	$ -	$ -	$ 10,473
Specifications (90%)	14	1	14	0	0	0	4	12	24	0	60	4	16	3	4	0	0	0	33	0	0	0	188	$ 37,390	$ -	$ -	$ 37,390
Div 0 coordination	8	1																									
Div 1 Preparation	6		16											3					12								
Div 03 Concrete																			3								
Div 9 Coatings															4				2								
Div 23 HVAC												2							3								
Div 26 Electrical													16						4								
Div 40 I&C							4	12	24										4								
Div 40 Mechanical											32								4								
Div 44 Process											32								4								
Design Drawings (90%)	2	0	2	0	0	0	8	24	24	0	40	2	12	3	0	0	32	259	0	0	0	0	404	$ 60,626	$ -	$ -	$ 60,626
CAD Coordination																	32										
General			2															8									
Civil	2																	3									
I&C							8	24	24									60									
Structural														3				12									
HVAC												2						6									
Process Mechanical											40							120									
Electrical													12					48									
Incorporation of 90% Internal Review Comments	4		12				4	12	12			1	6	1	2								56	$ 10,864	$ -	$ -	$ 10,864
90% Cost Estimate (AACE Class 1)	2	1	6	1		2	2		2		3		2	1	1	24				2			45	$ 10,682	$ -	$ -	$ 10,682
Task 4.3 - 90% Draft Contract Document Review Workshop	1.5	1	1	1			1		1		1		1	1									9.5	$ 2,132	$ -	$ -	$ 2,132
Task 5 Final Design																											**$ 50,454**
Specifications	3	0	4	0	0	0	4	8	12	0	36	2	5	2	4	0	0	0	20	0	0	0	98	$ 19,559	$ -		$ 19,559
Div 0 coordination	2																		8								
Div 1 preparation	1		4																8								
Div 3 Concrete														2					3								
Div 9 Coatings															4				3								
Div 23 HVAC												2							1								
Div 26 Electrical													3						2								
Div 40 I&C							4	8	12										2								
Div 40 Mechanical											20								2								
Div 44 Process											20								2								
Drawings	2	0	2	0	0	0	4	8	12	0	0		3	2	0	0	8	82	0	0	0	0	124	$ 18,000	$ -		$ 18,000
CAD Coordination																	8										
General	2		2															3									
Civil																		1									
I&C							4	8	12									16									
Structural														2				4									
HVAC												1						2									
Process Mechanical																		40									
Electrical													3					16									
Incorporation of 100% Internal Review Comments	2		8				2	4	4		16	1	2	1	1					1			41	$ 8,571	$ -		$ 8,571
100% Cost Estimate (AACE Class 1)	1		3	1		1	1		1		1		1	1		8				1			20	$ 4,324	$ -		$ 4,324

Attachment B - Level of Effort and Pricing

WES Tri-City WRRF Aeration Basin Improvements Project	Project Manager	Client Service Manager	DM	Senior Technical Consultant	Design Quality Manager	Discipline QA/QC Reviewers	SCADA/ Programming Lead	PLC/HMI Programming	I&C Lead	Process Engineer	Process Mechanical	HVAC	Staff Electrical	Structural	Corrosion/ Coatings	Cost Estimator	CAD - Senior	CAD - Mid-Level	Specifications Editor	Technical Editor	Admin Support	Project Controls	Hours	Labor	Expenses	Subcontract	Total Jacobs Labor and expense
	Todd Dye	Brady Fuller	Robert White	Bryan Youker	Katie Webster	Various	Daryl Banaszek	Michelle Kojs	Marlo Crenshaw	Corey Klibert	Eric Thompson	Jim Sackinger	Jacob Hellen	Alex Firth	Patterson Tuttle	Dean Kellar	Various	Various	Various	Various	Teresa Riddle	Garrett Bates					
Task 6 Optional Scope Elements																											**$ 59,390**
Task 6.1 - Preliminary (30%) Design - Optional Scope																											
Concrete refurbishment	2		2			1								16				16					37	$ 6,991	$ -		$ 6,991
In Basin Piping Replacement											12												12	$ 2,736	$ -		$ 2,736
Aeration Diffuser Replacement											4												4	$ 912	$ -		$ 912
Task 6.2 - Draft Contract Documents (90%) - Optional Scope																											
Concrete refurbishment	2		2			1								6				12					23	$ 4,002	$ -		$ 4,002
In Basin Piping Replacement											8												8	$ 1,879	$ -		$ 1,879
Aeration Diffuser Replacement											4												4	$ 939	$ -		$ 939
Task 6.3 - Draft Contract Documents (90%) - Optional																											
Concrete refurbishment	1		1			1								4				4					11	$ 2,153	$ -		$ 2,153
In Basin Piping Replacement											4												4	$ 939	$ -		$ 939
Aeration Diffuser Replacement											2												2	$ 470	$ -		$ 470
Task 6.4 - Procurement Suppor and Owner Furnished Equipment and Materials - Optional																											
Prepare Equipment Specs for Long-Lead Equipment	2		8	2			3		24		24								8		2		73	$ 13,983	$ -	$ -	$ 13,983
Consult on County-prepared front end & solicitation	8	1	4																				13	$ 2,724	$ -	$ -	$ 2,724
Review	2		2	2	2	6																	14	$ 3,126	$ -	$ -	$ 3,126
Fix up			4				1		4		4												13	$ 2,475	$ -	$ -	$ 2,475
Bid phase support	4		2						3		3												12	$ 2,456	$ -	$ -	$ 2,456
Submittal review (allowance)	2		6						8		8												24	$ 4,610	$ -	$ -	$ 4,610
Task 6.5 - Process Modeling Support - Optional	2		2	2						36													42	$ 8,995	$ -	$ -	$ 8,995
Task 7 Quality Management																											**$ 54,708**
Design Quality Management Plan	2				2																		4	$ 740			$ 740
30% QC Review	6	2	8	4	6	72																	98	$ 22,704			$ 22,704
90% QC Review	6	2	6	4	6	72																	96	$ 23,338			$ 23,338
100% QC Review	2	1	3	1	2	24																	33	$ 7,926			$ 7,926
Task 8 Bid Phase Services																											**$ 17,252**
Task 8.1 Respond to Bidder Questions	2		4	2			2			2	2		2	2	1								19	$ 4,058			$ 4,058
Task 8.2 Conduct Pre-Bid Conference	2		2																				4	$ 762			$ 762
Task 8.3 Prepare and Issue Addenda	2		8				2		2	2	2		2	2	1		4	4	6				37	$ 6,366			$ 6,366
Task 8.4 Evaluate Bids	2		2	1																			5	$ 1,022			$ 1,022
Task 8.5 Conformed Documents	2		12																12		8		34	$ 4,643	$ 400		$ 5,043
Task 11 Control System Software Services																											**$ 237,569**
Task 11.1 - Project Meetings	8		6				60	20															94	$ 22,759			$ 22,759
Task 11.2 Software Planning - Loop Descriptions	4		2				80	80															166	$ 39,877			$ 39,877
Task 11.3 Software Programming	1		2				200	200															403	$ 97,141			$ 97,141
Task 11.4 Factory Software Acceptance Testing	1						16	16															33	$ 7,964			$ 7,964
Task 11.5 Site Acceptance Testing	1						80	80															161	$ 39,544	$ 960		$ 40,504
Task 11.6 HMI/SCADA Staff Training	1		2				16	16															35	$ 8,404			$ 8,404
Task 11.7 HMI O&M Manual and Final Control System Software Documentation	4		2				40	40															86	$ 20,920			$ 20,920
Total Hours	293	15	310	43	18	183	629	692	219	40	442	24	136	117	32	72	169	722	81	13	41	30	4,242				**$ 849,058**
Total Cost	$ 66,690	$ 3,900	$ 44,020	$ 11,180	$ 2,556	$ 45,933	$ 157,879	$ 150,856	$ 36,792	$ 8,320	$ 100,776	$ 6,024	$ 24,752	$ 30,420	$ 5,376	$ 16,488	$ 26,195	$ 83,030	$ 10,287	$ 1,651	$ 4,223	$ 4,260		$ 846,188	$ 2,870	$ -	
																										Total Labor, Expense, Subconract	**$ 849,058**

Attachment C - Preliminary Schedule

ID	Task Name	Duration	Start	Finish
1	**Notice to Proceed**	0 days	Mon 9/9/24	Mon 9/9/24
2	**Kickoff Meeting**	1 day	Wed 9/18/24	Wed 9/18/24
3	**Pre-Design Condition Assessment**	**7 days**	**Thu 9/26/24**	**Fri 10/4/24**
4	Aeration Basin 1 Inspection	1 day	Thu 9/26/24	Thu 9/26/24
5	Aeration Basin 2 Inspection	1 day	Thu 9/26/24	Thu 9/26/24
6	Aeration Basin 3 Inspection	1 day	Fri 10/4/24	Fri 10/4/24
7	Aeration Basin 4 Inspection	1 day	Fri 10/4/24	Fri 10/4/24
8	**Preliminary (30%) Design**	**115 days**	**Wed 10/16/24**	**Wed 3/26/25**
9	30% Design Workshop 1	0 days	Wed 10/16/24	Wed 10/16/24
10	30% Design Workshop 2	0 days	Wed 11/13/24	Wed 11/13/24
11	30% BODR and Drawing Development	50 days	Thu 11/14/24	Wed 1/22/25
12	Engineering Cutoff	0 days	Wed 1/22/25	Wed 1/22/25
13	CAD Production	10 days	Thu 1/23/25	Wed 2/5/25
14	QC Review	5 days	Thu 2/6/25	Wed 2/12/25
15	QC Fixup	5 days	Thu 2/13/25	Wed 2/19/25
16	PM/DM Review and Fixup	5 days	Thu 2/20/25	Wed 2/26/25
17	Submit 30% Design Package	0 days	Wed 2/26/25	Wed 2/26/25
18	**WES 30% Review**	20 days	Thu 2/27/25	Wed 3/26/25
19	**90% Design**	**125 days**	**Thu 3/27/25**	**Wed 9/17/25**
20	90% Midpoint Design Workshop	0 days	Wed 5/21/25	Wed 5/21/25
21	90% Specs and Drawing Development	60 days	Thu 3/27/25	Wed 6/18/25
22	Engineering Cutoff	0 days	Wed 6/18/25	Wed 6/18/25
23	Specs and CAD Production	5 days	Thu 6/19/25	Wed 6/25/25
24	QC Review	5 days	Thu 6/26/25	Wed 7/2/25
25	QC Fixup	5 days	Thu 7/3/25	Wed 7/9/25
26	PM/DM Review and Fixup	3 days	Thu 7/10/25	Mon 7/14/25
27	Submit 90% Design Package	0 days	Mon 7/14/25	Mon 7/14/25
28	**WES 90% Review**	10 days	Tue 7/15/25	Mon 7/28/25
29	90% Fixup for Permit Review Submittal	15 days	Tue 7/29/25	Mon 8/18/25
30	Stamp 90% for Permit Review Submittal	2 days	Tue 8/19/25	Wed 8/20/25
31	Permit Review	20 days	Thu 8/21/25	Wed 9/17/25
32	**100% Design - Bid Documents**	**48 days**	**Tue 7/29/25**	**Thu 10/2/25**
33	100% Specs and Drawing Development	25 days	Tue 7/29/25	Mon 9/1/25
34	Engineering Cutoff	0 days	Mon 9/1/25	Mon 9/1/25
35	Specs and CAD Production	5 days	Tue 9/2/25	Mon 9/8/25
36	QC Review	5 days	Tue 9/9/25	Mon 9/15/25
37	QC Fixup	8 days	Tue 9/16/25	Thu 9/25/25
38	PM/DM Review and Fixup	3 days	Fri 9/26/25	Tue 9/30/25
39	Stamp 100% Drawings and Specs	2 days	Wed 10/1/25	Thu 10/2/25
40	Submit 100% Design Package	0 days	Thu 10/2/25	Thu 10/2/25
41	**Owner Furnished Equipment (Optional)**	**287 days**	**Thu 5/22/25**	**Fri 6/26/26**
42	Prepare Owner Furnished Equipment Draft Specs	40 days	Thu 5/22/25	Wed 7/16/25
43	WES Review	10 days	Thu 7/17/25	Wed 7/30/25
44	Finalize Owner Furnished Procurement Specs	15 days	Thu 7/31/25	Wed 8/20/25
45	Prepare Bid Documents	5 days	Thu 8/21/25	Wed 8/27/25
46	Bid Advertisement	0 days	Wed 8/27/25	Wed 8/27/25

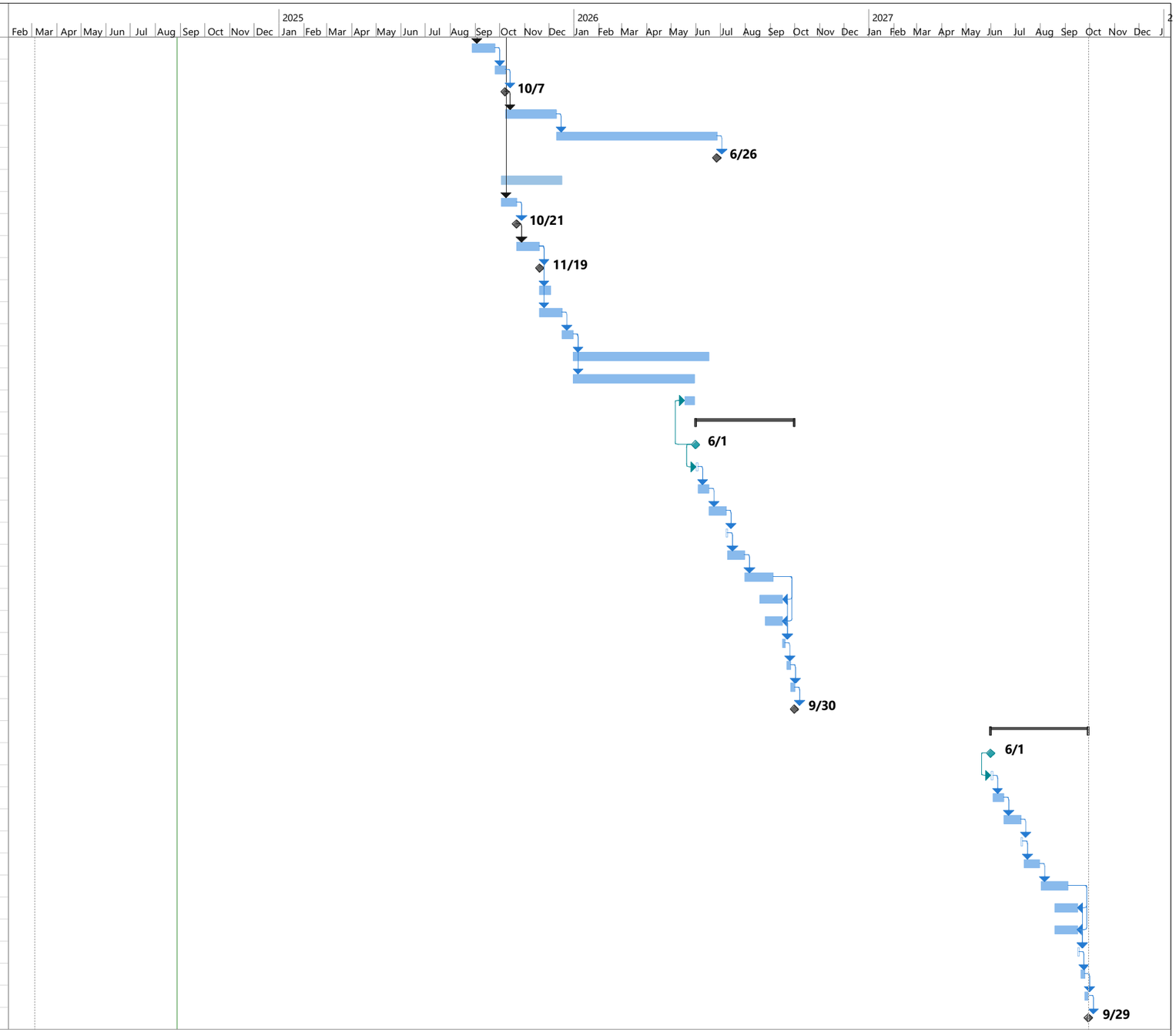


Project: TCWRRF_AB
Date: Wed 8/28/24

Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Progress
Manual Progress

Attachment C - Preliminary Schedule

ID	Task Name	Duration	Start	Finish
47	Bid Period	20 days	Thu 8/28/25	Wed 9/24/25
48	Bid Analysis	9 days	Thu 9/25/25	Tue 10/7/25
49	Bid Award	0 days	Tue 10/7/25	Tue 10/7/25
50	Submittals	45 days	Wed 10/8/25	Tue 12/9/25
51	Manufacture/deliver equipment	143 days	Wed 12/10/25	Fri 6/26/26
52	Turn Equipment Over to Contractor	0 days	Fri 6/26/26	Fri 6/26/26
53	**Bid Phase Services**	**53 days**	**Fri 10/3/25**	**Tue 12/16/25**
54	WES Finalizes Bid Documents	13 days	Fri 10/3/25	Tue 10/21/25
55	Bid Advertisement	0 days	Tue 10/21/25	Tue 10/21/25
56	Construction Contract Bid Period	20 days	Wed 10/22/25	Tue 11/18/25
57	Bid Opening	0 days	Wed 11/19/25	Wed 11/19/25
58	Bid Analysis	10 days	Wed 11/19/25	Tue 12/2/25
59	Conformed Document Preparation	20 days	Wed 11/19/25	Tue 12/16/25
60	**Construction Contract Award and NTP**	10 days	Wed 12/17/25	Tue 12/30/25
61	**Contractor Equipment and Materials Procurement**	120 days	Wed 12/31/25	Tue 6/16/26
62	**Pre-Construction Submittals**	108 days	Wed 12/31/25	Fri 5/29/26
63	**Contractor Mobilization**	10 days	Mon 5/18/26	Fri 5/29/26
64	**Aeration Basins 1 and 2 Construction -Year 1**	**88 days**	**Mon 6/1/26**	**Wed 9/30/26**
65	Remove Basins from service	0 days	Mon 6/1/26	Mon 6/1/26
66	Clean Basins	2 days	Mon 6/1/26	Tue 6/2/26
67	Demo Existing Equipment	10 days	Wed 6/3/26	Tue 6/16/26
68	Demo Exst Concrete	15 days	Wed 6/17/26	Tue 7/7/26
69	Clean/Prep for Mortar	2 days	Wed 7/8/26	Thu 7/9/26
70	Repair Mortar Application	15 days	Fri 7/10/26	Thu 7/30/26
71	Mechanical Equipment/Pipe Installation	25 days	Fri 7/31/26	Thu 9/3/26
72	Instrumentation and controls Installation	20 days	Wed 8/19/26	Tue 9/15/26
73	Electrical Installation	15 days	Wed 8/26/26	Tue 9/15/26
74	Functional Testing Part 1	3 days	Wed 9/16/26	Fri 9/18/26
75	Functional Testing Part 2	5 days	Mon 9/21/26	Fri 9/25/26
76	Performance Testing	5 edays	Fri 9/25/26	Wed 9/30/26
77	Turnover Basins to Operations	0 days	Wed 9/30/26	Wed 9/30/26
78	**Aeration Basin 3 and 4 Construction -Year 2**	**87 days**	**Tue 6/1/27**	**Wed 9/29/27**
79	Remove Basins from service	0 days	Tue 6/1/27	Tue 6/1/27
80	Clean Basins	2 days	Tue 6/1/27	Wed 6/2/27
81	Demo Existing Equipment	10 days	Thu 6/3/27	Wed 6/16/27
82	Demo Exst Concrete	15 days	Thu 6/17/27	Wed 7/7/27
83	Clean/Prep for Mortar	2 days	Thu 7/8/27	Fri 7/9/27
84	Repair Mortar Application	15 days	Mon 7/12/27	Fri 7/30/27
85	Mechanical Equipment/Pipe Installation	25 days	Mon 8/2/27	Fri 9/3/27
86	Instrumentation and controls Installation	20 days	Thu 8/19/27	Wed 9/15/27
87	Electrical Installation	20 days	Thu 8/19/27	Wed 9/15/27
88	Functional Testing Part 1	2 days	Thu 9/16/27	Fri 9/17/27
89	Functional Testing Part 2	5 days	Mon 9/20/27	Fri 9/24/27
90	Performance Testing	5 edays	Fri 9/24/27	Wed 9/29/27
91	Turnover Basins to Operations	0 days	Wed 9/29/27	Wed 9/29/27



Project: TCWRRF_AB
Date: Wed 8/28/24

Task | Summary | Inactive Milestone | Duration-only | Start-only | External Milestone | Manual Progress
Split | Project Summary | Inactive Summary | Manual Summary Rollup | Finish-only | Deadline
Milestone | Inactive Task | Manual Task | Manual Summary | External Tasks | Progress