

EXHIBIT A
Scope of Work
Amendment No. 4
City of Snoqualmie
Water Reclamation Facility Phase 3 Improvements
Additional Services During Construction
April 2025

Background

The City of Snoqualmie (City) owns and operates the Water Reclamation Facility (WRF). To accommodate projected flows and loads, handle replacement of aging components installed over 20 years ago, and meet regulatory requirements, the City's 2021 *General Sewer Plan* (GSP) identified multiple projects for Phase 3 of the WRF Improvements.

The City originally contracted with RH2 Engineering, Inc., (RH2) in February of 2022 to provide preliminary design of major WRF improvements, and preliminary and final design of Kimball Creek Lift Station (LS). Over the last 2 years, the contract has been amended and additional tasks have been added. The previous scope of work included the following tasks:

- Task 1 – Project Management**
- Task 2 – Preliminary Design of Major WRF Improvements**
- Task 3 – Preliminary and Final Design of Kimball Creek LS**
- Task 4 – Management Reserve**
- Task 5 – Services During Bidding (SDB) for Kimball Creek LS**
- Task 6 – Final Design of Major WRF Improvements**
- Task 7 – Washington State Department of Ecology (Ecology) Review and City Permitting for Major WRF Improvements**
- Task 8 – SDB for Major WRF Improvements**
- Task 9 – Services During Construction (SDC) for Kimball Creek LS**
- Task 10 – Supervisory Control and Data Acquisition (SCADA) Programming for Kimball Creek LS**
- Task 11 – SDC for Major WRF Improvements**
- Task 12 – SCADA Programming for Major WRF Improvements**

Amendment Introduction

This Scope of Work includes expanding existing Tasks 11 and 12 to provide additional SDC and SCADA programming for Major WRF Improvements.

The construction of the Major WRF Improvements began in August of 2023 and is projected to finish in April of 2025. Throughout the project, the Management Reserve Task has served as a contingency resource during preliminary and final design, and construction related tasks.

The Management Reserve Task has already been used for additional services requested by the City during the project, including the headworks screening replacement, a third-party structural review

during design of the WRF, the Arc Flash Power Study, the catwalk design (Change Order No. 1), the digester pipe modifications (Change Order No. 2), the coarse bubble mixing design (Change Order No. 2), the power shutdown, and emergent SCADA support during interim conditions. The Management Reserve Task also was utilized to absorb the overages of the certified testing company for material testing and special inspection during construction of the Major WRF Improvements. It was determined that the inspector underbudgeted for the full project and the Management Reserve Task was used for its additional fee.

Due to the project's complexities, RH2 needed to provide a higher level of service throughout SDC. Since initial construction began in August 2023, RH2 teamed with City staff and the contractor to develop interim operation plans for a full plant power shutdown, headworks screen shutdown, two oxidation basin shutdowns, and three digester shutdown events. During construction, issues also arose that required RH2's involvement, field support, and additional design services beyond the level anticipated. Some of these issues included mixer locations and associated crane access, axial flow pump catwalk extension, handrail and gate modifications, and oxidation reduction potential (ORP) probe maintenance accessories. Additionally, the headworks screening replacement added via the Management Reserve Task required involvement during construction that was not included in Amendment No. 3. The screen installation required coordination with the manufacturer's representative and field coordination with the contractor as additional components and field modifications to existing components were necessary due to the pre-purchased product's varying dimensions. RH2 also provided additional support to the City by having process coordination meetings on an as-needed basis to review and streamline the WRF's operations, maintain permit compliance, and demonstrate design objectives.

In addition to the efforts needed for SCADA programming of the Major WRF Improvements, some issues arose that resulted in additional SCADA programming efforts beyond what was originally expected. These issues included the following: the temporary pumping system installed by the contractor required daily operational control changes; and emergent operations support was needed during process commissioning to debug SCADA control issues to avoid staff overtime due to nuisance alarms.

As a result of this, the project's scope of work spanning from preliminary design efforts through construction, the requirement to maintain treatment operations and respond to emergent issues, and the City's additional service requests, the original contingency built into the Management Reserve Task was not sufficient for this project's scope. As a result, Tasks 11 and 12 have been amended for RH2 to provide additional SDC and SCADA support for the City through project completion.

Task 11A – Additional SDC for Major WRF Improvements

Objective: Provide additional SDC of the Phase 3 improvements to the level of effort stated in the Fee Estimate. This existing task is amended to cover the remainder of the proposed improvement's construction.

Approach:

- 11.8A Prepare Additional Facility Operation and Maintenance (O&M) Manuals – Prepare detailed O&M manual sections for the WRF Phase 3 improvements. Include an overview of process components, detailed descriptions of normal and emergency operational procedures, troubleshooting and preventative maintenance measures, and operator safety considerations. Include appendices of process schematics, manufacturer documentation, material safety data sheets, and periodic operations checklists. Provide Ecology with a copy of the WRF O&M manual sections for review and incorporate comments into the final O&M manual section documents.
- 11.9A Provide Additional Consultation During Commissioning – Review SCADA and daily process operations data and consult with City staff on the operational strategy to ensure permit compliance and design objectives are consistently met.

Assumptions:

- *The services described in Task 11A for additional SDC support to the City will be performed to the level of effort identified in **Exhibit B**.*

Task 12A – Additional SCADA Programming for Major WRF Improvements

Objective: Provide additional control software development services for new operator interface (OI) and programmable logic controller (PLC) equipment. Provide additional software development services for SCADA computer systems. Provide additional field testing and commissioning support services related to the control system software at the WRF. This existing task is amended to cover the remainder of the proposed improvement's construction. *This Task will be supported by RH2's subsidiary, Control Systems NW LLC, via a subconsultant services agreement.*

Approach:

- 12.3A Provide Additional Development of PLC Software – Develop the PLC data point names, descriptions, and addresses based on the control panel design and City data point standards defined in Amendment No. 3, subtask 12.2, and gathered during the workshops. Develop control loop descriptions, alarm interlocks, and control data required between controllers based on facility requirements. Develop software using Studio 5000 for Logix PLCs based on the previously defined PLC information.
- 12.4A Provide Additional Development of OI Software – Develop the OI for the control panels. *OI screen designs will be consistent with human machine interface (HMI) screen designs. OI screens will contain the same graphical program that will be a subset of the HMI screen design. Public Works Director will have final approval of HMI screen designs.*

12.5A Provide Additional Configuration and Development of SCADA Computer Software – Work with City staff to design and configure HMI computer systems and develop HMI screen designs and layouts based on HMI standards defined by the City SCADA Master Plan and at software development workshops. *Public Works Director will have final approval of HMI screen designs.* Work with City staff to develop the following HMI computer software:

- Update to overall facility process display that identifies major plant information in one overall screen. Links from this screen will dynamically display facility subsections.
- Facility displays for each treatment subsystem.
- Facility setpoint control components.
- Facility real time and historical alarms and events displays. *Historical displays will filter alarms and events by specific time and data.*
- Facility historical trending of analog and discrete data. This screen will be configurable to display normal groups of data or ad-hoc data. Trend data/time information will be selectable. Trend data will be capable of exporting to CSV files.
- Summary displays will show summaries of totals, averages, minimums, and maximums. This information will be displayed for daily, monthly, and yearly periods of time.
- Develop system reports based on information identified during software development workshops.

12.8A Perform Additional Commissioning Services and Quality Assurance/Quality Control (QA/QC)

- SCADA Computer Systems
 - Work with City staff to install and configure existing HMI computer systems. *This work will consist of updating existing computer HMI software and software utilities required to maintain the SCADA computer systems.*
- Facility Commissioning and QA/QC
 1. Install facility software components on the SCADA computers prior to testing.
 2. RH2, the City, and the contractor will be on site at the WRF during testing.
 3. Rerun the factory tests that were implemented during Amendment No. 3, subtask 12.7, using existing facility instrumentation.
 4. Test communications between the facility controllers and the HMI computer systems.
 5. Test data points and control capabilities between the facility controllers.
 6. RH2, the contractor, and the City will test control capabilities of the facility.

7. RH2 and the City will approve the completion of a facility based on the original design and information developed and approved in Amendment No. 3, subtasks 12.1 through 12.5. *Major changes to the system at the time of testing are not included in this Scope of Work.*

12.9A Prepare Additional O&M Documentation – Provide a summary report documenting the QA/QC completed on the WRF Phase 3 SCADA improvements. The report will include a full list of new devices, objects, and alarms installed under Phase 3 and included in QA/QC procedure, the Arc Flash Power Study, and reference to O&M controls narratives.

Assumptions:

- *The services described in Task 12A for additional software development, testing, and startup services to City staff as described to the City will be performed to the level of effort identified in **Exhibit B**. City staff will review and approve all OI and HMI screen designs developed in subtasks 12.4A and 12.5A. Public Works Director will be responsible for final approval of design within a reasonable timeframe. RH2's Fee Estimate assumes a certain level of cooperation and timeliness from any third parties required for testing. All installation will be performed by others. If additional hours are needed to accomplish Task 12A due to events beyond RH2's control, RH2 will notify the City in advance of additional hours needed, and additional hours shall be mutually negotiated.*
- *This Scope of Work does not include HMI data point validation of remote LS facilities. It is assumed that the existing HMI data points for remote LS facilities are valid.*
- *RH2 is not responsible for site safety or directing others in their work.*

RH2 Deliverables:

- QA/QC Report in electronic PDF.

Project Schedule

RH2 anticipates that SDC for the Major WRF Improvements will be completed in April 2025 for the process and mechanical portions of the project and February 2026 for the completion of ongoing control systems integration support.

EXHIBIT B

Fee Estimate

Amendment No. 4

City of Snoqualmie

Water Reclamation Facility Phase 3 Improvements

Additional Services During Construction

Apr-25

Description		Total RH2 Hours	Total RH2 Labor	Total CSNW Hours	Total CSNW Labor	Total Expense	Total Cost
Task 11A	Additional SDC for Major WRF Improvements	315	\$ 70,920	-	\$ -	\$ 2,813	\$ 73,733
11.8A	Prepare Additional Facility O&M Manuals	105	\$ 24,110	-	\$ -	\$ 749	\$ 24,859
11.9A	Provide Additional Consultation During Commissioning	210	\$ 46,810	-	\$ -	\$ 2,064	\$ 48,874
Task 12A	Additional SCADA Programming for Major WRF Improvements	146	\$ 33,220	321	\$ 85,153	\$ 3,894	\$ 122,267
12.3A	Provide Additional Development of PLC Software	20	\$ 4,882	32	\$ 8,288	\$ 357	\$ 13,527
12.4A	Provide Additional Development of OI Software	20	\$ 4,882	20	\$ 5,180	\$ 279	\$ 10,341
12.5A	Provide Additional Configuration and Development of SCADA Computer Software	30	\$ 6,774	58	\$ 15,782	\$ 674	\$ 23,230
12.8A	Perform Additional Commissioning Services and QA/QC	28	\$ 6,360	147	\$ 39,023	\$ 1,750	\$ 47,133
12.9A	Prepare Additional O&M Documentation	48	\$ 10,322	64	\$ 16,880	\$ 835	\$ 28,037
PROJECT TOTAL		461	\$ 104,140	321	\$ 85,153	\$ 6,707	\$ 196,000

EXHIBIT C
RH2 ENGINEERING, INC.
2024 SCHEDULE OF RATES AND CHARGES

RATE LIST	RATE	UNIT
Professional I	\$168	\$/hr
Professional II	\$186	\$/hr
Professional III	\$207	\$/hr
Professional IV	\$227	\$/hr
Professional V	\$245	\$/hr
Professional VI	\$259	\$/hr
Professional VII	\$282	\$/hr
Professional VIII	\$296	\$/hr
Professional IX	\$314	\$/hr
Technician I	\$132	\$/hr
Technician II	\$144	\$/hr
Technician III	\$162	\$/hr
Technician IV	\$177	\$/hr
Technician V	\$193	\$/hr
Technician VI	\$213	\$/hr
Technician VII	\$231	\$/hr
Technician VIII	\$243	\$/hr
Control Specialist I	\$169	\$/hr
Control Specialist II	\$187	\$/hr
Control Specialist III	\$208	\$/hr
Control Specialist IV	\$228	\$/hr
Control Specialist V	\$245	\$/hr
Control Specialist VI	\$259	\$/hr
Control Specialist VII	\$278	\$/hr
Control Specialist VIII	\$292	\$/hr
Control Specialist IX	\$292	\$/hr
Control Technician I	\$132	\$/hr
Control Technician II	\$144	\$/hr
Control Technician III	\$162	\$/hr
Control Technician IV	\$177	\$/hr
Control Technician V	\$193	\$/hr
Control Technician VI	\$213	\$/hr
Control Technician VII	\$231	\$/hr
Control Technician VIII	\$243	\$/hr
Administrative I	\$88	\$/hr
Administrative II	\$103	\$/hr
Administrative III	\$123	\$/hr
Administrative IV	\$144	\$/hr
Administrative V	\$166	\$/hr
CAD/GIS System	\$27.50	\$/hr
CAD Plots - Half Size	\$2.50	price per plot
CAD Plots - Full Size	\$10.00	price per plot
CAD Plots - Large	\$25.00	price per plot
Copies (bw) 8.5" X 11"	\$0.09	price per copy
Copies (bw) 8.5" X 14"	\$0.14	price per copy
Copies (bw) 11" X 17"	\$0.20	price per copy
Copies (color) 8.5" X 11"	\$0.90	price per copy
Copies (color) 8.5" X 14"	\$1.20	price per copy
Copies (color) 11" X 17"	\$2.00	price per copy
Technology Charge	2.50%	% of Direct Labor
Night Work	10.00%	% of Direct Labor
Mileage	\$0.7000	price per mile (or Current IRS Rate)
Subconsultants	15%	Cost +
Outside Services	at cost	

Rates listed are adjusted annually.