

RESOLUTION NO. 2024-57

A Resolution Approving the 1st amendment to the professional services contract with Jacobs Engineering Group Inc. for the Public Works Water Reclamation Facility (WRF) and Conveyance System Master Plan Update, Project 2022-5 to include Supervisory Control and Data Acquisition (SCADA) System work.

RECITALS:

Whereas, On September 13, 2022, Jacobs Engineering Group Inc. was awarded the Professional Services Contract for the WRF and Conveyance System Master Plan Update Project 2022-5; and

Whereas, While Jacobs was performing these services it was determined that there was a need to update the Water Reclamation Facility and Pump Station SCADA System ; and

Whereas, Jacobs Engineering is qualified and capable of performing these services; and

Whereas, Project funding is included in the 2024-2026 Wastewater Capital Fund (77).

NOW, THEREFORE, BE IT RESOLVED BY THE COMMON COUNCIL OF THE CITY OF McMinnville, OREGON, as follows:


1. That the first amendment set forth in **Exhibit A** to the Professional Services Contract with Jacobs Engineering Group Inc. for the Public Works Water Reclamation Facility (WRF) and Conveyance System Master Plan Update to include SCADA System work for \$210,673.00 is approved. Bringing the total not to exceed price of the contract to \$1,607,866.00.
2. That this resolution shall take effect immediately upon passage and shall continue in full force and effect until modified, revoked, or replaced.

Adopted by the Common Council of the City of McMinnville at a regular meeting held the 12th day of November 2024 by the following votes:

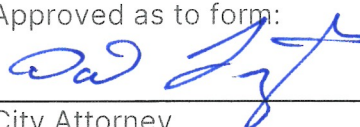
Ayes: Payne, Peralta, Menke, Garvin, Geary, Chenoweth

Nays: _____


Approved this 12th day of November 2024.



MAYOR

Approved as to form:


City Attorney

Attest:


City Recorder

EXHIBITS:

- A. Water Reclamation Facility (WRF) and Conveyance System Master Plan Update Project 2022-5 Amendment 1 to Professional Service Contract.

CITY OF McMinnville
FIRST AMENDMENT TO PROFESSIONAL SERVICES AGREEMENT

**Water Reclamation Facility (WRF) and Conveyance System Master Plan Update
Project**

This First Amendment to Professional Services Agreement (“First Amendment”) is effective the 12th day of November 2024 (“Effective Date”), by and between the **City of McMinnville**, a municipal corporation of the State of Oregon (“City”), and **Jacobs Engineering Group INC.**, a Delaware corporation (“Consultant”), upon the terms and conditions set forth below.

RECITALS

WHEREAS, the City entered into a Professional Services Agreement (“Agreement”) with Consultant on September 13, 2022 relating to the Water Reclamation Facility (WRF) and Conveyance System Master Plan Update Project. (“Project 2022-5”); and

WHEREAS, the City requires additional services which Consultant is capable of providing, under terms and conditions hereinafter described; and

WHEREAS, the City and Consultant anticipate that additional time is needed to complete the Services stated in the Agreement

NOW, THEREFORE, in consideration of these mutual promises and the terms and conditions set forth herein, the parties agree as follows:

AGREEMENT

The Agreement is amended as follows:

Section 1. Term

The term of the Agreement is hereby extended to December 31, 2025.

Section 2. Additional Services To Be Provided

Consultant will perform the Additional Services more particularly described in **Exhibit A**, attached hereto and incorporated by reference herein, for the Project pursuant to all original terms of the Agreement, except as modified herein.

Section 3. Compensation

The City agrees to pay Consultant on a time and materials basis, guaranteed not to exceed TWO HUNDRED TEN THOUSAND SIX HUNDRED SEVENTY THREE DOLLARS (\$210,673.00) for performance of the Additional Services (“Additional Compensation Amount”) which, when totaled with the Compensation Amount, equals a total not-to-exceed amount of ONE MILLION SIX HUNDRED

SEVEN THOUSAND EIGHT HUNDREDSIXTY SIX DOLLARS (\$1,607,866) for the performance of the Services and Additional Services (“Total Compensation Amount”). Consultant’s estimate of time and materials is attached hereto as **Exhibit A** and incorporated herein by reference.

Section 4. All Other Terms

All of the other terms and conditions of the Agreement shall remain in full force and effect, as therein written. Unless otherwise defined herein, the defined terms of the Agreement shall apply to this First Amendment.

The Consultant and the City hereby agree to all provisions of this First Amendment.

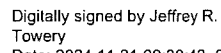
CONSULTANT:

Jacobs Engineering Group Inc.

By: _____  _____
Print Name: Alan Chang
As Its: Designated Manager
Employer I.D. No. 95-4081636

CITY:

CITY OF McMINNVILLE

By: _____ 
Print Name: Jeffrey R. Towery
As Its: City Manager

APPROVED AS TO FORM:

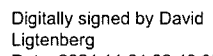
David Ligtenberg 
City Attorney
City of McMinnville, Oregon

EXHIBIT A

Agreement for Professional Services for the City of McMinnville Water Reclamation Facility (WRF) and Conveyance System Master Plan Updates Project 2022-5 Amendment 1

PROJECT DESCRIPTION

To develop a SCADA system master plan to identify and provide a roadmap for implementation of recommended system improvements.

BACKGROUND

Portions of the existing SCADA system has reached the end of its useful life and requires upgrading and replacement to meet current and future operational demands, reliability, and security.

The existing facilities that will be evaluated for the SCADA master plan includes:

- One (1) Water Reclamation Facility (WRF)
- Public Works Operations
- One (1) Pre-Screening Facility/Diversion Structure
- One (1) Raw Sewage Pump Station
- Fourteen (14) Remote Pumping Stations

The existing SCADA and operational technology (OT) systems for these facilities are described below:

- The existing SCADA HMI uses Wonderware Intouch as the graphical user interface for WRF and remote facilities. The City is considering migrating to a new SCADA HMI platform for future system monitoring and control and expressed interest in Inductive Automation's Ignition platform, but no decision has been made.
- The system uses radios for SCADA communication to all the remote stations.
- The existing system uses a variety of different PLCs for each facility (Allen Bradley PLC5, SLC 505s, CompactLogix, ControlLogix and Siemens)

The City has not previously conducted a SCADA master planning effort.

WORK APPROACH

The master planning effort will be initiated with an onsite kickoff meeting at City's facility. Immediately following the kickoff meeting, Jacobs will visit just a few of City's representative remote stations to build a familiarity with the existing infrastructure. Jacobs will lead workshops to discuss findings and present alternatives for improvement. The final master plan recommendations will be determined by the City considering the material presented by Jacobs. Budgetary cost estimates for implementation of the recommended improvements will be provided to assist the City with planning.

SCOPE OF WORK

The major tasks are described below:

Task 15.1 Project Management

Jacobs will plan and execute the project as described. This task includes the following project management work activities:

- a. Monthly Project Management:
 - o Monitor project progress monthly including work completed, work remaining, budget expended, schedule, estimated cost of work remaining and estimated cost at completion; manage activities within total project budget.
 - o Monitor project activities for potential changes, anticipate changes whenever possible, and with City approval, modify project tasks, task budgets, and approach to keep the overall project within budget and on schedule.
 - o Prepare and submit invoice with monthly narrative report.
- b. Bi-Weekly Coordination Meetings with City Project Manager

Jacobs will hold up to 18 bi-weekly calls with City's project manager to discuss schedule, budget, the direction of the project and any needed information or data. The effort will document meeting decisions and action items, assign the activities to team members, and follow-up to ensure timely resolution.

Task 15.2 Discovery

The discovery effort will be used for collecting and assembling existing system information. Major tasks are identified below:

- a. Onsite Project Kickoff Meeting

Jacobs will lead a one-day onsite kickoff meeting with City key stakeholders. City will identify and coordinate participation of all stakeholders they feel should be involved in the effort. Jacobs' participants will include Jacobs' project manager and the technical lead. The purpose of this meeting is to introduce the project parties, review the project scope, identify project priorities, discuss project schedule, and collect existing system information and drawings from City staff.

City staff will provide available documentation for the existing system to assist with the assessment (PLC I/O lists, network drawings, panel drawings, etc.).

b. Field Data Collection

Jacobs will provide up to 40 hours (5 days) for technical staff to visit the WRF, 14 Pump Stations, Raw Sewage Pump Station, and the Pre-Screening Structure to gather field data, take photos, and collect information for the existing control system equipment. City will provide a staff member knowledgeable about the SCADA system to accompany Jacobs staff during these site visits.

c. System Data Organization

Jacobs will provide up to 60 hours of technical staff labor (offsite) to assemble and organize the existing system information. Major efforts include developing simple Excel tables to summarize collected information, development of simple Bluebeam sketches, and printing copies of City-provided drawings (as needed).

Task 15.3 Assessment

The assessment effort will be used to evaluate major system improvement alternatives considering the existing system condition and industry trends. Major tasks are identified below:

a. Alternatives Evaluation Workshops

Jacobs will lead up to ten (quantity of 10) Microsoft Teams workshops (average 2.5 hours each) to discuss the findings of the discovery effort and present alternatives for system improvements. This effort will focus on current state-of-the-art approaches commonly used in the industry and will consider anticipated direction of technologies that the City may wish to consider. The workshops will be used to facilitate the City's decision making for the project alternatives, including selection of major product platforms and project approaches. Jacobs will document City project decisions in the master plan.

Each workshop will be attended by Jacobs project manager and I&C lead. Additional Jacobs technical staff will attend as needed to address each topic. The estimated meeting quantity and durations are based on the following major topics:

i. **(Qty 1) Existing system understanding, new functional requirements, and "advanced technology" alternatives.**

During this workshop, City staff will explain the existing system and desired new functions. Jacobs will discuss some of the potential "advanced technology" alternatives. Example advanced technology topics include connectivity with a digital twin, automatically triggering work order request in the computerized maintenance management system (CMMS) based on alarms or runtimes from the SCADA system, use of the SCADA HMI graphics as an interface for entry of laboratory data into the SCADA historian to accommodate automated reports, use of the SCADA HMI graphics to access electronic O&M data, application of alarm analysis software to comply with ISA18.2 alarm management philosophy, and potential for new automated functions to address water

age and/or ratcheted rate charges.

ii. **(Qty 1) PLC hardware and control panel improvements.**

This workshop will evaluate needs and options for upgrades and replacement of the existing PLC system and control panel hardware that will address system/component reliability, redundancy, standardization, evaluate redundant 24VDC power supplies, installation of Uninterruptible Power Supplies (UPS) for backup power and eliminate unused wiring.

iii. **(Qty 1) PLC systems, HMI systems, alarm notification, historian, and reporting.**

This workshop will evaluate needs and options for upgrades or replacement to address existing system issues (product obsolescence, product support, failures, etc.), add new features, standardize products and platforms to facilitate O&M. The workshop will include presentation of Inductive Automation Ignition HMI capabilities, high performance HMI approaches with sample graphics demonstration, and recommended approaches for alarm notification, historian, trending, and automated reporting approaches, and SCADA software programming. The discussion will also present a concept for backing up critical SCADA files (AssetCentre).

iv. **(Qty 1) Facilities - Server and Control Rooms.**

This workshop will evaluate needs and options for new server and control rooms to accommodate the SCADA equipment and provide dedicated rooms for operations for SCADA system interfacing.

v. **(Qty 2) OT Systems, networks, and facilities.**

These workshops will discuss options and recommendations related to the OT systems, including hardware, software, and networks. Recommendations will be based on NIST 800.82, Guide to Operational Technology (OT) Security. The workshops will discuss the use of intra-plant singlemode fiber and servers (or recommendation of alternatives), secure remote access, network monitoring, disaster recovery planning, and development of OT policies and procedures. The workshops for the OT system will be divided into two separate workshops as follows:

1. OT system and features (automated backups for disaster recovery, secure remote access, network monitoring, time sync, etc.)
2. Plant Network/Fiber

The scope of work does not include a cybersecurity assessment of the existing infrastructure based on direction from City's project manager.

vi. **(Qty 1) Remote station communication systems.**

This workshop will discuss options and recommendations related to the remote station communication systems, including evaluation of the existing radio system fitness for use, needs, and cybersecurity versus the potential for alternative communication options to provide additional features that may be desired by the utility. A primary topic will be

identifying a concept for existing communication system infrastructure to accommodate centralization of polling and monitoring from the WRF.

vii. (Qty 1) Connectivity with External Systems.

This workshop will discuss potential connectivity between the SCADA historian and other enterprise data systems, including computerized maintenance management system (CMMS), asset management system (AMS), laboratory information management system (LIMS), and compliance reporting system.

viii. (Qty 1) SCADA system documentation and planning for recommended improvements.

This workshop will discuss two major topics:

1. **SCADA DOCUMENTATION:** The availability, quality, and accuracy of the existing SCADA-related documentation to identify the requirements for updates. Major topics include P&IDs, network block diagrams, panel drawings, PLC I/O wiring drawing, asset inventories (hardware, software licenses), and PLC I/O lists. Consideration should also be given to needs for development of a SCADA operations guide or updates to the system O&M manual.
2. **PLANNING FOR RECOMMENDED IMPROVEMENTS:** The intention for this workshop is for the City to identify major sequence requirements and constraints that should be considered during development of the implementation plan and budgetary cost estimates for recommended improvements. Major topics to be considered include cash flow restrictions, other City capital improvements projects, seasonal construction limitations, equipment pre-purchasing concepts to mitigate lead time issues, and scope split (will City staff self-perform any work, does City have delivery specialists that should be used for certain work - radio shop, panel fabricator, electrician, etc.).

ix. (Qty 1) Overflow topics.

This workshop is reserved for as-needed topics that may not have been resolved in the other pre-defined workshops identified above.

b. Workshop Preparation and Post-Workshop Assessment

Jacobs will provide up to 40 hours of labor to prepare an agenda, plan presentation material, and assemble meeting notes for each workshop. The planning effort includes coordination with Jacobs' internal experts and external resources, including websites and manufacturer's representatives.

Task 15.4 Master Plan Document Development

Jacobs will prepare a written master plan to describe the existing system based on the workshop discussions, provide an evaluation of the existing system condition, present the upgrade options discussed at the alternatives evaluation workshops, and identify recommended major improvements. This work includes preparation of the document text and development or modification of up to five simple figures to convey concepts described in the document.

The main document sections include table of contents, system overview, desired new functions (including advanced technology alternatives), existing system description, existing system assessment, recommended improvements, and capital/implementation planning.

The major technical systems to be evaluated by the document are listed below. For each major topic listed below, the document will include an existing system description, existing system assessment, and list of recommended improvements:

- Programmable Logic Controllers (PLCs)
- Human-Machine Interface (HMI), including alarm notification, historian, trending tools, and automated reports
- OT Systems (SCADA network and computer equipment, including network and remote station communication)
- Interfaces with Enterprise Data Systems
- Existing System Documentation

Major efforts are identified below:

a. Main Body

Jacobs will prepare written text to document the existing system based on the workshop discussions, provide an analysis of the existing system considering the utility's needs and identified gaps relative to industry trends, and recommend system improvements.

b. Implementation Plan

Jacobs will develop written text to document the planned implementation concepts, including major constraints (based on input from City staff), identification of any recommended early procurement packages, and work phasing. It will also outline a timeline concept for the major planning and design efforts required for project execution, including software planning, design, construction, SCADA programming, construction, and commissioning. The document is not intended to identify specific years or dates, but to provide planning-level information considering the relative levels of effort and required order of attack.

c. Budgetary Cost Estimates

Jacobs will provide up to 40 hours of labor to develop budgetary cost estimates for planning, design, implementation and ongoing maintenance of the recommended SCADA improvements resulting from the system assessment tasks above. The budgetary financial planning figures will be based on ACE International Class 5 order-of-magnitude engineering opinion of costs.

d. Quality Control

Jacobs will provide up to 16 hours of labor to provide quality control (QC) review of the Master Plan document prior to submitting the document to the City. Review will be provided by senior staff.

e. Allowance for Fixup after Review Workshops

Jacobs will provide up to 24 hours of labor to update the Master Plan document to address comments from the review workshops with the City.

Task 15.5 Deliverable Review Workshops

Jacobs will present the draft and final master plan documents to City staff as outlined below:

a. Draft Report Review

The purpose of this meeting is to review the compiled draft report with the City's major stakeholders, including the project findings and recommended improvements prior to final completion. The City will identify and coordinate participation of all stakeholders they feel should be involved in the effort. This meeting could be held prior to the completion of capital and implementation planning, if desired by the City. This meeting will be used to gain acceptance of the draft report findings and recommendations prior to final completion.

The half-day workshop will be held virtually via Microsoft Teams to save project cost. The level of effort includes budget for Jacobs' project manager and I&C lead, plus up to 2 hours of participation by each of Jacobs' 3 technical specialists.

b. Implementation Plan Review

The purpose of this meeting is to review the implementation plan and budgetary cost estimates prior to finalization. It is common for the plan to require minor editing to accommodate the budget, cash flow, or constraints once the initial plan is developed based on the workshop discussion.

The half-day workshop will be held virtually via Microsoft Teams to save project cost. The level of effort includes budget for Jacobs' project manager and I&C lead.

c. Final Report Presentation

The purpose of this meeting is to present the final report to City's project manager. The 2-hour workshop will be held onsite with Jacobs' project sponsor, and project manager.

Task 15.6 Weekly Team Meetings

Jacobs will hold regular team meetings to discuss information needs, staffing issues, task progress, and schedule. The budget for this task assumes Jacobs' project manager and technical lead will attend regularly (up to 40 one-hour meetings). The budget includes 4-hour allowances for Jacobs' OT, HMI, and advanced technology specialists.

Task 15.7 Owner Managed Contingency

This task will be used to manage unforeseen work to address out of scope items encountered during the work under this amendment.

ASSUMPTIONS

The scope assumes the following:

- All work will be completed in calendar year 2024 and 2025. Jacobs increases labor rates annually on January 1 each calendar year. The cost is based on 2024 rates, with 3.5% estimated escalation allowance for work anticipated to be performed in 2025.
- For project management:
 - The project management level of effort estimate assumes a 9-month maximum project duration.
 - The level of effort for monthly project management is based on an average of 8 hours per month (4 hours for project manager, 2 hours for project controls, 2 hours for project accountant / project assistant).
- OT recommendations will be based on NIST 800.82, Guide to Operational Technology (OT) Security.
- For existing system data collection:
 - All existing system data will be provided by City staff. The evaluation will be based on workshop discussion and supplemented by City-provided data, and site evaluation conducted by Jacobs. The following minimum data will be provided by the City:
 - Remote station list
 - PLC / RTU I/O lists
 - Network / communication block diagrams
 - Control panel and PLC I/O wiring drawings
 - P&IDs
 - City will coordinate availability of resources for participation in the meetings.
 - City staff will select the SCADA system improvement products and approaches based on alternatives presented in the workshops by Jacobs. Jacobs will document the City's decisions in the master plan.
- The scope of work for project definition does not include development of complex figures or any drawings (Jacobs has not included labor effort for CAD drawing development). All simple figures developed to supplement the written text will be produced using Visio or Bluebeam.
- City responsibilities include supply of all existing system data to be used for the assessment, selection of key stakeholders for workshop attendance, participation in workshops, selection of all recommended improvements and project approaches based on information and examples provided by Jacobs, and review of all draft deliverables. Jacobs assumes that the City will return review comments within 2 weeks from submission of each deliverable.
- This scope of work does not include:
 - Development of design or software standards.
 - Development of field as-builts drawings

- Software configuration changes or design / implementation of any improvements.
- Evaluation of enterprise data systems, including but not limited to laboratory information management, asset management, and maintenance management.
- Evaluation of existing field instrumentation or process equipment
- Cybersecurity assessment of the existing system.
- Any radio system engineering, including pathway studies or frequency coordination.

DELIVERABLES:

Jacobs will provide one electronic PDF copy of each deliverable identified below via email (no hard copies will be provided). Native document copies will be provided with the final deliverables.

- Workshops:
 - Summary notes (simple bulleted text via email) for each meeting
- Master Plan:
 - Preliminary / Draft
 - Document Table of Contents
 - Draft Compiled Report for Review
 - Final:
 - Final copy of master plan document. The bound PDF will be provided with bookmarks for each major section.
- For project management:
 - Monthly invoice with written narrative.

SCHEDULE CONCEPT

Major milestones and planned activity are outlined below:

- Contracted / Notice to Proceed – By end of November 2024
- Project kickoff – December 2024
- Completion of Master Plan – No Later than July 31, 2025
- Contract Completion – No later than August 31, 2025 (to accommodate final invoicing)
- Amendments / Task Orders for Follow-on Work – TO BE DETERMINED

COMPENSATION

Jacobs hereby proposes this Work on a Time & Materials basis with a not-to-exceed amount of \$210,673. Refer to Exhibit B, Level of Effort Estimate. Jacobs' staff labor rates will be capped at \$295/hour. All other expenses will be billed at cost.

SUPPLEMENTS

- Exhibit B - Level of Effort Estimate

