



Secondary Treatment Facilities & Equipment Building Upgrades

City of Camas

Task Order 4

Camas, Washington

September 6, 2023





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Acronyms and Abbreviations

°F	°F degree(s) Fahrenheit
3D	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

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 improvements to the Ultraviolet (UV) disinfection facilities and equipment building which includes the aeration blowers, centrifuges, grit classifiers, odor control, genset, and VFD replacement. The City is replacing two (2) aeration blowers in the Equipment Building, as an Owner pre-purchase or pre-selection. Blowers will be assigned to Contactor for installation under this project. Equipment Building will also be upgraded for HVAC and Odor Control improvements and various other improvements. Septage receiving station improvements will be made near the headworks facilities. 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:

Approach and Deliverables

WWTP Facility	TM	Design (30%, 60%, 90%, Final)	Bid Services
UV Improvements	✓	✓	✓
Blowers	(Previous Task)	✓	✓
Odor Control	✓		
Genset Replacement	✓	✓	✓
Centrifuge TM	✓	✓	✓
Grit Classifiers	✓	✓	✓
VFD Replacement		✓	✓
Septage Receiving Station	✓	✓	✓

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 and a link will be transmitted to the City.

Schedule

Proposed milestones are identified in Table 1. A detailed schedule will be developed as an early project management activity.

Table 1 - Project Schedule

Milestone	Weeks from NTP
Notice to Proceed with Engineering Services	0
Preliminary Design Phase (TM's)	20
Submit 30 percent Design Documents and TMs	32
Submit 60 percent Design Documents	49
Submit 90 percent Design Documents	54
Submit 100 percent Design Documents	56

Assumptions

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

1. Permitting, geotechnical investigation, and surveying are not provided as a part of this proposal. These services may be added at the City's discretion.
2. Delivery of project is assumed to be provided through the design-bid-build method.
3. The replacement UV Disinfection bulbs, racks and other necessary equipment fits into the existing UV channel and there is enough room for operation and maintenance of the UV system to be selected by the City.
4. HDR shall make no confined space entry as a part of this scope of services.
5. Construction services will be provided under a future task.
6. Construction services related to system integration (PLC/HMI programming) will be provided under a future task.
7. The Contract Documents will include drawings as listed in Appendix A.
8. Existing Phase 2 WWTP drawings will be imported and used as backgrounds for the new design information.
9. New instrumentation and electrical drawings will show replacement of MCCs, VFDs, light panels, etc. within the UV disinfection and equipment building facilities.
10. Four review meetings are scheduled as part of the work:
 - a. TM review
 - b. 30% Design Review
 - c. 60% Design Review
 - d. 90% Design Review
11. 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.
12. Specifications will be provided in 6-digit CSI Master Format.
13. Front end documents (Div. 00) will be in EJCDC format.
14. The Owner-Contractor contract will be provided, formatted and edited by the City.
15. Redesign of switchgear or electrical panels due to the upgrade of the UV are not included in this scope of work. HDR will identify if there are panel or switchgear items affected by the recommended UV system.

16. For City pre-procurement of the UV Disinfection System HDR will provide a draft UV Disinfection System specification and schematic drawing. It is assumed that the City will pre-select a UV Disinfection System and contract with the UV vendor to obtain shop drawings that HDR will use to complete design documents.
17. The duration of this Scope of Services is approximately 12 months.

City Responsibilities

1. Provide all existing data on UV Transmittance (UVT) collected over the last five years.
2. Provide all existing data on solids handling loadings for centrifuges over the last five years.
3. Participate in review meetings.
4. Provide facility planning documentation that outlines flows and loads expected for the current and future facilities.
5. Provide centrifuge shop drawings and bill of materials from manufacturer. Provide panel information for installation within this project.
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. Attend kick off meeting and have meeting space available at the CKTP.
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 plan 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:** Prepare a 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.
- 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.
- 100.03 Project Schedule:** Develop a project schedule. Identify deliverables as milestones. Identify City input activities.
- 100.04 Project Schedule Update:** Update the schedule monthly to define the status of each activity.
- 100.05 Data Requests Log:** Develop a log of data requests to the City
- 100.06 Project Management Meetings:** HDR PM shall schedule bi-weekly meetings via conference call or virtual meeting. 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.
- 100.07 Decision and Action Items Logs:** Develop and maintain during the project separate logs tracking decisions and required actions.
- 100.08 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.
- 100.09 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.
- 100.10 Contract Closeout:** Close out the project.

Assumptions

1. Project management is assumed to last for a total of 12 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 either conducted by video conferencing or by in-person meetings at HDR's office.
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 to the City. Up to two full size (22"x34" plans, 11"x8.5" specifications) paper copies of deliverables will be provided if requested by the City.

Task 200. Preliminary Design

Objective

The project work will be executed in sequence from preliminary Technical Memo (TM) , design milestones, and final design, and as described below. Some portions of the work will only progress through the evaluation stage, and the design steps will be under a future task order. Design drawings will be developed with Revit 2022 (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 tertiary treatment facilities consist of disc filtration, ultraviolet (UV) disinfection, effluent pumping, and auxiliary systems such as non-potable water pumps, and wet well sump pumps. For this project, upgrades will be made to UV disinfection, disinfection building, non-potable water pumps, and wet-well pumps. The UV disinfection equipment consists of an older Trojan system that is no longer support for parts. The UV disinfection system will be evaluated to understand current and future regulations, capacities, and make recommendations to the City based on the currently available equipment and building configurations. The building will be assessed, and recommendations provided for building repairs, structural repairs, and potential roof replacement/repairs. Electrical and control equipment for the UV disinfection equipment will also be upgraded. The non-potable water pumps, and wet well pumps will also be replaced with this project. with replacement of the VFDs for the two sets of pumps (non-potable and wet well). HDR will utilize

previously established hydraulic profiles for the UV Facilities and provide recommendations of equipment size and capacity (both style of equipment and flow capacity of the facility). Redundancy will be factored into the capacity of the UV disinfection equipment to meet current regulations for number of banks or channels out of service a peak flow condition. HDR will utilize our in-house UV experts for assistance in equipment selection and sizing and confirm with two manufactures (likely Trojan and Xylem/Wedeco).

The Camas WWTP's Equipment Building consists of two-story building housing the main plant aeration blowers, hydrocyclones for primary sludge de-gritting, dewatering centrifuge equipment, polymer feed equipment, biofiltration fan, dedicated electrical room, generator room, City staff office and restroom, primary sludge pump room, and sludge pump room (primary sludge pumps and digested sludge pumps) on the lower level. The space is not compliant with current NFPA 820 standards and air spaces will need to be separated within the Equipment Building. Other items to be upgraded include the facility's generator (genset), installation of owner provided centrifuge, replacement of the hydrocyclones, replacement of VFDs, odor control and HVAC, and addition of a septage receiving station. The odor control evaluation will be provided along with the HVAC discussions. Design elements will include design and final design for installation of Owner purchased blowers provided under a separate project.

Approach

The proposed approach is for HDR to prepare TM's that will inform further design including technical specifications and drawings.

HDR Services

HDR will develop preliminary design, provide LiDAR scanning, technical memorandums, and schematic drawings of each area to be upgraded and conduct a review session with the City to view the design and receive feedback. Deliverables will be limited to general diagrams and design TM's summarizing the basic design criteria that will be further developed as design progresses. TM's will also include a preliminary MOPO plan for the project.

HDR services for this stage shall include:

- 200.01 Establish UV Equipment Capacity and Sizing TM.** Review existing flow and loading data from the City that will allow for the creation of equipment basis of design. Review existing UV transmittance (UVT) data and provide recommendation for equipment size and capacity based on current and potential future regulations. Provide recommendation for UV system including channel size, equipment configuration, electrical and communication upgrades.
- 200.02 Non-potable water pump replacement TM.** Review existing drawings and interview City staff on style and desires for new non-potable water system. Provide recommendation for replacement of these pumps as well as the associated VFDs.
- 200.03 Wet well Sump pump replacement TM.** Review existing drawings and interview City staff on style and desires for new non-potable water system. Provide recommendation for replacement of these pumps as well as the associated VFDs.
- 200.04 UV Disinfection TM.** Produce a TM for the UV disinfection facility including the review of existing data, recommendation for equipment size, and building repairs. TM to include potential MOPO discussion if needed for construction. Following delivery of the draft TM

a review meeting will be held between the City and HDR to discuss the design items pertaining to HDR Services 200.01 – 200.05. The primary focus of the meeting will be to establish the direction of the UV replacement recommendation.

200.05 Not Used.

200.06 Odor Control TM. HDR will review the existing odor control system with current flows and expected foul air loadings. HDR will recommend an odor control system and that is coordinated with the HVAC TM described above. This system will only be progressed to a TM level with a 15% design including one plan and one section drawing.

200.07 Genset TM. The existing building generator is in need of replacement, and the City has expressed a need to provide backup electrical for a few other loads within the facility. HDR will provide recommendations for a generator and fuel system to includes new and existing loads for the proposed genset equipment.

200.08 Centrifuge Installation TM. The new dewatering centrifuge furnished by the City, located within the equipment building, requires connections to WWTP power, controls and feeds to be used. HDR will review and evaluate the existing centrifuge installation for needed connections and provide recommendations for installation of the centrifuge equipment and arrangement in the existing space. HDR will be responsible for designing power loadings with existing power supply, as well as designing structural supports for centrifuge.

200.09 Septage Receiving Station TM. HDR will provide a size and location evaluation for the new septage receiving screening located at the headworks facility. The screening is anticipated to be a packaged system for screening and de-gritting prior to entry into the headworks unit process. The TM will describe equipment size, location on the site, and other facilities will be provided for discussions with the City.

200.10 Hydrocyclone Grit Equipment TM. HDR will provide a size and replacement for the existing hydrocyclones within the Equipment Building. TM will provide preliminary design within this unit process within the Equipment Building.

200.11 LiDAR Scanning. LiDAR three-dimensional scanning of the existing facilities will provide the design team with an accurate picture of the facilities. The scan provides a three-dimensional view (picture) for use during preliminary design exercises and will also provide a detailed point cloud (survey) for use in developing final design documents and drawings.

HDR will utilize their Lidar scanning equipment and field team to scan the following:

- Interior and exterior of the existing tertiary treatment building (including roof if accessible)
- Interior and exterior of Equipment Building
- Exterior of septage receiving area and interior if accessible

Scanning is expected to take 2 days and require a team of 1 field personnel. Once scanning is complete, HDR will process scanned files into final products for use the design team in reviewing the site/facilities or integration into CAD drawings for final design.

200.12 30-percent Design Drawings and Specifications. Develop 30% level drawings of each area to be upgraded. Conduct a review session with the City to review the design and receive feedback. 30% Design package shall include:

- Technical Specification Table of Contents
- Proposed Drawing List
- Process Mechanical Design Criteria
- Draft P&IDs

The main elements included in the 30% Drawings include the following:

Blowers. Blowers are pre-selected and pre-purchased under a separate task and will be assigned to the Contractor for installation. HDR will provide engineering service to design the blower installation with the appropriate connections and supporting systems depending on the manufacturer.

Design for Centrifuge Installation (Owner furnished equipment). Centrifuge No. 2 will be provided by the City along with its control panel. HDR will provide engineering services to design the centrifuge installation with the appropriate connections and supporting systems.

Design for Hydrocyclones. Two hydrocyclones for grit washing will be designed as a replacement of the existing system. HDR will provide engineering services to design the centrifuge installation with the appropriate connections and supporting systems.

UV Equipment Building Modifications. Based on the outcome and discussions from the UV Equipment TM, the design of the UV system for the Effluent Building Modifications will be provided.

HVAC and Equipment Building Modifications. Based on the outcome and discussions from the HVAC TM (See TO2) and Odor Control TM, the design of the HVAC system for the Equipment Building Modifications will be provided.

Instrumentation. Prepare contract specifications TOC and drawings for the replacement of the instrumentation and required for HVAC, Septage Receiving, and Blowers for the Equipment Building.

Electrical. Prepare contract specifications TOC and drawings for the replacement of the VFD for the blowers and pumps within this facility. Contract documents will detail the electrical design for HVAC, Septage Receiving, and Blowers for the Equipment Building.

Structural. Prepare contract specifications TOC and drawings for the relocation of the generator currently located within the Equipment Building. It is assumed that a new door will be placed on the exterior wall of the current generator room, a new floor hatch will be installed in the current generator room, and that the current floor hatch to the sludge pumping room will be removed and sealed. It is also expected that larger wall or roof openings will be required for the blower room to accommodate increased airflow required for the new blowers.

- 200.13 60-percent Design Drawings and Specifications.** Develop the 30-percent drawings and specifications to the 60-percent level. Conduct a review session with the City to review the design and receive feedback.

Assumptions

1. The compiled TM for all TM items will be no more than 20 pages each in length (including text, tables, and graphics).
2. Review meetings and discussion with City will consist of 3 virtual meetings held in MS Teams or Webex. In-person meetings will assume one hour of travel time each way. Meetings will be two hours in duration with an additional hour for notes and documentation. Two HDR staff will attend

each meeting. The review meetings are as follows:

- a. The first meeting will include review of the compiled TM's.
- b. The second meeting will include review of the 30-percent drawings and specifications.
- c. The third meeting will include review of the 60-percent drawings and specifications.

City Responsibilities

City responsibilities are as follows:

1. Review and provide timely (within two weeks), consolidated comments to the 30-percent drawings and specifications.
2. Review and provide timely (within two weeks), consolidated comments to the compiled TM's.
3. Review and provide timely (within two weeks), consolidated comments to the 60-percent drawings and specifications.
4. Attend and participate in review meetings.

Deliverables

1. Compiled TM's, in PDF format.
2. 30-percent Design Drawings and Specification List, in PDF format.
3. 60-percent Design Drawings and Specifications, in PDF format.

Task 300. Final Design

Objective

Bring the design elements in the 60-percent plans and specifications to 90-percent and 100-percent design development and prepare plans and specifications for bidding.

Approach

The design engineering approach and submittals are as follows:

1. Final Design, 90-Percent Submittal: Deliverables at this stage are:
 - a. 90-percent technical specifications, e-mailed in PDF format.
 - b. 90-percent drawings, e-mailed in PDF format.
 - c. Building Information Model, e-mailed in Navisworks format.
2. Final Design, 100-Percent Submittal: Deliverables at this stage are:
 - a. 100-percent technical specifications, e-mailed in Word and PDF format.
 - b. 100-percent drawings, e-mailed in PDF format.
 - c. Building Information Model, e-mailed in Navisworks format.

Assumptions

1. The review meeting and discussion with City will consist of 1 virtual meeting. Meetings will be two hours in duration with 1 hour for notes and documentation. Two consulting staff will attend each meeting. The review meetings are as follows:

- a. The review meeting will include review of the 90-percent drawings and specifications.

HDR Services

The following subtasks will be performed:

300.01 90-percent Design Drawings and Specifications. Develop the 90-percent drawings and specifications. Conduct a review session with the City to review the design and receive feedback.

100-percent Design Drawings and Specifications (Bid Set). Develop the 100-percent drawings and specifications.

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. Attend and participate in review meetings.

Deliverables

1. One set of bid-ready construction documents (specifications and drawings), in PDF format
2. Up to two sets of printed bid-ready construction documents, with half-size drawings shipped via express mail (if requested).

Task 400. Construction Sequence, Schedule, and Opinion of Probable Construction Cost

Objective

The City requires an estimate of the probable project construction cost (OPCC) for budget management purposes. A construction sequence is to be included in the specifications so that the Contractor understands the overall sequence of work and to reinforce that adequate facilities remain operational during construction. A construction schedule is also required to show the time for construction completion for bidding purposes. The contractor will develop their own schedule for construction.

Approach

HDR will prepare an engineer's opinion of the probable construction cost (OPCC). The estimate developed during the preliminary design will be updated at each stage of the project. A sequence of construction will be developed, which will serve as input to specification Section 01 01 40, Work Sequence. From the sequence, a construction schedule will be developed. The schedule will be used to identify overall project duration.

HDR Services

The following subtasks will be performed:

- 400.01 60-Percent Design OPCC:** Prepare an OPCC at the 60-percent design phase. The estimate, which will be subdivided by specification section number, categorized into labor, equipment, materials, and installation. Factors will be applied for mobilization, testing and startup, training, contractor's overhead and profit, and applicable taxes. The OPCC will include a general description of qualifications and assumptions.
- 400.02 OPCC Update:** The OPCC will be updated at the 90-percent design stage.
- 400.03 60-Percent Design Construction Sequence:** A draft construction sequence will be prepared at the 60-percent design stage to verify that the design is constructible and that overall plant operations will not be impacted. This draft will also describe temporary facilities and equipment that will be necessary during construction.
- 400.04 Construction Sequence Update:** The Design Conformation construction sequence will be updated at the 90-percent design stage.
- 400.05 60-Percent Design Construction Schedule:** HDR will prepare a preliminary construction schedule at 60-percent design. The construction schedule will identify major project milestones.
- 400.06 Construction Schedule Update:** The preliminary construction schedule will be updated at the 90-percent design stage.

Assumptions

Assumptions are as follows:

1. Construction schedules and cost estimates will be based on the design documents produced at each design stage.
2. For the 60 percent stage, HDR will provide a range of accuracy based upon AACE International Recommended Practice No. 17R-97, Class 3, 30- to 60-percent project definition, +30% to -20% Range of Accuracy).
3. For the 90- and 100-percent estimate, HDR will provide a range of accuracy based upon AACE International Recommended Practice No. 17R-97, Class 2, 90 percent project definition, +20% to -15% Range of Accuracy).

City Responsibilities

City responsibilities are as follows:

1. None identified.

Deliverables

Deliverables are as follows:

1. Estimate of probable construction cost, in e-mailed PDF format, at the Design Conformation, 60-, 90-, and 100-percent design stages.

2. Construction sequence specification, in e-mailed format, at the Design Conformation, 60-, 90-, and 100-percent design stages.
3. Construction schedule, in e-mailed PDF format, at the Design Confirmation, 30-, 60-, 90-, and 100-percent design stages.

Task 500. Bid Services

HDR will provide assistance during the bid phase of the project. The services provided will be to answer questions from Bidders, assemble background information for City published addenda and provide a recommendation for bid award.

HDR Services

- 500.01** Provide project description for the advertisements and notices announcing or soliciting bids for the projects.
- 500.02** Up to two HDR staff will attend pre-bid conference remotely via web based/teleconference to answer questions as appropriate. Some of the responses to questions and requests for additional information may require addenda.
- 500.03** As necessary and as approved by the City, prepare and issue up to three (3) Addenda to address bidder questions to the Bidding Documents.
- 500.04** Assist the City to evaluate bids received and determine contractor responsiveness and responsibility.
- 500.05** Provide a recommendation for award.

Assumptions:

1. One 1-hour pre-bid conference 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 3 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. 13-staff hours are provided for preparation of addenda required to address bidding questions. HDR will send addenda response for publication/distribution by the City. Bidders will address questions to the City. HDR will only respond to questions as requested by the City.
6. 13-staff hours are provided for evaluating bids received.
7. 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 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 600. 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.

Task 700. Headworks and Primary Clarifier Investigation

HDR provided the City with a visual assessment for purposes of determining concrete and steel repairs for the headworks and primary clarifiers. HDR staff made assessments based on the surfaces visible during inspection.

HDR Services

HDR will conduct specific activities including the following subtask:

1. Investigation of the surface condition of the primary clarifiers and headworks channel concrete.

Assumptions

1. HDR staff will investigate visible areas for corrosion and deterioration of concrete. Coring or other destructive testing shall not be used.
2. Tools used for investigation may be small hand tools for assessing the surface condition of discrete areas of the headworks and primary clarifier.
3. Actual improvements may vary depending on conditions discovered by a Contractor during repairs.

City Responsibilities

1. Provide HDR staff access to primary clarifier and headworks as needed.

Deliverables

1. Written assessment of headworks and primary clarifier surfaces to be included in the Task Order 3 basis of design.



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 \$1,432,445.

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	435	\$134,417
200 – Preliminary Design	3,549	\$738,297
300 – Final Design	1,966	\$402,289
400 – Construction Sequence, Schedule, and Opinion of Probable Construction Cost	266	\$58,692
500 – Bid Services	55	\$14,421
600 – Management Reserves		\$75,841
700 – Headworks and Primary Clarifier Investigation	28	\$8,488
Total	6,299	\$1,432,445

Appendix A. – Preliminary Drawing List

Sheet No.	Drawing	Title	Included in Submittal			
			30%	60%	90%	Final
GENERAL						
1	00-G-001	COVER SHEET	X	X	X	X
2	00-G-002	GENERAL ABBREVIATIONS	X	X	X	X
3	00-G-003	CIVIL LEGEND	X	X	X	X
4	00-G-004	ARCHITECTURAL LEGEND	X	X	X	X
5	00-G-005	STRUCTURAL LEGEND	X	X	X	X
6	00-G-006	MECHANICAL LEGEND	X	X	X	X
7	00-G-007	ELECTRICAL & I/C LEGEND	X	X	X	X
8	00-G-008	DESIGN CRITERIA		X	X	X
9	00-G-009	HYDRAULIC PROFILE		X	X	X
10	00-C-500	CIVIL AND ROADWAY DETAILS 1		X	X	X
11	00-C-200	SITE PLAN	X	X	X	X
12	00-C-300	DEMOLITION PLAN		X	X	X
13	00-C-400	YARD PIPING	X	X	X	X
14	00-S-001	GENERAL STRUCTURAL NOTES		X	X	X
15	00-S-002	SPECIAL INSPECTIONS		X	X	X
16	00-E-101	CONDUIT AND CABLE SCHEDULE		X	X	X
17	00-E-102	ELECTRICAL SITE PLAN		X	X	X
18	00-E-103	LIGHTING FIXTURE SCHEDULE		X	X	X
19	00-E-104	ELECTRICAL DETAILS 1			X	X
20	00-E-105	ELECTRICAL DETAILS 2			X	X
EQUIPMENT BUILDING						
21	01-X-101	DEMO PLAN GROUND LEVEL		X	X	X
22	01-X-102	DEMO PLAN LOWER LEVEL		X	X	X
23	01-X-103	DEMO PLAN ROOF LEVEL		X	X	X
24	01-X-104	DEMO PHOTOS 1		X	X	X
25	01-X-105	DEMO PHOTOS 2		X	X	X
26	01-X-106	ELECTRICAL DEMO ONE LINE DIAGRAM		X	X	X
27	01-A-101	SCHEDULES AND DETAILS	X	X	X	X
28	01-A-102	LIFE SAFETY PLAN		X	X	X



29	01-A-103	BUILDING SECTIONS AND DETAILS			X	X
30	01-A-104	WALL REPAIR DETAILS		X	X	X
31	01-A-105	WALL SECTIONS			X	X
32	01-S-101	BUILDING SECTIONS AND DETAILS 1		X	X	X
33	01-S-102	BUILDING SECTIONS AND DETAILS 2		X	X	X
34	01-S-103	HATCHES AND SECTIONS		X	X	X
35	01-S-104	CENTRIFUGE INSTALLATION DETAILS		X	X	X
36	01-S-105	CENTRIFUGE INSTALLATION DETAILS		X	X	X
37	01-D-101	BLOWER PLAN		X	X	X
38	01-D-102	BLOWER DETAILS		X	X	X
39	01-D-103	CENTRIFUGE DETAILS		X	X	X
40	01-D-104	CENTRIFUGE DETAILS		X	X	X
41	01-D-105	HYDROCYCLONE DETAILS		X	X	X
42	01-D-106	HYDROCYCLONE DETAILS		X	X	X
43	01-M-101	HVAC AND PLUMBING DETAILS		X	X	X
44	01-M-102	HVAC AND PLUMBING SCHEDULES		X	X	X
45	01-M-103	LOWER LEVEL HVAC PLAN	X	X	X	X
46	01-M-104	GROUND FLOOR HVAC PLAN	X	X	X	X
47	01-M-105	ROOF HVAC PLAN		X	X	X
48	01-M-106	HVAC SECTIONS		X	X	X
49	01-E-101	EQUIPMENT BUILDING MCC ONE-LINE DIAGRAM		X	X	X
50	01-E-102	GENSET MCC ONE-LINE DIAGRAM		X	X	X
51	01-E-103	GENERATOR DIAGRAMS		X	X	X
52	01-E-104	CENTRIFUGE PANEL DETAILS		X	X	X
53	01-E-105	CONTROL DIAGRAMS 1		X	X	X
54	01-E-106	CONTROL DIAGRAMS 2		X	X	X
55	01-E-107	CONTROL DIAGRAMS 3		X	X	X
56	01-E-108	PANELBOARD SCHEDULE		X	X	X
57	01-E-109	I&C CONDUIT AND WIRING BLOCK DIAGRAM		X	X	X
58	01-E-110	BLOWER ONE LINE DIAGRAM		X	X	X
59	01-E-111	GROUND LEVEL POWER PLAN		X	X	X
60	01-E-112	LOWER LEVEL POWER PLAN		X	X	X
61	01-E-113	ROOF POWER PLAN		X	X	X
62	01-E-114	LOWER LEVEL POWER PLAN		X	X	X

Secondary Treatment Facilities & Equipment Building Upgrades
City of Camas

EFFLUENT BUILDING						
63	02-X-101	DEMO PLAN		X	X	X
64	02-X-102	DEMO PHOTOS 1		X	X	X
65	02-X-103	DEMO PHOTOS 2		X	X	X
66	02-A-101	LIFE SAFETY PLAN		X	X	X
67	02-A-102	BUILDING FLOOR SECTION	X	X	X	X
68	02-A-103	ROOF SECTIONS & DETIALS			X	X
69	02-M-101	HVAC GROUND LEVEL		X	X	X
70	02-M-102	ROOF HVAC PLAN		X	X	X
71	02-M-103	HVAC AND PLUMBING DETAILS		X	X	X
72	02-M-104	HVAC AND PLUMBING SCHEDULES		X	X	X
73	02-M-105	HVAC SECTIONS		X	X	X
74	02-S-101	BUILDING FLOOR PLAN	X	X	X	X
75	02-S-102	BUILDING FLOOR SECTION	X	X	X	X
76	02-S-103	WALL SECTIONS & DETIALS		X	X	X
77	02-S-104	ROOF SECTIONS & DETIALS		X	X	X
78	02-E-101	EFFLUENT BUILDING MCC ONE-LINE DIAGRAM		X	X	X
79	02-E-102	CONTROL DIAGRAMS 1		X	X	X
80	02-E-103	CONTROL DIAGRAMS 2		X	X	X
81	02-E-104	I&C CONDUIT AND WIRING BLOCK DIAGRAM		X	X	X
82	02-E-105	PANELBOARD SCHEDULE		X	X	X
P&ID						
83	00-Y-101	BLOWERS		X	X	X
84	00-Y-102	LEGEND SHEET		X	X	X
85	00-Y-103	UV DISINFECTION		X	X	X
86	00-Y-104	STANDBY GENERATOR		X	X	X
87	00-Y-105	CENTRIFUGE		X	X	X
88	00-Y-106	HYDROCYCLONE		X	X	X
89	00-Y-107	CONTROL BLOCK DIAGRAM		X	X	X

Appendix B. – Preliminary Specification List

00 01 01 - PROJECT MANUAL COVER (SAMPLE)
00 01 07 - SEALS AND SIGNATURES
00 01 10 - TABLE OF CONTENTS (SAMPLE)
00 11 13 - ADVERTISEMENT FOR BIDS (EJCDC C-111—2018)
00 21 13 - INSTRUCTIONS TO BIDDERS (EJCDC C-200—2018)
00 41 13 - BID FORM (EJCDC C-410—2018)
00 43 14 - BID BOND DAMAGES FORM (EJCDC C-435—2018)
00 52 13 - AGREEMENT (EJCDC C-520—2018)
00 61 13.13 - PERFORMANCE BOND (EJCDC C-610—2018)
00 61 13.16 - PAYMENT BOND (EJCDC C-615—2018)
00 72 13 - GENERAL CONDITIONS (EJCDC C-700—2018)
00 73 01 - SUPPLEMENTARY CONDITIONS (EJCDC C-800—2018)
01 11 00 - SUMMARY OF WORK
01 13 13 - MILESTONES
01 14 16 - COORDINATION WITH OWNER'S OPERATIONS
01 14 19 - USE OF SITE
01 29 73 - SCHEDULE OF VALUES
01 29 76 - PROGRESS PAYMENT PROCEDURES
01 31 13 - PROJECT COORDINATION
01 31 19 - PROJECT MEETINGS
01 31 26 - ELECTRONIC COMMUNICATION PROTOCOLS
01 32 16 - CONSTRUCTION PROGRESS SCHEDULE
01 33 00 - SUBMITTAL PROCEDURES
01 42 00 - REFERENCES
01 57 05 - TEMPORARY CONTROLS
01 61 03 - EQUIPMENT - BASIC REQUIREMENTS
01 77 19 - CLOSEOUT REQUIREMENTS
01 78 23 - OPERATION AND MAINTENANCE DATA
01 78 36 - WARRANTIES
01 78 39 - PROJECT RECORD DOCUMENTS
01 78 43 - SPARE PARTS AND EXTRA MATERIALS
01 79 23 - INSTRUCTION OF OPERATION AND MAINTENANCE PERSONNEL
03 00 05 - CONCRETE

03 01 30 - REPAIR AND REHABILITATION OF EXISTING CONSTRUCTION
04 00 00 - DIVISION DIVIDER
06 00 00 - DIVISION DIVIDER
07 00 00 - DIVISION DIVIDER
07 14 00 - FLUID APPLIED WATERPROOFING
07 16 16 - CRYSTALLINE CEMENTITIOUS WATERPROOFING
07 17 00 - BENTONITE COMPOSITE SHEET WATERPROOFING
07 19 00 - LIQUID WATER REPELLENT
07 21 00 - BUILDING INSULATION
07 21 31 - SPRAYED POLYURETHANE FOAM (SPF) INSULATION - MEDIUM DENSITY (FLYSHEET)
07 21 33 - SPRAYED POLYURETHANE FOAM (SPF) INSULATION - LIGHT DENSITY (FLYSHEET)
07 24 13 - POLYMER-BASED EXTERIOR INSULATION AND FINISH SYSTEM
07 26 00 - UNDER SLAB VAPOR RETARDER
07 27 46 - VAPOR PERMEABLE AIR BARRIER (FLYSHEET)
07 42 13 - PREFORMED METAL WALL PANELS
07 42 14 - PREFORMED FACTORY-INSULATED METAL WALL PANELS
07 52 16 - SBS MODIFIED BITUMEN ROOFING SYSTEM
07 53 00 - ELASTOMERIC MEMBRANE ROOFING
07 53 25 - ADHERED ELASTOMERIC (EPDM) SHEET ROOFING
07 54 19 - PVC MEMBRANE ROOFING - FULLY ADHERED
07 61 13 - METAL ROOFING
07 62 00 - FLASHING AND SHEET METAL
07 72 33 - ROOF HATCHES
07 81 00 - FIREPROOFING
07 84 00 - FIRESTOPPING
07 92 00 - JOINT SEALANTS
07 95 13 - EXPANSION JOINT COVERS
08 31 00 - ACCESS DOORS
09 96 00 - HIGH PERFORMANCE INDUSTRIAL COATINGS
22 05 03 - PIPE AND PIPE FITTINGS - PLUMBING SYSTEMS
22 05 23 - GENERAL-DUTY VALVES FOR PLUMBING PIPING
22 05 29 - HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT
22 05 48 - VIBRATION AND SEISMIC CONTROLS FOR PLUMBING PIPING AND EQUIPMENT
22 05 53 - IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT
22 15 00 - GENERAL SERVICE COMPRESSED-AIR SYSTEMS

22 20 00 - PLUMBING FIXTURES AND EQUIPMENT
23 05 03 - PIPE AND PIPE FITTINGS - HVAC SYSTEMS
23 05 13 - COMMON MOTOR REQUIREMENTS FOR HVAC AND PLUMBING EQUIPMENT
23 05 23 - GENERAL-DUTY VALVES FOR HVAC PIPING
23 05 48 - VIBRATION AND SEISMIC CONTROLS FOR HVAC PIPING AND EQUIPMENT
23 05 53 - IDENTIFICATION FOR HVAC, DUCTWORK, PIPING AND HVAC EQUIPMENT
23 05 93 - HVAC SYSTEMS - BALANCING AND TESTING
23 09 00 - INSTRUMENTATION AND CONTROL FOR HVAC SYSTEMS
23 31 00 - HVAC - DUCTWORK
23 34 00 - HVAC - FANS
23 80 00 - HVAC - EQUIPMENT
23 81 29 - VARIABLE REFRIGERANT FLOW HEAT PUMP SYSTEMS
23 81 46 - WATER-SOURCE UNITARY HEAT PUMPS
23 83 00 - RADIANT HEATERS
23 83 16 - RADIANT FLOOR HEATING SYSTEM
23 84 00 - HUMIDITY CONTROL EQUIPMENT
26 05 00 - ELECTRICAL - BASIC REQUIREMENTS
26 05 09 - MOTORS
26 05 19 - WIRE AND CABLE - 600 VOLT AND BELOW
26 05 26 - GROUNDING AND BONDING
26 05 99 - POWER DISTRIBUTION CENTER
26 06 00 - ELECTRICAL SCHEDULES
26 08 13 - ACCEPTANCE TESTING
26 09 16 - CONTROL EQUIPMENT ACCESSORIES
26 09 23 - LIGHTING CONTROL DEVICES (FLYSHEET)
26 09 44 - CENTRALIZED DIGITAL LIGHTING CONTROL SYSTEMS
26 09 46 - DISTRIBUTED DIGITAL LIGHTING CONTROL SYSTEMS
26 12 13 - POWER TRANSFORMERS
26 12 19 - DISTRIBUTION TRANSFORMERS
26 23 00 - SWITCHGEAR
26 24 13 - SWITCHBOARDS
26 24 16 - PANELBOARDS
26 24 19 - MOTOR CONTROL EQUIPMENT
26 29 23 - VARIABLE FREQUENCY DRIVES - LOW VOLTAGE
26 32 15 - ENGINE GENERATOR - NATURAL GAS

26 32 90 - GENERATOR CONNECTION CABINET
33 52 10 - SERVICE PIPING - FUEL SYSTEMS
40 05 00 - PIPE AND PIPE FITTINGS - BASIC REQUIREMENTS
40 05 07 - PIPE SUPPORT SYSTEMS
40 05 19 - DUCTILE IRON PROCESS PIPE
40 05 23 - PIPE - STAINLESS STEEL
40 05 24 - PIPE - STEEL
40 05 51 - VALVES - BASIC REQUIREMENTS
40 05 52 - MISCELLANEOUS VALVES
40 05 59 - FABRICATED STAINLESS STEEL SLIDE GATES
40 05 61 - GATE VALVES
40 05 62 - PLUG VALVES
40 05 63 - BALL VALVES
40 05 64 - BUTTERFLY VALVES
40 05 66 - CHECK VALVES
40 42 00 - PIPE, DUCT AND EQUIPMENT INSULATION
40 61 13 - PROCESS CONTROL SYSTEM GENERAL REQUIREMENTS
40 61 21 - PROCESS CONTROL SYSTEM TESTING
40 61 43 - SURGE PROTECTION DEVICES FOR INSTRUMENTATION AND CONTROL EQUIPMENT
40 61 93 - PROCESS CONTROL SYSTEM INPUT-OUTPUT LIST
40 61 96 - PROCESS CONTROL DESCRIPTIONS
40 62 05 - COMPUTER SYSTEM HARDWARE AND ANCILLARIES
40 63 43 - PROGRAMMABLE LOGIC CONTROLLERS
40 71 00 - FLOW INSTRUMENTATION
40 72 00 - LEVEL INSTRUMENTATION
43 21 00 - PUMPING EQUIPMENT - BASIC REQUIREMENTS
43 23 22 - PUMPING EQUIPMENT - HORIZONTAL SPLIT CASE CENTRIFUGAL PUMPS
43 25 13 - PUMPING EQUIPMENT - SUBMERSIBLE END-SUCTION SEWAGE PUMPS
43 31 83 - ADJUSTING AND BALANCING ODOR CONTROL SYSTEMS
46 23 00 - HYDROCYCLONE
46 76 33 - CENTRIFUGES
46 66 16 - UV DISINFECTION EQUIPMENT
48 19 23 - ELECTRICAL POWER GENERATION TRANSFORMERS