

**CITY OF COOS BAY CITY COUNCIL**  
**Agenda Staff Report**

MEETING DATE	AGENDA ITEM NUMBER
May 3, 2016	

TO: Mayor Shoji and City Councilors

FROM: Jennifer Wirsing, P.E. Wastewater Project Engineer

THROUGH: Rodger Craddock, City Manager *rec*  
Jim Hossley, Public Works Director *J*

ISSUE: Award the Services During Construction Contract to the Design Team of SHN and CH2M for the Wastewater Treatment Plant 2 Project.

**BACKGROUND:**

The City has hired an engineer on staff to work full time for the next two years on the Wastewater Treatment Plant 2 (WWTP2) construction project. This person will be responsible for the day to day oversight of the project, coordinating with the funding agency, preparing the required reporting for the funding agency, reviewing pay requests, and coordinating between the contractor and the design engineer. By hiring this person on staff, it not only has a cost savings but there is a dedicated person on this project that is the City's representative. However, there must also be a contract with the design engineer. The City does not want to have the its representative making engineering design decisions that would void the design engineer's (SHN/CH2M) responsibilities. The design engineer must review all submittals for and approve of any changes. In addition, DEQ also requires the design engineer to perform milestone inspections to ensure that the construction is in conformance with the approved plans. The design engineer will also play a key role at the regularly scheduled project meetings and during the startup of the plant. The contract for the design engineer during this phase of the WWTP2 project is called Services During Construction and has a two-year duration.

**DISADVANTAGES:**

Staff sees no disadvantages.

**ADVANTAGES:**

Entering into this contract and commencing with the construction bidding, minimize delays.

**BUDGET IMPLICATIONS:**

The source of funds for this contract is from the Oregon Infrastructure Finance Authority Loan #2 (29-810-530-3018). The amount of the Services During Design contract is \$811,810. Staff has recommended a 10% contingency of \$81,181 for a total amount of \$892,991.

**ACTION REQUESTED:**

If it pleases Council, staff recommends Council award the Services During Design contract to the Design Team of SHN and CH2M for Wastewater Treatment Plant 2 project for an amount not to exceed \$892,991.

**ATTACHMENTS:**

Scope of Work for Coos Bay Wastewater Treatment Plant #2 Services During Construction

SCOPE OF WORK

# Coos Bay Wastewater Treatment Plant #2 Services During Construction

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## Project Description

This scope of work describes the Services During Construction (SDC) to be provided by the team of SHN and CH2M (ENGINEER) for the construction of Coos Bay Wastewater Treatment Plant 2 (WWTP2).

The City of Coos Bay (OWNER) contracted ENGINEER to design WWTP2, which was completed in December 2014. The City decided to use a CM/GC delivery approach and has selected Mortenson Construction (CONTRACTOR) to be the CM/GC CONTRACTOR. A GMP is anticipated during the winter of 2015. Start of construction activities is anticipated the spring/summer of 2016 following the approval of the Environmental Assessment (EA) and Biological Assessment (BA).

ENGINEER will provide Services During Construction (SDC) as defined below. These SDC are intended to assist the OWNER 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 OWNER in responding to events that occur during the construction. These SDC are based upon the understanding that the OWNER will be actively involved in the construction process assisting ENGINEER in making decisions, providing approvals, and performing other actions necessary for the completion of the construction and will provide full-time construction inspection. These SDC are also based upon the OWNER executing a contract for construction with the CONTRACTOR that is consistent with the Agreement in the Contract Documents and with these SDC, and which provides the requisite authority for ENGINEER to fulfill its SDC responsibilities.

ENGINEER's SDC are based upon the construction schedule or duration of construction anticipated at the time that these services are agreed. Deviations from the anticipated schedule or duration of construction, anticipated to be up to 24 months, will materially affect the scope of these SDC and ENGINEER's compensation for the SDC, and may require an increase/decrease to ENGINEER's compensation.

ENGINEER will not be responsible for the safety, means, methods, techniques, sequences or procedures of the CONTRACTOR, nor shall ENGINEER be responsible for the CONTRACTOR's failure to perform in accordance with the contract documents.

## Task 1: Bid Services Phase

1. Lead weekly project coordination meetings following submittal of the 100% Contract Documents in December 2015.
2. Evaluate CONTRACTOR's GMP and provide recommendation to CITY.
3. Evaluate cost alternatives presented by CONTRACTOR.

4. Issue one addendum, incorporating CITY, CONTRACTOR, and DEQ comments to the plans and specifications.

## **Task 2: Services During Construction**

ENGINEER will provide services to assist in coordinating and the monitor the CONTRACTOR's performance, and respond to design and technical submittals.

### **2.1 Construction Management Services**

Services shall include the following activities.

#### **Document Management System and Procedures**

1. CONTRACTOR will establish a system and set of procedures for managing, tracking, and storing all relevant documents between the CONTRACTOR, ENGINEER, and OWNER produced during the Construction and Closeout phases of the project. CONTRACTOR will utilize an appropriate computer-based document management system approved by OWNER and ENGINEER.
2. CONTRACTOR will implement procedures for the logging and tracking of all relevant correspondence and documents. CONTRACTOR will provide an electronic copy in Microsoft Word, Microsoft Excel, or PDF of all documents, correspondence, and reports. CONTRACTOR shall provide training to ENGINEER and OWNER as required.
3. CONTRACTOR will provide training (assumed to be 1 hour) to OWNER and ENGINEER staff on use of their electronic document management system. Assumes each ENGINEER (SHN and CH2M) design team member attends the 1 hour training session.

#### **Site Coordination**

1. Pre-Construction Conference: ENGINEER will attend and lead one pre-construction conference with the CONTRACTOR and OWNER to review the project communication, coordination, and other procedures and discuss the CONTRACTOR's general work plan and requirements for the project. ENGINEER will take minutes or otherwise record the results of this conference.
2. Communications: OWNER will implement and maintain regular communications with the CONTRACTOR during the construction. ENGINEER and OWNER will not communicate directly with the CONTRACTOR's subcontractors or suppliers without prior approval of CONTRACTOR and only do so in order to expedite the progress of the Work.
3. Project Site Meetings: ENGINEER will attend weekly meetings (as needed).
4. Field Instructions and Orders: OWNER will issue, after coordinating with ENGINEER, field instructions, orders, or similar documents during construction as provided in the contract for construction through the CONTRACTOR's document management system.

## Construction Contract Administration

1. Permits, Bonds, and Insurance: OWNER, with ENGINEER assistance, will verify that the required permits, bonds, and insurance have been obtained and submitted by the CONTRACTOR.
2. Payments to CONTRACTOR: OWNER will receive and with ENGINEER review the CONTRACTOR's requests for payment monthly. OWNER will determine whether the amount requested reflects the progress of the CONTRACTOR's work and is in accordance with the contract for construction. ENGINEER will provide recommendations to OWNER as to the acceptability of the requests.

Recommendations by OWNER for payment will be based upon ENGINEER's and OWNER's knowledge, information, and belief from its observations of the work on site and selected sampling that the work has progressed to the point indicated. Such recommendations do not represent: that continuous or detailed examinations have been made by ENGINEER to ascertain that the CONTRACTOR has completed the work in exact accordance with the contract for construction; that ENGINEER has made an examination to ascertain how or for what purpose the CONTRACTOR has used the moneys paid; that title to any of the work, materials, or equipment has passed to OWNER free and clear of liens, claims, security interests, or encumbrances.

## Project Controls

1. CONTRACTOR's Schedule Submittal: OWNER and ENGINEER will review the CONTRACTOR's construction schedule and verify that it is consistent with the requirements of the contract for construction. OWNER and ENGINEER will advise the CONTRACTOR in writing of any areas where the schedule is not in compliance with the contract for construction. ENGINEER will provide comments and recommendations to OWNER to assist OWNER in approving, accepting, or taking other action on the CONTRACTOR's schedule in accordance with the contract for construction. ENGINEER's review and comments shall not be considered as a guarantee or confirmation that the CONTRACTOR will complete the work in accordance with the contract for construction.
2. CONTRACTOR's Schedule Updates: OWNER and ENGINEER will review the CONTRACTOR's periodic schedule updates or other schedule submissions. OWNER, in coordination with ENGINEER will advise the CONTRACTOR if the updates or other submissions are not in accordance with the contract for construction.
3. Effect of Change Orders: OWNER and ENGINEER will review information submitted by the CONTRACTOR regarding the effect of proposed or issued Change Orders upon the construction schedule, duration, and completion date. OWNER will coordinate with ENGINEER as to the potential impact of proposed or issued Change Orders. With input from ENGINEER, OWNER will lead discussions with the CONTRACTOR concerning the potential impact of proposed or issued Change Orders.

## Field Inspection

1. Independent Testing, Inspection, and Survey Services: The CONTRACTOR will employ independent firms for the material testing, specialty inspection, survey, or other services

related to verifying the quality of the CONTRACTOR's work. ENGINEER will review the reports and other information prepared by the independent firms. ENGINEER nor the OWNER shall not be responsible for the accuracy or completeness of the work and reports of the independent testing, inspection, and survey firms.

2. Review of Work: OWNER will conduct daily on-site observations of the CONTRACTOR's work for the purposes of determining if the work generally conforms to the contract for construction and that the integrity of the design concept as reflected in the contract for construction has been implemented and preserved by the CONTRACTOR.

OWNER's inspection staff will arrange for weekly photographs of the work in progress, which will be made available to ENGINEER.

3. Design Team Visits: OWNER will coordinate with the ENGINEER to schedule periodic visits to the site by the design team members to review progress and quality of the work, conduct code required structural observations, and resolve specific construction related issues that arise. The visits shall observe the general quality of the work at the time of the visit and review any specific items of work that are brought to the attention of the design team members by the CONTRACTOR or OWNER. Engineer's observation of the work is not an exhaustive observation or inspection of all work performed by the CONTRACTOR. ENGINEER does not guarantee the performance of the CONTRACTOR. Engineer's observations shall not relieve the CONTRACTOR from responsibility for performing the work in accordance with the contract for construction, and ENGINEER shall not assume liability in any respect for the CONTRACTOR's construction of the project.

**Design team visit assumptions:**

- Total of 8 day-long site visits including travel for CH2M mechanical, electrical, HVAC, odor control and instrumentation and controls disciplines
  - 13 day-long site visits for CH2M structural inspection and observations.
  - 10 site visits for CH2M process mechanical engineer or design manager
  - 3 half-day site visits for SHN senior Civil Engineer, as a representative of the Project Geotechnical Engineer, to review subgrade conditions at the bottom of excavated areas below critical structures
  - 16 half-day site visits for SHN Civil, mechanical engineering representatives
4. Deficient and Non-conforming Work: Should ENGINEER discover or believe that any work by the CONTRACTOR is not in accordance with the contract for construction or is otherwise defective, not conforming to requirements of the contract or applicable rules and regulations, ENGINEER will bring this to the attention of the CONTRACTOR and OWNER. With concurrence from OWNER, ENGINEER shall direct the CONTRACTOR to reconstruct defective work. ENGINEER will thereupon monitor the CONTRACTOR's corrective actions and will advise OWNER as to the acceptability of the corrective actions.

5. Regulatory and Third-Party Testing and Inspections: OWNER will monitor the CONTRACTOR's coordination of inspection and testing by regulatory and third party agencies that have jurisdiction over the project.
6. Subsurface and Physical Conditions: Whenever the CONTRACTOR notifies ENGINEER or OWNER of subsurface or physical conditions at the site and the contract for construction provides that such notice shall or should be given, ENGINEER will inspect such conditions at the site ENGINEER will notify OWNER prior to any such inspection to afford OWNER staff or an authorized representative of OWNER an opportunity to be present during the ENGINEER's inspection and to conduct its own inspection if desired. ENGINEER will advise OWNER as to any appropriate action(s) required and will respond to the CONTRACTOR accordingly with concurrence from OWNER. In addition, ENGINEER will promptly notify OWNER in writing if it discovers during any inspection or otherwise, subsurface or latent physical conditions that differ materially from those indicated in the Construction Documents, or unknown physical conditions of an unusual nature that differ materially from those ordinarily encountered and generally recognized as inherent in the work required to be performed under the contract for construction.
7. Substantial and Final Completion: 2 ENGINEER representatives (1 SHN and 1 CH2M) will lead and assist OWNER with inspections at substantial and final completion, in accordance with the contract for construction. ENGINEER will prepare up to two (2) separate punch lists of items requiring completion or correction; one for each inspection. ENGINEER will make recommendations to OWNER regarding acceptance of the work based upon the results of the final inspection.
8. Equipment Operation and Maintenance Manuals, Training: OWNER will coordinate with the CONTRACTOR for the submission of required equipment manuals for operation and maintenance and for training of OWNER's staff by the CONTRACTOR and by equipment vendors and representatives.

### **Health and Safety**

1. ENGINEER will manage the health, safety, and environmental activities of its staff and the staff of its subcontractors to achieve compliance with applicable health and safety laws and regulations.
2. ENGINEER will coordinate its health, safety, and environmental program with the responsibilities for health, safety, and environmental compliance specified in the contract for construction. ENGINEER will coordinate with responsible parties to correct conditions that do not meet applicable federal, state, and local occupational safety and health laws and regulations, when such conditions expose ENGINEER staff, or staff of ENGINEER subcontractors, to unsafe conditions.
3. ENGINEER will notify affected personnel of any site conditions posing an imminent danger to them that ENGINEER observes.
4. ENGINEER is not responsible for health or safety precautions of construction workers. ENGINEER is not responsible for the CONTRACTOR's compliance with the health and safety requirements in the contract for construction, or with federal, state, and local occupational safety and health laws and regulations.

## 2.2 Changes in the Work, Claims and Disputes

### Changes

1. Minor Variations in the Work: ENGINEER may authorize minor variations in the work that do not involve an adjustment in the CONTRACTOR's contract price nor time for construction and are consistent with the intent of the contract documents. ENGINEER will promptly notify OWNER in writing of all such variations in the work that it authorizes.
2. Coordinate Issuance of ENGINEER / OWNER Initiated Changes: With input and assistance from OWNER, ENGINEER will take the lead in issuing any changes to the contract for construction, deemed necessary in order to obtain a satisfactory and operationally completed project.

ENGINEER will receive and review the CONTRACTOR's response to the request for change and will obtain such further information as is necessary to evaluate the basis for the CONTRACTOR's proposal. With input from OWNER, ENGINEER will lead the negotiations for the agreed to change and, upon approval by OWNER, prepare final change order documents for execution by OWNER and CONTRACTOR.

3. Review of CONTRACTOR's Requested Changes: ENGINEER will review all CONTRACTOR-requested changes to the contract for construction. ENGINEER will make recommendations to OWNER regarding the acceptability of the CONTRACTOR's request and, upon approval of OWNER, lead negotiations of the requested change. Upon agreement and approval, ENGINEER will prepare final change order documents.

### Claims and Disputes

ENGINEER will review all such letters and notices and will discuss them with the OWNER and CONTRACTOR as necessary to understand each such claim or dispute. ENGINEER will take the lead on advising OWNER regarding the CONTRACTOR's compliance with the contract requirements for such claims and disputes and recommend solutions.

## 2.3 Interpretations of Contract Documents

ENGINEER will provide written responses to the CONTRACTOR's request for interpretation or clarification of the contract documents.

1. Requests for Information: ENGINEER will promptly review the CONTRACTOR's requests for information or clarification of the contract for construction. ENGINEER will promptly coordinate such review with the design team and with OWNER as appropriate. ENGINEER will issue responses to the requests within a reasonable time.
2. Proposed Substitutions: ENGINEER will review and respond to the CONTRACTOR's requests for substitution of materials and equipment. ENGINEER will review such requests and will advise OWNER as to the acceptability of such substitutions.

## 2.4 Shop Drawings, Samples, and Submittals

1. Submittal Schedule: ENGINEER will obtain from the CONTRACTOR a proposed shop drawing and submittal schedule, which shall identify all shop drawings, samples, and



submittals required by the contract for construction, along with the anticipated dates for submission.

2. Review of Shop Drawings, Samples, and Submittals: ENGINEER will promptly coordinate with the design team for the reviews of the CONTRACTOR's shop drawings, samples, and other submittals upon receipt of such drawings, samples, and other submittals. ENGINEER will also coordinate deferred submittals review with the Building Department upon receipt of such submittals. CONTRACTOR will log and track all shop drawings, samples, and submittals. ENGINEER will ensure that the review of all such submittals will be completed within a reasonable time.

ENGINEER and design team's review of all shop drawings, samples, and submittals shall be for general conformance with the design concept and general compliance with the requirements of the contract for construction. Such review shall not relieve the CONTRACTOR from its responsibility for performance in accordance with the contract for construction, nor is such review a guarantee that the work covered by the shop drawings, samples, and submittals is free of errors, inconsistencies, or omissions.

3. Scope of Review: Engineer's scope will be based upon the scope of work in the contract for construction and shall be based on a maximum of two submissions by the CONTRACTOR for each shop drawing, sample, or submission. Should there be additional reviews required of ENGINEER and design team, ENGINEER shall be entitled to additional compensation per the procedure outlined in the construction contract between OWNER and the CONTRACTOR

The assumed number of submittals is described under "Basis of SDC Scope and Fee Development" at the end of this document.

## 2.5 Inspection of WAS Pipeline

ENGINEER will provide 170 hours of construction period monitoring/reporting during the construction of the WAS pipeline. This inspection time is based on 20 percent inspection over 22 weeks, which is the expected duration of the significant drilling activities. Duties of the observer will include monitoring drilling operations and preparing a record of drilling operations including sampling of soils excavated during the pilot bore, fluid properties, and various drilling parameters as specified. The observer will maintain records of daily activities, verify progress of the work, and report on the progress of the work, as necessary. This task also included the collection of survey data points from ground markings provided by the Contractor, to be used in the development of the as-constructed plans. The following items, for which submittal review is covered under section 2.4, will be field verified by the inspector(s).

- Machine size - thrust and torque capacity
- Frac-out mitigation plans
- Method for pipe assembly and QA/QC protocols
- Mud management plan
- Site BPMs and spill prevention countermeasures
- Driller QA/QC and production protocols

The observers will also monitor:

- pre and post construction pavement conditions
- evidence of heaving during drilling
- evidence of the surfacing of fluids (frac out)
- pipe conditions during pullback

## **Task 3: Services During the Close-out Phase**

ENGINEER will assist OWNER in closing out the contract for construction and commencement of OWNER's use of the completed work. ENGINEER's services will include the following:

### **3.1 Final Completion**

ENGINEER will assist OWNER in issuing documents for final completion and acceptance of the work. ENGINEER will advise OWNER on final payment, release of retention, and release of insurance and bonds.

#### **Assumptions:**

An allowance of 20 hours of ENGINEER time (10 hours SHN and 10 hour CH2M) is included for minor assistance with closeout activities.

## **Task 4: Post-Construction Phase Services**

### **4.1 Operations Manual**

OWNER will develop an Operations Manual following DEQ standards describing the operation of the Project facilities and systems. A draft of this manual will be prepared and submitted to DEQ at the 50 percent construction completion date. This manual will explain the various primary modes of operation that may be used, including both normal operation and initial emergency operation procedures. The manual will explain the purpose and basic concept of the various processes that are incorporated into the overall plant. Where appropriate, reference will be made to the manufacturer's detailed vendor supplied O&M submittals. It will include instructions for process operations and tests or laboratory procedures that may be required to monitor the performance of the facilities. The manual will be suitable for use as an operational tool and to facilitate operator training. The manual will be produced using Microsoft Word software for text files.

ENGINEER will review the draft Operations Manual and respond to OWNER's questions regarding general process control strategy. ENGINEER will not be developing content (e.g. text, figures, and tables) for the Operations Manual. OWNER will develop all O&M figures.

#### **Assumptions:**

An allowance of 56 hours of ENGINEER time (16 hours SHN and 40 hours CH2M) is included.

### **4.2 Operations Instruction**

ENGINEER will assist OWNER to provide supplemental instruction to OWNER's operations staff in the operation of the equipment provided under this Project. This

instruction shall cover both the basic operational concept and actual operation of the systems and components under both normal and abnormal operations that are likely to occur. OWNER will also help to coordinate and schedule the services of qualified representatives from equipment manufacturers, in conjunction with and consideration of OWNER staff availability.

**Assumptions:**

An allowance of 80 hours of ENGINEER time (40 hours SHN and 40 hours CH2M) is included for development of operations instruction regarding process control strategy and operating procedures.

OWNER will lead development of supplemental instruction with input as requested from ENGINEER.

**4.3 Start-Up Support**

OWNER will lead the planning and coordination of start-up activities. ENGINEER will furnish assistance to OWNER in plant startup and initial plant operation to the extent to be mutually agreed upon by both parties. This assistance includes:

1. Attending start-up planning meetings via conference call.
2. ENGINEER will develop the draft and final Performance Evaluation Standards, a Performance Progress Report 6-months following startup, and a final Performance Evaluation Report per the State Revolving Fund (SRF) requirements for DEQ
3. Review start-up plan for both the clean water test and startup with raw sewage.
4. ENGINEER will have up to 2 representatives on site for up to 2 consecutive days during the clean water test. During this test, clean water will be circulated through the plant to test equipment functionality and process controls.
5. ENGINEER will have up to 2 representatives onsite for up to 3 consecutive days during startup using raw sewage to observe plant operation and adjust process system operations. Assisting during the initial startup of the facilities by assisting the operating personnel assigned by OWNER.

**Assumptions:**

OWNER will prepare a startup-plan for both the clean water test and transition to startup with raw sewage.

This scope of work does not include ENGINEER support for development of draft and final Plan of Operations. OWNER will develop and submit the draft and final Plan of Operations to DEQ.

An allowance of 100 hours of ENGINEER time (40 hours SHN and 60 hours CH2M) is included for startup support during the clean water test and raw sewage startup.

## 4.4 Record Documents

ENGINEER will revise the drawings to reflect available record information provided by the CONTRACTOR and equipment suppliers. One half (½)-size (11 by 17 inch) hard copies, and an electronic PDF set will be submitted to OWNER.

## Task 5: Permitting Assistance

SHN/CH2M shall provide assistance with development of applications and supporting technical materials for the following project related permits:

- Meet and respond to OWNER Planning Commission comments on the SPAR application.
- Respond to regulatory comments on the Environmental Assessment (EA) and Biological Assessment (BA). Incorporate revisions to the EA and BA and provide formal responses as required by the regulatory agencies. Task assumes 3 conference call meetings with the OWNER and/or regulatory agencies to discuss and resolve regulatory comments.

## Task 6: Project Management and Coordination

Maintain and update the work plan for the project that combines staffing commitments and budgets with the deliverables and schedule for the project. Specific responsibilities of each member of the final design project team will be maintained throughout the design period.

Monitor work efforts and evaluate actual versus planned progress. Supervise the project team and identify actions needed to maintain the project schedule and adhere to budget considerations

Supervise and control activities of staff assigned to the project. Coordinate and schedule appropriate project staffing to meet project requirements. Make arrangements for the scheduled project workshops, review meetings, and project team meetings. Coordinate the participation of senior reviewers at appropriate points in the project. Coordinate with other tasks and staff to complete work on schedule and within budget.

Prepare monthly progress reports and review these with the OWNER. The reports will include a status summary of current project tasks, activities planned for the next work period, a project action issues checklist, and identification of items of concern.

Monitor project activities for potential changes. Should change occur, and with OWNER advance approval, modify project tasks, task budgets, and approach. Inform OWNER if any changes will impact the cost of engineering services, the construction cost, or the schedule.

Meet with the OWNER to review the project and discuss activities and needed actions.

Carry out an effective quality assurance program as described in the project instructions and management plan.

Maintain project records, manage and process project communications, and coordinate project administrative matters.

Maintain the project's SharePoint site. The SharePoint site will be accessible to the design team and OWNER's project team. Drawings, specifications, standard details, technical memoranda, and associated design data deliverables will be posted and updated as needed to function as the single point of data storage for the larger project team. File format shall be Adobe Acrobat pdf format or original file format. Access security including user name and password will be established for all users. The website will be housed on CH2M's server.

**Deliverables:**

The following deliverables will be produced under this task:

- Project instructions
- Updated work plan
- Monthly project status reports
- Project Workshop Agendas
- Monthly Invoices
- Documentation of project engineering services, construction cost, or schedule change.
- Project SharePoint maintenance and updating

## **Task 7: Additional Services**

The following services will be provided by ENGINEER upon authorization of OWNER and agreement on compensation to ENGINEER.

1. Services related to development of OWNER's project financing and/or budget.
2. Services related to procurement or management of third party CONTRACTORS.
3. Services necessary due to the default of the CONTRACTOR.
4. Services related to damages caused by fire, flood, earthquake, or other acts of God.
5. Services related to OWNER's operation and use of the completed project other than as specifically provided in the above scope of work.
6. Preparation for and serving as a witness in connection with any public or private hearing or other forum related to the project except for time spent in connection with allegations or claims made against Engineer.
7. Services supporting OWNER in public relations activities.
8. Services to support, prepare, document, bring, defend, or assist in litigation undertaken or defended by OWNER except for time spent in connection with allegations or claims made against Engineer.
9. Performing periodic labor evaluations and processing prevailing wage documentation.
10. Warranty period services.
11. Develop content (e.g. text, figures, tables, etc) for the Operations Manual.
12. Develop the Plan of Operations with input from OWNER and operations staff.

13. Inspection services not authorized in this scope of work.
14. Engineering and technical services that are required to investigate the subsurface or physical conditions.
15. Engineering and technical services to address construction claims, and unforeseen subsurface considerations would be additional costs.
16. Coordination of plant start-up activities and development of the start-up plan for the clean water test and start-up with raw sewage.

## **Basis of SDC Scope and Fee Development**

The following assumptions were used when determining the compensation to ENGINEER. These assumptions are in addition to the scope and additional services set forth in the foregoing scope of work.

### **Services During the Construction Phase**

1. The construction period will last up to 24 months from Notice to Proceed.
2. The project will be constructed a CM/GC contractor.
3. Weekly construction progress meetings will be attended at the project site. ENGINEER will have one person (the SHN Project Manager) attend each meeting.
4. Up to 260 original submittals and 130 re-submittals will be reviewed. This includes shop drawings, O&M submittals, and samples
5. Construction schedules and updates will be reviewed on a monthly basis.
6. Up to 220 Requests for Interpretation/Clarification will be reviewed and responded to.
7. ENGINEER will review up to 18 monthly pay requests from the Contractor.

### **Services During the Post-Construction Phase**

1. ENGINEER will provide three (3) days of classroom and two (2) days of field training to the plant staff.
2. ENGINEER will prepare 267 record drawings based on mark-ups from the Contractor.
3. ENGINEER will conduct one facility performance review/inspection lasting two (2) days within one year of facility startup. ENGINEER will prepare a report summarizing the findings.

## **Schedule and Budget**

The preliminary project schedule is included as Attachment A. Final design fee and level of effort are included as Attachment B.

## Attachment A – Project Schedule

## Attachment B –Level of Effort



**Wastewater treatment Plant 2 - Services During Construction**  
**City of Coos Bay, Oregon**

<b>Task No.</b>	<b>Task Description</b>	<b>TOTAL \$</b>
<b>1</b>	<b>Bid Phase Services</b>	
1.1	Weekly Coordination and Addenda Development	\$36,728
1.2	GMP and Proposed Alternate Review	\$12,277
	<b>Subtotals</b>	<b>\$49,005</b>
<b>2</b>	<b>Services During the Construction Phase-WWTP2</b>	
2.1	Construction Management Services	\$79,489
2.2	Changes, Claims, Disputes	\$22,138
2.3	Interpretations of Contract Documents	\$113,053
2.4	Shop Drawings, Samples and Submittals	\$310,393
2.5	Inspection of WAS Pipeline	\$22,270
	<b>Subtotals</b>	<b>\$547,343</b>
<b>3</b>	<b>Services During the Close-out Phase</b>	\$3,363
3.1	Final Completion & Closeout activities	\$ -
3.2	Occupancy and Start-up Permits	\$-
3.3	Warranties, Guarantees, Lein Releases	\$59
	<b>Subtotals</b>	<b>\$3,422</b>
<b>4</b>	<b>Post-Construction Phase Services</b>	
4.1	O&M Manual	\$11,268
4.2	Operation and Maintenance instruction	\$13,453
4.3	Start-Up Support	\$19,963
4.4	Record Documents	\$ 46,261
4.5	Warranty Period Services	\$ -
	<b>Subtotals</b>	<b>\$90,945</b>
<b>5</b>	<b>Permitting Assistance</b>	\$7,460
5.1	SPAR support	\$12,620
5.2	EA & BA Support	\$208
		<b>\$20,288</b>
<b>9</b>	<b>Project Management and Coordination</b>	
9.2	Project Management	\$76,837
	<b>Subtotals</b>	<b>\$76,837</b>
	<b>Labor Escalation for 2015 &amp; 2016</b>	<b>\$23,970</b>
	<b>Subtotals</b>	<b>\$23,970</b>
<b>SDC TOTAL</b>		<b>\$811,810</b>