



Primary Clarifier Upgrades And UV Pre-Purchase

City of Camas

Task Order 6

Camas, Washington

October 22, 2024





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Appendix A. – Preliminary Drawing List

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Acronyms and Abbreviations

°F	degree(s) Fahrenheit
3D	three-dimensional
AACE	Association for the Advancement of Cost Engineering
ALTA	American Land Title Association
ASCII	American Standard Code for Information Interchange
EJCDC	Engineers Joint Contract Documents Committee
MOPO	Mode Of Plant Operations during construction
PC	Primary Clarifier



Background and Scope of Services Overview

The City of Camas (City) owns and operates the City of Camas Wastewater Treatment Plant (WWTP). This treatment facility produces secondary effluent for discharge to the Columbia River and Class A biosolids. The City desires to engage HDR to lead implementation of rehabilitation of the Primary Clarifier mechanism replacements, which will include replacement of both primary clarifiers 1 and 2 mechanisms in their entirety. The existing mechanisms were discovered to be beyond the point of repair or improvement during the headworks recoating project. HDR will also provide procurement specifications for the sole source of the UV system from Trojan. HDR Engineering, Inc. (HDR) will perform the design services described in the Scope of Services.

Approach

Most of the design work will be performed using Building Information Modeling (BIM) software. The design engineering approach and submittals are generally as follows.

Shop drawings from the original primary clarifier installation have been located by City staff and supplied to HDR for use in the mechanism redesign:

Approach and Deliverables

Deliverables

Unless otherwise noted, deliverables will be submitted in electronic format. Documents less than 10 megabytes in size will be emailed and documents larger than 10 megabytes will be posted to Newforma or SharePoint and a link will be transmitted to the City.

Schedule

The 90% documents are scheduled for delivery to the City as outlined in Task Order 4. Final bid documents are scheduled for delivery to the City by dates outlined in Task Order 4.

The City intends to bid for the UV system in November 2024. HDR will supply contract documents for pre-purchasing of the Trojan UV system based on the 60% design documents for the UV.

Assumptions

This Scope of Services is based on the following overall project assumptions:

1. The UV system will be procured by sole source from Trojan.
2. The primary clarifiers will be added to the TO4 design drawings using shop drawings supplied by the City for the existing primary clarifier mechanisms. Independent measurements will be made in the field by HDR for Primary Clarifier 2. Primary Clarifier 1 is operational and not available for measurements.
3. Permitting, geotechnical investigation, and surveying are not provided as a part of this proposal. These services may be added at the City's discretion.
4. Delivery of project is assumed to be provided through the design-bid-build method.
5. The existing foundations supporting the primary clarifier mechanisms are assumed to be adequate for seismic design purposes in accordance with codes applicable at the time of task order execution. Redesign of the foundations is not included in this scope of work. If foundation

design is required, this service may be added at the City's discretion. The existing foundation drawings will be evaluated for code compliance.

6. HDR shall make no confined space entry as a part of this scope of services.
7. Construction services will be provided under a future task and are not included in this scope of work.
8. Construction services related to system integration (PLC/HMI programming) will be provided under a future task and are not included in this scope of work.
9. The Contract Documents will include drawings as listed in Appendix A.
10. Existing Phase 2 WWTP drawings will be imported and used as backgrounds for the new design information.
11. Existing O&M Drawings from the City will be used as backgrounds for new design information.
12. New instrumentation and electrical drawings will show replacement of MCCs, VFDs, and light panels.
13. One review meeting is scheduled as part of the work:
 - a. 90% Design Review
14. Meetings will be conducted virtually, and up to 3 HDR staff will participate. Assumed duration of each review meeting is 2 hours. Staff time of 1 additional hour per meeting is included for preparation and distribution of meeting notes.
15. Specifications will be provided in 6-digit CSI Master Format.
16. Front end documents (Div. 00) will be included in Task Order 4.
17. The Owner-Contractor contract will be provided, formatted and edited by the City.
18. Redesign of switchgear or electrical panels are not included in this scope of work. HDR will identify if there are affected panel or switchgear items.
19. Not used.
20. For City pre-procurement of the UV system HDR will provide a UV Disinfection System specification, procurement contract documents, and schematic drawings. It is assumed that the City will pre-purchase and contract with the UV system vendor to obtain shop drawings that HDR will use to complete design documents.
21. The duration of this Scope of Services is approximately 6 months.

City Responsibilities

1. Provide comments on DIV 00 and DIV 01 specifications.
2. Provide all existing data on PC mechanism.
3. Provide all existing data on solids and hydraulic loadings for PCs over the last five years.
4. Participate in review meetings.
5. Provide facility planning documentation that outlines flows and loads expected for the current and future facilities.
6. Provide O&M documentation on existing equipment.
7. Provide as-built drawings for existing facilities.
8. Provide existing CAD files and site survey files as available.

9. Provide plant operational data to support design analysis.
10. Support site visits and workshops over the course of the work.
11. All meetings are virtual.
12. Provide comments on deliverables as outlined in the Scope of Work.

Task 100. Project Management

Objective

The purpose of this task is to manage and coordinate project technical resources to a level of service and responsiveness consistent with the project schedule and budget. HDR shall organize, manage, and coordinate the disciplines required to accomplish the services required for this project. HDR shall coordinate with City staff to a level desired by the City. HDR shall provide project management services to implement project scope, budgets, and schedules.

Approach

The HDR project manager (PM) will prepare, monitor, and update the project work throughout the project. The PM will participate in monthly conference calls with the City and provide a brief cost and schedule status report for each task.

The status report will include a description of progress to date, actual costs, and potential cost variances. The PM will coordinate team activities with the City in relation to scheduling site visits and meetings with City staff. The PM will also supervise the engineering team and review monthly invoices and project budget.

HDR Services

HDR will conduct specific activities for the following:

- 100.01 Project Management Plan:** Update the TO4 Project Management Plan (PMP) following the NTP. The PMP shall identify the project scope, individual work elements, budget for each element, and responsible individuals for each work element, staffing plan, and schedule. The PMP will include a quality management plan and Job Hazard Assessment forms. The PMP for TO4 will be modified for the addition of the PC work.
- 100.02 Project Initiation Management Review:** Conduct a brief business review with senior management at project commencement to confirm/QC initial job set up (contracts, subcontracts, PMP, QMP), and discuss/cover job management approach to scope and budget. This is a modification of documents created under TO4, not creation of new documents.
- 100.03 Project Schedule:** Develop a project schedule. Identify deliverables as milestones. Identify City input activities. The PC Upgrades schedule will be managed with TO4.
- 100.04 Project Schedule Update:** Update the schedule monthly to define the status of each activity.
- 100.05 Project Management Meetings:** These will take place within the Task Order 4 meetings. Participants in the project meetings will include the City project manager and the HDR PM. The purpose of the meeting is to review budget, work elements accomplished, work items planned for the next period, staffing needs, and scope

issues.

- 100.06 Decision and Action Items Logs:** These will be kept within the Task Order 4 project as needed. Developed and maintained with the Task Order 4 project as a consolidated log for tracking decisions and required actions.
- 100.07 Invoices and Status Reports:** Prepare monthly project status reports that compare work accomplished with scheduled activities, provide support documentation for the invoices, compare expenditures with task budgets, and describe changes to the scope that have occurred. Reports shall be submitted to the City with the monthly invoices.
- 100.08 Engineering Team Management:** Supervise the design team over the course of the project and review technical content of work products. The project manager will monitor the team's work in terms of product, quality, schedule, and budget.
- 100.09 Contract Closeout:** Close out the project.

Assumptions

1. Project management is assumed to last for a total of 6 months, including contract close-out.
2. A single monthly invoice including labor costs and expenses will be sent to the City for review and payment.
3. HDR will coordinate with the City to schedule monthly conference calls/meetings at mutually agreeable date and times.
4. Meetings will be conducted virtually.
5. HDR attendee will be the PM and one additional HDR staff member.

City Responsibilities

1. Facilitate and participate in monthly project management conference calls.
2. Provide comments on meeting agenda and meeting notes.
3. Review and approve monthly invoices and authorize payment.

Deliverables

1. Monthly project status report, in PDF format
2. Monthly invoices, in PDF format
3. Meeting notes, data request log, project schedules, and decision and action logs, in PDF format
4. Review meeting notes, including decisions or actions from meeting, in PDF format.
5. Unless otherwise noted, deliverables will be submitted in electronic format. Documents will be transferred by Newforma or SharePoint to the City.

Task 200. Final Design

Objective

The project work will be executed as described below. Design drawings will be developed with Revit (BIM). Existing facility drawings will be used as backgrounds. The existing drawings will be shown as grayscale to indicate they are not new facilities. The design engineering approach and submittals,

from conceptual design to construction bidding, will track the following sequence of Tasks with the Detailed Scope of Services listed below.

The Camas WWTP's primary clarification facility consists of a center column, integral walkway, sweep arms, scum box/pipe, beach, spray bars and associated instrumentation, electrical, and controls. The existing center columns for both primary clarifiers are at the end of their service life. Recoating is not recommended. The existing primary clarifier mechanisms do not have enough remaining serviceable life to warrant further preservation. Entire replacement of both mechanisms is recommended.

Approach

The proposed approach is for HDR to evaluate the structural suitability of the existing PC center column foundations, prepare drawings/specifications and procurement documents for the procurement of the UV system and demolition/replacement of the existing PC mechanisms. The UV system is being procured by sole source. Design of the UV is under TO4.

HDR Services

HDR will develop 90% design, provide field measurements, and bid level drawings of each PC and conduct a review session with the City to view the design and receive feedback. Deliverables will be limited to those outlined in the drawing list. If it is determined that the foundation is not suitable, redesign of the foundation may be added to this scope of work.

HDR services for this stage shall include:

- 200.01 Establish Suitability of Existing Center Column Foundation for Reuse.** Review existing center column foundation documents furnished by the City. HDR structural engineers will determine the suitability of the existing center column foundation for reuse and compatibility with a new PC mechanism. This will be for both PCs. Evaluation of center column foundation suitability will be in accordance with current applicable structural building codes.
- 200.2 90% Design and Bid Level Drawings and Specifications and Procurement Documents.** Develop 90% and Bid level drawings of the primary clarifier mechanisms. Conduct a review session with the City to review the design and receive feedback. 90% and Bid level design packages shall include:
- 90% Design Level: Drawings, technical specifications, procurement front end documents at the 90% design development level.
 - Bid Documents: Drawings, technical specifications, procurement front end documents at the bid document level.

The main elements included in the 90% Drawings/Specifications and Bid Documents include the following:

Primary Clarifier Mechanisms. HDR will provide engineering services to design the Primary Clarifier mechanism installations with the appropriate connections and supporting systems depending on the manufacturer.

UV Disinfection System. UV system will be pre-purchased by the City and assigned to the Contractor for installation. HDR is providing engineering services to design the UV system under another task order. The work will include providing procurement contract documents for the UV system using EJCDC P-series documents.

Assumptions

1. The TM for evaluation of the existing PC mechanism foundation will be no more than 2 pages

long.

2. City will provide review and comment on the EJCDC procurement documents within 2 weeks of receipt of documents.
3. Review meetings and discussion with City will consist of 2 virtual meetings. Meetings will be 2 hours in duration with 1 additional hour for notes and documentation. Two HDR staff will attend each meeting. The review meetings are as follows:
 - a. Meeting 1 – Review of the P-series EJCDC contract documents for the UV system.
 - b. Meeting 2 – Review of the bid drawings and specifications. These hours are added to include review of the primary clarifier mechanisms in the overall project 90% review.

City Responsibilities

City responsibilities are as follows:

1. Review and provide timely (within two weeks), consolidated comments to the 90-percent drawings and specifications.
2. Review and provide timely (within two weeks), consolidated comments on the P-series EJCDC contract documents.
3. Attend and participate in review meetings.

Deliverables

1. 90-percent Design Drawings and Specifications, in PDF format.
2. EJCDC P-series contract documents for the UV sole source. UV is not going to bid, it is being procured as a sole source system.
3. Bid drawings and specifications, in PDF format.

Task 300. Bid Services

HDR will provide assistance during the bid phase of the UV procurement. Bidding assistance for the installation of the primary clarifier mechanism is covered under Task Order 4. HDR will be available to answer questions for the sole source procurement of the UV, but bid services are not assumed other than the hours provided below. The services provided for the UV procurement will be to answer questions from Bidders, assemble background information for City published addenda and provide a recommendation for bid award.

HDR Services

- 300.01** Not used.
- 300.02** Attend pre-bid conference virtually to answer questions as appropriate. Some of the responses to questions and requests for additional information may require addenda.
- 300.03** As necessary and as approved by the City, prepare and issue up to 3 Addenda to address bidder questions to the Bidding Documents.

- 300.04** Assist the City to evaluate bids received and determine contractor responsiveness and responsibility.
- 300.05** Provide a recommendation for award.

Assumptions:

1. Pre-bid conference is assumed as 1 hour duration and will occur at a conference room provided by the City.
2. Electronic copies of the pre-bid conference agenda will be furnished to the City for printing and distribution at the conference.
3. Up to 2 HDR staff will attend the pre-bid meeting via video conference.
4. One additional staff hour is provided for preparation, attendance and meeting summary notes for pre-bid meeting for each attending staff.
5. For UV procurement addenda, 6 staff hours are provided for preparation of each addendum, 3 addenda are assumed. HDR will send addenda responses for publication/distribution by the City. Bidders will address questions to the City. HDR will only respond to questions as requested by the City. 10 HDR staff hours are provided for answering questions pertaining to the UV sole source contract documents.
6. 13 staff hours are provided for evaluating bids received.
7. For award recommendation, 6 staff hours are provided.
8. City will advertise and distribute Bid and Contract Documents including addenda to interested bidders.

City Responsibilities

1. Advertise and distribute Bid and Contract Documents including addenda to interested bidders.
2. Arrange and conduct pre-bid conference and site tour. Record meeting notes or make other provision for documenting the pre-bid conference, record all questions and requests for additional information, and issue copies of the meeting notes or other conference documentation to the conference attendees.
3. Attend and host pre-bid conference.
4. Coordinate City's legal representative with HDR regarding recommendations of award that may involve waiver of formalities or irregularities in the bid.

Deliverables

1. Project description for advertisement (Word format).
2. Suggested items for pre-bid conference agenda transmitted to City (PDF format).
3. Up to 3 addenda addressing bidding questions (PDF format).
4. Engineer's recommendation of award (PDF format).

Task 500. Management Reserve

HDR will provide additional services if requested by the City. The scope and level of effort for these services will be determined at the time of the City's request. A management reserve is required so

that the City has a discretionary task budget to cover additional professional services not currently included in this Scope of Services. Services authorized under this task will be at the City’s discretion. HDR shall provide additional on-call services for tasks not included in the project Scope of Services or for tasks not adequately budgeted. HDR shall provide additional services under this task only when written authorization is provided by the City.

HDR Services

HDR will conduct specific activities including the following subtask:

1. Additional Subtask: Provide professional services at the request of the City as mutually agreed upon and defined.

Assumptions

1. Agreement for the services to be performed under the contingency task and budget will be documented and agreed upon by the City and HDR before proceeding.

City Responsibilities

1. Identify and request professional services deemed necessary that are not expressly included in this Scope of Services.

Deliverables

1. To be determined and agreed upon by the City and HDR.

Fee Estimate for Professional Services

The estimated fee for the professional services identified in this Scope of Services is offered on a time and material basis not to exceed \$147,454.

Professional services rendered in connection with this Scope of Services will be billed on a time and materials basis for actual hours rendered by HDR employees up to the estimated total contract amount in accordance with the terms and conditions outlined in the signed Agreement.

Task	Hours	Cost
100 – Project Management	82	\$17,484
300 – Final Design	435	\$94,602
400 – Bid Services	70	\$15,368
500 – Management Reserves		\$20,000
Total	587	\$147,454

Appendix A. – Preliminary Drawing List

			Included in Submittal
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Sheet No.	Drawing	Title	90%	Bid
1	00-X-001	DEMOLITION - CLARIFIER NO. 1 PLAN AND SECTION DEMOLITION	X	X
2	00-D-001	PROCESS - CLARIFIER NO. 1 PLAN AND SECTION	X	X
3	00-D-002	PROCESS - CLARIFIER NO. 2 PLAN AND SECTION	X	X
4	00-D-003	PROCESS - CLARIFIER DETAILS 1	X	X
5	00-D-004	PROCESS - CLARIFIER DETIALS 2	X	X
6	00-E-001	ELECTRICAL - CLARIFIER POWER AND LIGHTING PLAN	X	X
7	00-Y-001	I&C - CLARIFER P&ID	X	X

Appendix B. – Preliminary Specification List

00 01 01 - PROJECT MANUAL COVER.docx
00 01 07 - SEALS AND SIGNATURES.docx
00 01 10 - TABLE OF CONTENTS.docx
00 01 11 - DIVISION 00 DIVIDER.docx
00 11 13 - ADVERTISEMENT FOR BIDS
00 21 13 - INSTRUCTIONS TO BIDDERS
00 41 12 - BID BOND
00 42 63 - BID FORM
00 61 13.13 -PERFORMANCE BOND
00 61 13.16 - PAYMENT BOND
00 52 63 - AGREEMENT
00 72 13 - GENERAL CONDITIONS
00 73 01 - SUPPLEMENTARY CONDITIONS
00 91 13 - ADDENDUM FORM.docx
00 45 16 - Proposer's Qualifications
01 00 00 - DIVISION 01 DIVIDER.docx
01 26 00 - CONTRACT MODIFICATION PROCEDURES.docx
01 31 26 - ELECTRONIC COMMUNICATION PROTOCOLS.docx
01 33 00 - SUBMITTAL PROCEDURES.docx
01 61 03 - EQUIPMENT - BASIC REQUIREMENTS.docx
01 65 00 - PRODUCT DELIVERY REQUIREMENTS.docx
01 77 19 - CLOSEOUT REQUIREMENTS.docx
01 78 23 - OPERATION AND MAINTENANCE DATA.docx
01 78 36 - WARRANTIES.docx
01 78 43 - SPARE PARTS AND EXTRA MATERIALS.docx
01 79 23 - INSTRUCTION OF OPERATION AND MAINTENANCE PERSONNEL.docx
01 81 10 - WIND AND SEISMIC DESIGN CRITERIA.docx
05 50 00 - METAL FABRICATIONS
10 14 00 - IDENTIFICATION DEVICES.docx
26 05 00 - ELECTRICAL - BASIC REQUIREMENTS.docx
26 05 19 - WIRE AND CABLE - 600 VOLT AND BELOW.docx
26 05 26 - GROUNDING AND BONDING.docx
26 05 33 - RACEWAYS AND BOXES.docx
26 28 00 - OVERCURRENT AND SHORT CIRCUIT PROTECTIVE DEVICES.docx
26 28 16 - SAFETY SWITCHES.docx
46 23 23 – PLOW SCRAPER CIRCULAR PRIMARY CLARIFIER EQUIPMENT.docx
45 66 63 – UV DISINFECTION EQUIPMENT