



CITY OF VANCOUVER
WATER STATION 3 MASTER PLAN AND FINAL DESIGN SERVICES AGREEMENT
No. C-100959

This Services Agreement (hereinafter referred to as the "Agreement") is entered into by and between the City of Vancouver, Washington, a municipal corporation organized under the laws of the State of Washington, (hereinafter referred to as the "City") and Jacobs Engineering Group Inc., (hereinafter referred to as the "Contractor"). The City and Contractor may be collectively referred to herein as the "parties" or individually as a "party".

WHEREAS, the City desires to engage the Contractor to perform services as described in this Agreement; and

WHEREAS, the City advertised and issued a Request for Qualifications, numbered 7-22 (hereinafter referred to as the "solicitation") and after evaluation of the Contractor's responsive proposal, found the Contractor be capable of performing the required services; and

WHEREAS, the Contractor represents by entering into this Agreement that it is fully qualified to perform the services described herein in a competent and professional manner, and to the full satisfaction of the City.

NOW, THEREFORE, in consideration of the terms, conditions, covenants, and performance contained herein, or attached and incorporated and made a part hereof, the parties hereto agree as follows:

- 1. SCOPE OF WORK:** The Contractor agrees to provide the City all services and materials set forth below and in the scope of work identified in Attachment "A", and as further described in the City's solicitation, and the Contractor's responsive proposal to the City's solicitation, (collectively referred to herein as the "work") which are each incorporated herein by this reference, and made a part of this Agreement as if fully set forth herein.

Consulting services to develop the Water Station 3 Master Plan and Final Design.

All work must be authorized and approved by the City's Project Manager before any work can begin. The standard of care applicable to Contractor's services will be the care and degree of skill and diligence normally employed by professional engineers or consultants performing the same

or similar services at the time said services are performed. The Contractor shall actively seek collaborative input from City staff.

2. **COMPENSATION:** Payment to the Contractor for the work described in this Agreement shall not exceed \$513,254.00 USD.

This payment shall be maximum compensation for the work and for all labor, materials, supplies, equipment and incidentals necessary to complete the work as set forth herein, and it shall not be exceeded without the City's prior written authorization in the form of a negotiated and executed amendment.

Compensation is limited to the amount specified for each specific task order, unless amended in writing. Compensation may be amended, for documentable circumstances not reasonably foreseeable to either party at the time the task order is initiated, or for changes to the scope of work or deliverables requested by the City. All deliverables must adhere to the requirements set forth in this Agreement.

3. **PAYMENT FOR CONTRACTOR SERVICES:** The Contractor shall submit monthly invoices to City covering both professional fees and project expenses, if any, for fees and expenses from the previous month. Payments to Contractor shall be net thirty (30) days.

The City reserves the right to correct any invoices paid in error. The Contractor shall be paid according to the rates set forth below in Attachment "B", incorporated herein by this reference, and made a part of this Agreement as if fully set forth herein.

City and Contractor agree that any amount paid in error by City does not constitute a rate change in the amount of the contract. The City's contract/purchase order (PO) number given on the notice to proceed **must** be referenced on any invoice submitted for payment.

4. **TERM OF AGREEMENT:** The term of this Agreement shall commence on August 1, 2022 and continue until March 31, 2023. Unless directed otherwise by the City, Contractor shall perform the work in accordance with any schedules made a part of this Agreement.
5. **ORDER OF PRECEDENCE:** Where there is a conflict among or between any of these documents, the controlling documents shall be the first listed in the following sequence: Amendments to this Agreement; this Agreement; Contract Purchase Orders; the Contractor's responsive proposal to the City's solicitation, and the City's solicitation.
6. **RELATION OF PARTIES:** The Contractor, and its subcontractors, agents, employees, or other vendors contracted by the Contractor to provide services or other work for the purpose of meeting

the Contractor's obligations under this agreement (collectively referred to as "subcontractors"), are independent contractors performing professional services for the City and are not employees of the City. The Contractor and its subcontractors shall not, as a result of this Agreement, accrue leave, retirement, insurance, bonding or any other rights, privileges, or benefits afforded to City employees. The Contractor and its subcontractors shall not have the authority to bind City in any way except as may be specifically provided herein.

7. **SUBCONTRACTING:** The City does not permit subcontractors for the work performed under this Agreement. The Contractor shall not subcontract for the performance of any work under this Agreement without prior written permission of the City.
8. **E-VERIFY:** The Contractor shall enter into and register a Memorandum of Understanding with the Department of Homeland Security E-Verify program within sixty (60) days after execution of this Agreement. The Contractor shall ensure all Contractor employees and any subcontractors assigned to perform work under this Agreement are eligible to work in the United States. The Contractor shall provide verification of compliance upon the request of the City. Failure by the Contractor to comply with this subsection shall be considered a material breach.
9. **DELAYS AND EXTENSIONS OF TIME:** If the Contractor is delayed at any time in the progress of the work covered by this Agreement, by any causes beyond Contractor's control, the time for performance may be extended by such time as shall be mutually agreed upon by the Contractor and the City and shall be incorporated in a written amendment to this Agreement. Any request for an extension of time shall be made in writing to the City.
10. **OWNERSHIP OF RECORDS AND DOCUMENTS:** Any and all work product prepared by the Contractor in the course of performing this Contract shall immediately become the property of the City. In consideration of the compensation provided for by this Agreement, the Contractor hereby further assigns all copyright interests in such work product to the City. A copy may be retained by the Contractor. Previously owned intellectual property of Contractor, and any know-how, methodologies or processes used by the Contractor to provide the services or project deliverables under this Agreement shall remain property of the Contractor.

Reuse by the City of any such work product, not occurring as a part of this Contract, shall be without liability or legal exposure to Contractor.

11. **TERMINATION FOR PUBLIC CONVENIENCE:** The City, at its sole discretion, may terminate this contract for convenience at any time for any reason deemed appropriate. Termination is effective immediately upon notice of termination given by the City.

In the event this Agreement is terminated prior to the completion of work, the Contractor will only be paid for the portion of the work completed at the time of termination of the Agreement.

- 12. TERMINATION FOR DEFAULT:** If the Contractor defaults by failing to perform any of the obligations of the Agreement, including violating any law, regulation, rule or ordinance applicable to this Agreement, or becomes insolvent or is declared bankrupt or commits any act of bankruptcy or insolvency or makes an assignment for the benefit of creditors, the City may, by depositing written notice to the Contractor in the U.S. mail, postage prepaid, terminate the Agreement, and at the City's option, obtain performance of the work elsewhere.

If the Agreement is terminated for default, the Contractor shall not be entitled to receive any further payments under the Agreement until all work called for has been fully performed. Any extra cost or damage to the City resulting from such default(s) shall be deducted from any money due or coming due to the Contractor. The Contractor shall bear any extra expenses incurred by the City in completing the work, and all damage sustained, or which may be sustained by the City by reason of such default.

If a notice of termination for default has been issued and it is later determined for any reason that the Contractor was not in default, the rights and obligations of the parties shall be the same as if the notice of termination had been issued pursuant to the termination for public convenience paragraph herein.

- 13. OPPORTUNITY TO CURE:** The City at its sole discretion may in lieu of a termination allow the Contractor to cure the defect(s), by providing a "Notice to Cure" to Contractor setting forth the remedies sought by City and the deadline to accomplish the remedies. If the Contractor fails to remedy to the City's satisfaction the breach or default of any of the terms, covenants, or conditions of this Contract within the time stated time, the City shall have the right to terminate the Contract without any further obligation to the Contractor. Any such termination for default shall not in any way operate to preclude the City from also pursuing all available remedies against the Contractor and its sureties for said breach or default, including but not limited to termination of this Contract for convenience.

- 14. COMPLIANCE WITH THE LAW:** The Contractor agrees to comply with all relevant, Federal, State, and Municipal laws, rules, policies, regulations or ordinances in the performance of work under this Agreement.

- 15. CITY BUSINESS AND OCCUPATION LICENSE:** The Contractor will be required to obtain a business license when contracting with the City unless allowable exemptions apply. The Contractor shall contact the State of Washington Business License Service (BLS) at: <http://bls.dor.wa.gov/file.aspx>, or by phone at 800-451-7985, or go to www.bls.dor.wa.gov/cities/vancouver.aspx or www.cityofvancouver.us/businesslicense, to

determine whether a business license is required pursuant to the Vancouver Municipal Code (VMC) Chapter 5.04.

16. LIABILITY AND HOLD HARMLESS: The Contractor agrees to indemnify, defend, save and hold harmless the City, its officials, employees and agents from any and all liability, demands, claims, causes of action, suits or judgments, including costs, attorney fees and expenses incurred in connection therewith, of whatsoever kind or nature (including patent infringement or copyright claims) to the extent arising out of, or in connection with, or incident to, the negligent performance or willful misconduct pursuant to this Agreement. This indemnity and hold harmless shall include any claim made against the City by an employee of Contractor or subcontractor or agent even if Contractor is thus otherwise immune from liability pursuant to the workers' compensation statute, Title 51 Revised Code of Washington (RCW), except to the extent that such liability arises from the concurrent negligence of both the City and the Contractor, such costs, fees and expenses shall be shared between the City and the Contractor in proportion to their relative degrees of negligence. The Contractor specifically acknowledges the provisions contained herein have been mutually negotiated by the parties and it is the intent of the parties that the Contractor provide the broadest scope of indemnity permitted by RCW 4.24.115. The Contractor is an independent contractor and responsible for the safety of its employees.

17. INSURANCE: The Contractor shall obtain and keep in force during the entire term of this agreement, liability insurance against any and all claims for damages to person or property which may arise out of the performance of this Contract whether such work shall be by the Contractor, subcontractor or anyone directly or indirectly employed by either the Contractor or a subcontractor.

All liability insurance required herein shall be under a Comprehensive or Commercial General Liability and business policies.

COVERAGE	LIMITS OF LIABILITY
I. Commercial General Liability:	
Policy shall include Bodily Injury, Property Damage, Personal Injury and Broad Form Contractual Liability	
Each Occurrence	\$1,000,000
General Aggregate Per Occurrence	\$2,000,000
Products & Completed Operations Aggregate	\$2,000,000
Personal and Advertising Injury	\$1,000,000
Blanket Contractual Liability	\$1,000,000
II. Commercial Automobile Liability	

Policy shall include Bodily Injury and Property Damage, for any owned, Hired, and/or Non-owned vehicles used in the operation, installation and maintenance of facilities under this agreement. Combined Single Limit	\$1,000,000
III. Workers' Compensation (applicable to the State of Washington)	
Per Occurrence	
Employer's Liability	\$1,000,000
Disease Each Employee	\$1,000,000
Disease Policy Limit	\$1,000,000
Each Claim	\$1,000,000
Annual Aggregate	\$1,000,000

In addition to the coverage and limits listed above the Contractor's insurance must all contain the following:

- a. City Listed as an Additional Insured. The City of Vancouver, its Agents, Representatives, Officers, Directors, Elected and Appointed Officials, and Employees must be named as an additional insured. The required Additional Insured endorsements shall be at least as broad as ISO CG 20 10 11 85, or its equivalent CG 20 10 07 04 and CG 20 37 07 04 must be included with the Certificate of Insurance.
- b. Either the Commercial General Liability or the Workers' Compensation policy must be endorsed to include "Washington Stop Gap" insurance. The limits and aggregates referenced must apply to the Stop Gap coverage as well and must be indicated on the certificate.
- c. Employment Security. The Contractor shall comply with all employment security laws of the State in which services are provided and shall timely make all required payments in connection therewith.
- d. The City of Vancouver shall be listed on the Certificate as the Certificate Holder.
- e. Coverage Trigger: The insurance must be written on an "occurrence" basis. This must be indicated on the Certificate.

Contractor shall provide evidence of all insurance required, at the City's request, by submitting an insurance certificate to the City on a standard "ACORD" or comparable form.

All policies shall be issued by an insurance company licensed to do business in the State of Washington. The City of Vancouver may inspect all policies and copies shall be provided to the City upon request.

18. NOTICES: All notices which are given or required to be given pursuant to this Agreement shall be hand delivered, mailed postage paid, or sent by electronic mail as follows:

For the City:

Anna Vogel

City of Vancouver

415 W 6th Street

P O Box 1995

Vancouver WA 98668-1995

Email: anna.vogel@cityofvancouver.us

For the Contractor:

Brad Phelps

Jacobs Engineering Group Inc.

2020 SW 4th Ave, Suite 300

Portland, OR 97201

Email: brad.phelps@jacobs.com

Either party may change the designated contact or any information listed above by giving advance notice in writing to the other party.

19. AMENDMENTS: All changes to this Agreement, including changes to the scope of work and compensation sections, must be made by written amendment and signed by all parties to this Agreement.

20. SCOPE OF AGREEMENT: This Agreement incorporates all the agreements, covenants and understanding between the parties hereto and are merged into this written Agreement. No prior agreement or prior understanding, verbal or otherwise, of the parties or their agents shall be valid or enforceable unless set forth in this Agreement.

21. RATIFICATION: Acts taken pursuant to this Agreement but prior to its effective date are hereby ratified and confirmed.

22. GOVERNING LAW/VENUE: This Agreement shall be deemed to have been executed and delivered within the State of Washington, and the rights and obligations of the parties hereunder shall be construed and enforced in accordance with, and governed by, the laws of the State of Washington without regard to the principles of conflict of laws. Any action or suit brought in connection with this Agreement shall be brought in the Superior Court of Clark County, Washington.

23. COOPERATIVE PURCHASING: The Washington State Inter-local Cooperation Act, Ch. 39.34 RCW, authorizes public agencies to cooperatively purchase goods and services if all parties agree. By having executed this Agreement, the Contractor agrees that other public agencies may purchase goods and services under this solicitation or contract at their own cost and without the City incurring any financial or legal liability for such purchases. The City agrees to allow other public agencies to purchase goods and services under this solicitation or contract, provided that the City is not held financially or legally liable for purchases and that any public agency

purchasing under such solicitation or contract file a copy of this invitation and such contract in accordance with RCW 39.34.040.

- 24. PUBLIC DISCLOSURE COMPLIANCE:** The parties acknowledge that the City is an “agency” within the meaning of the Washington Public Records Act, Chapter 42.56 RCW, and that materials submitted by the Contractor to the City become public record. Such records may be subject to public disclosure, in whole or part and may be required to be released by the City in the event of a request for disclosure. In the event the City receives a public record request for any data or deliverable that is provided to the City and that is licensed from the Contractor, the City shall notify the Contractor of such request and withhold disclosure of such information for not less than five (5) business days, to permit the Contractor to seek judicial protection of such information, provided that the Contractor shall be responsible for attorney fees and costs in such action and shall save and hold harmless the City from any costs, attorney fees or penalty assessment under Chapter 42.17 RCW for withholding or delaying public disclosure of such information.
- 25. DEBARMENT:** The Contractor certifies that that it is not presently debarred, suspended, proposed for debarment, and declared ineligible or voluntarily excluded from covered transactions by any Federal, State or local department or agency.
- 26. NONDISCRIMINATION:** The City of Vancouver, WA is an equal opportunity employer. In the performance of this Agreement, the Contractor will not discriminate against any employee or applicant for employment on the grounds of race, creed, color, national origin, sex, sexual orientation, marital status, age or the presence of any sensory, mental or physical handicap.

The undersigned, as the authorized representatives of the City and Contractor respectively, agree to all of the terms and conditions contained in this Agreement, as of the dates set forth below.

CITY OF VANCOUVER

A municipal corporation

CONTRACTOR:

Jacobs Engineering Group Inc.

Eric Holmes, City Manager

Signature

Date

Printed Name /Title

Attest:

Date

Natasha Ramras, City Clerk

Approved as to form:

Jonathan Young, City Attorney

ATTACHMENT “A”

Water Station No. 3 Master Plan

Concept Design Engineering Services

Reservoir & Well Replacement Project

Scope of Work, Fee, and Schedule

City of Vancouver, WA

June 2022

JACOBS[®]

EXHIBIT A

Scope of Work

Introduction

The City of Vancouver has determined the need to replace aging facilities and components at the Water Station 3 (WS3) site to ensure seismic resiliency, compliance with regulatory requirements, and system reliability to allow the site to continue to supply safe, clean, drinking water. The new facilities and site upgrades are to be consistent with the City's Climate Action Plan for reducing greenhouse gas emissions and becoming carbon net neutral. This scope of work is the start to the overall project definition which is to prepare a site master plan and concept design.

This Water Station is located on a 2.3-acre parcel and has been a municipal water supply facility since 1944. The existing site has a 1.25MG partially buried concrete reservoir, a 0.25MG elevated tank, three groundwater wells, a booster pump station with chlorine and fluoride treatment. The three wells have a combined capacity of 6,175 gpm. Water is boosted from the ground level reservoir to provide water to Vancouver High and Lincoln High pressure zones, serving over 28,000 water customers.

The WS3 site is surrounded on three sides by residential development, and the east side by a Washington State Department of Transportation Maintenance Facility.

In addition to the technical details of the project, scheduling of the project, identification of land use planning and other permitting requirements are to be identified to understand and define the project elements and schedule.

The initial intent of the project is to:

- Replace the existing 1.25MG Concrete Reservoir (potentially eliminate)
- Replace the Booster Pump Station attached to the Reservoir
- Replace the 0.25MG Elevated tower
- Address storage deficit for the Vancouver High Pressure Zone that is identified in the City's Comprehensive Water System Plan.
- Replace Wells 1 and 2
- Replace the Chlorine gas system with Onsite Hypochlorite Generation
- Replace the existing fluoride dosing system
- Provide additional support facilities for operators (restroom, sampling stations, testing and storage areas)
- Upgrade the Site Electrical System where needed
- Upgrade the Instrumentation and SCADA System
- Provide Site Security and Access of the site
- Possible addition of PFAS treatment
- Replace the 45th Street (Lincoln High) Booster Pump Station with a new pump station on the WS3 site
- Ensure climate resiliency and climate impact reductions are identified

- Protect the drinking water, water resources, native trees, and all other elements of the environment
- Be a good neighbor and provide equity in service to the community

As a part of the planning process, the Master Plan development will consider increasing water storage capacity at the site, and whether the need for continuing with a separate ground level reservoir/elevated tank and booster pump station is necessary or desired.

The goals of the project are to complete field investigations and develop a site master plan that will be used for the basis of the final design. The final design of the facilities will not be conducted under this scope of work.

As a part of the project, multiple workshops will be conducted to discuss and determine the alternatives and options of the following design elements to be addressed in the Master Plan:

- Evaluate the water storage needs for meeting current and future storage requirements in the Vancouver High Pressure Zone
- Evaluate the need for ground level water storage and associated booster pump station as a part of the future facilities
- Provide recommendations to replace the elevated steel tower and ground level reservoir, providing a technical memorandum of pros/cons to assist in making a decision on a path forward
- Utilizing the City's on-call hydraulic modeling firm, the City will contract directly with them to conduct the analysis of the system hydraulics of the Vancouver High Pressure Zone to fully utilize the water rights of WS3 into the system, increasing its use as a supply source, and to find an optimal balance between WS 3 and WS 1 for pumping and storage. Jacobs will work with the firm to identify necessary hydraulics analysis to be conducted.
- Determine pipe configurations, routing, and disposal for Overflow/Drain discharges of the facilities
- Conduct geotechnical field investigations to determine adequacy for foundations of anticipated structures
- Conduct geotechnical field investigations to determine the potential for onsite infiltration facilities to allow for overflow/drainage of hydraulic structures onsite.
- Provide a conceptual stormwater design for the site
- Determine appropriate locations of 2 new replacement wells/pump stations
- Conduct a feasibility study of replacing the existing 45th Street Booster Pump Station with a new pump station on the WS3 site to address deficiencies identified in the City's Comprehensive Water System Plan in capacity, redundancy, and for reliability. If determined to be feasible, develop a preliminary pump station layout, including sizing and pipeline routing. Include a hydraulic analysis utilizing the City's on-call hydraulic firm (direct hired by City) for the system curve to size the pumps and provide pump curves.
- Obtain work completed by another consultant to address potential layout of a PFAS treatment system including pipes, pumps, and instrumentation for the treatment system.
- Develop a plan for the replacement of the existing Chlorine and Fluoride treatment systems
- Evaluate the site electrical feed and determine any upgrades that will improve reliability and energy efficiency

- Upgrades necessary and desired to the SCADA control system, including communications and control panel(s), and instrumentation
- Evaluate the project with application for Envision certification of the new facilities with sustainable building practices in mind. Pursue the Envision framework to ensure climate resiliency and reductions to climate impacts are met by the project.
- The master plan shall also consider ancillary facilities to further support the operations staff including lab sinks, sampling stations, site lighting, and an employee restroom
- The work shall include the feasibility of including on-site solar power generation system
- Upgrades to the site shall include street frontage improvements for driveway access, sidewalk, fencing, and landscaping as needed.
- In order to prepare for the planning process, the preliminary plans shall address major modifications to the existing Conditional Use Permit (Type II) with a preliminary site plan which will be submitted with a pre-application to the City Community Development Department once this scope of work has been completed. Note, we will be seeking a variance request for the height of the water tower over 35-ft in the final design process.
- City, State, and Federal permitting processes needed for construction approval shall be identified in the preliminary report for handling with the final design.

It is anticipated that the City will perform and provide the site survey to include boundary definitions, identifying existing pipe locations and verification of pipeline depths, boundary survey, existing features, and a topographic surface for the property.

To deliver these preliminary design/Master Plan engineering services for this project, we propose the following tasks be performed to produce the work:

- **Workshops 1 / 2 / 3**
- **Geotechnical Field Investigations and Report**
- **Field investigation to determine potential upgrades to remaining Well 3 facilities (electrical, SCADA controls and instrumentation, structural, etc.)**
- **Water Storage Vessels Size, and Configuration**
- **Hydraulics Analysis of Vancouver High Pressure Zone utilizing the City's on-call hydraulic modeler.**
- **Hydraulic Analysis of Lincoln High Pressure Zone utilizing the City's on-call hydraulic modeler.**
- **Buildings / Site Concept Planning**
- **Tree inventory**
- **Analysis for sustainable building features and site development**
- **Solar energy and siting analysis**
- **Cost Estimate**
- **Master Plan Report**
- **Project Management**

Jacobs will work collaboratively with City staff, and their retained hydraulic modeler to define the project infrastructure using a process of multiple design meetings/discussions that will culminate in the Master Plan design document.

We have included in our work plan, in addition to these workshops, one team meeting during the orientation task to align and charter the project team members.

The following is an outline of the three proposed Workshops that will be conducted with the city throughout the planning effort. Each meeting/workshop would be proposed for ½ day:

Workshop	Materials Provided	Decisions Desired
Kickoff & Workshop #1 – Water Storage Structure Options/Solar Energy Concepts/Well Design Considerations/Initial Site Layout / Treatment Systems		
Storage	<ul style="list-style-type: none"> ✓ Water Storage Vessel Configuration/Types/Sizes ✓ Impact of Ground Level Storage Elimination ✓ Maintaining Chlorine Contact Time 	Reservoir Storage Configuration
Solar Energy Concepts & Climate Action Plan (CAP)	<ul style="list-style-type: none"> ✓ Feasibility Study & Analysis 	Include Solar Generation into the facilities Planning for Envision and site development to meet the City's CAP.
Well Design	<ul style="list-style-type: none"> ✓ Well Design Configurations and Options and Scheduling of Well Drilling ✓ Well Construction 	Well Construction and possible construction scheduling considerations
Initial Site Layout	<ul style="list-style-type: none"> ✓ Initial Discussion of facilities and potential locations of facilities ✓ Infiltration / Discharge 	Considerations for system discharges
Treatment Systems	<ul style="list-style-type: none"> ✓ PFAS Treatment System Requirements and Concepts ✓ OnSite Generation ✓ Flouride systems 	Needed Treatment Systems, sizing, location, and considerations

Workshop	Materials Provided	Decisions Desired
Equipment Pre-Purchase	✓ Owner Furnished Equipment and Materials (OSG/other ?)	What Elements will be OFE
Geotechnical Considerations	✓ Results of Geotechnical Borings – Limitations or Constraints to planned infrastructure	Definition of potential constraints
Building Configurations and Options	<ul style="list-style-type: none"> ✓ Combined Building Option of Well/Consolidated Facilities' ✓ Separate Well Buildings and Treatment/Booster Building 	
Workshop #2 – Hydraulics / Site Layout / Buildings / Treatment Systems		
Hydraulics Review	✓ On-Site and Off-Site System Hydraulics	Confirmation of System Hydraulics Information Balance the site pumping and storage with that of Water Station 1. Confirm pipe sizing for the new Lincoln High BPS
Continued Site Layout	<ul style="list-style-type: none"> ✓ Site Constraints and Alternatives ✓ Stormwater Control ✓ Infiltration Systems ✓ Piping Layouts ✓ Landscape Restoration/Protection 	Concept Site Layout
P&ID	✓ Facility P&ID	Process Review
Architecture	✓ Facility Sketches	Architectural Approach Resourcing materials and responsible building features for gaining Envision certification.
Booster Pump Station / Well Stations	<ul style="list-style-type: none"> ✓ Pipe System Configurations ✓ Plan view layouts of pump station concepts ✓ Equipment Discussion ✓ Constant Speed vs. VFD 	Booster Pump Station Configuration
Electrical	<ul style="list-style-type: none"> ✓ Electrical Loads and One-Line Diagram ✓ Onsite Electrical Distribution 	Electrical Equipment and Electrical Distribution
Generator	✓ Generator Sizing	Generator Sizing and Fuel Needs
SCADA / I&C /Security Systems	<ul style="list-style-type: none"> ✓ Review of I&C Approach ✓ Review Security Systems Approach 	I&C and Security Approach
Workshop #3 – Preliminary Design and Construction Sequencing		
Overall Concept Plan review	✓ Pre-Finalization of Concept Plan	
Construction / Design Schedule and Sequencing	<ul style="list-style-type: none"> ✓ Project Schedule ✓ Initial Construction Sequencing Options 	Identify potential construction packages for phased approach, include cost of each.

Work Plan

Task 1—Preliminary Design

1.1 Workshops

The Jacobs team will lead three workshop meetings with the city staff to define the project scope, layout, and schedule that will culminate in a site Master Plan document. The workshops are identified above with further definition below.

Workshop 1

The purpose of this first workshop is twofold. The first is to provide an opportunity for members of the Jacobs team to conduct a site tour of WS3, followed by a workshop to discuss the project, and also present initial/preliminary findings. This is an opportunity for the key leads of the consultant staff to meet the city staff members that will be involved in the project and to develop coordination and communication protocols and to prepare for the second workshop. Key milestones, deliverables, and schedule will also be discussed as well as critical project issues that are important to this project completion. This meeting will be held at the City's Engineering building, following a tour the WS3 site.

Workshop 2

The second workshop will utilize information collected during the site tour and first workshop to present further concept development of the project. The Jacobs team will make presentation on all the elements of the project to provide a basis for continued discussion with the city staff in collaboratively making decisions on the changes desired of the site. This meeting will be held at the City's Engineering building and is anticipated to be a ½ day workshop held both virtually and with key staff members of the consultant team present in Vancouver.

Workshop 3

The third and last workshop will be the culmination of information of the work that was discussed in Workshop 2 and revised to be presented in this workshop. The intent is to agree on the proposed Master Plan that the implementation plan would use to move the project forward. This workshop would also include a proposed schedule for future actions and begin to develop a sequencing of construction that would be refined in future project development phases. This meeting will be held at the City's Engineering building and is anticipated to be a ½ day workshop.

1.2 Geotechnical Field Investigations and Reports

Jacobs will review the existing subsurface information available from past geotechnical explorations at the Vancouver Water Station 3 site and supplement the existing information with a focused geotechnical exploration and laboratory testing program. Based on previous geotechnical explorations, it is expected that the seismic site class will be Site Class D and therefore it is assumed that a site-specific seismic analysis will not be required. As such, a code-based approach will be used to develop a seismic response spectra and seismic design parameters for the work.

Geotechnical Field Exploration and Laboratory Testing

The focused geotechnical exploration at the water station will consist of advancing one deep geotechnical boring and up to four shallow borings. The deep boring will be advanced within the footprint of the proposed elevated storage vessel. It will be advanced to a depth of approximately 2 times the anticipated width of a reinforced concrete pad foundation that could be used for support of the structure. Based on work at Water Station 1, the deep boring will be advanced to approximately 120 feet below grade. Four shallow borings will be completed to facilitate infiltration

testing following Clark County Stormwater Manual procedures for the auger borehole test procedure. One would be placed on the southern side of the existing ground level reservoir, and the other to the north of the existing elevated tank.

The remaining shallow boings will be advanced near proposed minor structures or along proposed pipeline alignments. Borings will supplement existing geotechnical explorations and be used for design of reservoir foundations.

Laboratory testing to determine index and strength properties of the soil encountered in the borings will be completed on representative soil samples collected during the geotechnical exploration.

Geotechnical Analyses

The primary tasks associated with the geotechnical analyses will be evaluation of foundation conditions, development of foundation recommendations, development of code-based seismic ground response spectral accelerations, and evaluation of lateral earth pressures. Geotechnical analyses for the potential storage vessels will include assessment of a thickened reinforced concrete foundation mass and deep foundation alternatives for support of vertical loads and resistance to overturning moments under seismic loading. Relative costs for each of these alternatives will be considered and preliminary design recommendations for size, type, depth, and estimated axial, lateral, and uplift capacity will be developed. The preliminary design will be further developed during final design when structural load requirements are further identified.

Geotechnical Task Assumptions:

- Required permits and right of entry will be obtained by the City of Vancouver.
- It is assumed that the City of Vancouver will provide private utility information for the site and assist with the utility locating task.
- The work will not include installation of groundwater monitoring wells since nearby investigations have shown the groundwater level to be very deep at the site.
- Soils encountered during the field exploration will be free of environmental contamination requiring special monitoring, handling, testing, or disposal.
- Jacobs shall provide full-time observation and logging of borings including soil classifications.
- Cuttings from borings not used for laboratory testing will be removed from the site.
- The City of Vancouver will provide an onsite water source for infiltration testing water.
- There do not appear to be steep slopes near the water station, therefore slope stability analysis will not be required. A code-based seismic hazard evaluation will be completed for the project. This approach is generally allowed for water reservoirs in Washington provided the site is not susceptible to seismically induced liquefaction. The validity of this approach will need to be confirmed by the local building department to ensure that a site-specific seismic analysis will not be required.

Deliverable:

Geotechnical Data and Recommendations Report.

A geotechnical data report (GDR) and a geotechnical recommendations report (GRR) will be developed for the project. Results of the code-based seismic design evaluation will be included in the GRR

Draft reports will be prepared and submitted electronically to the City of Vancouver for review. Consolidated comments from the City's review will be incorporated into the final Master Plan report.

1.3 Storage Vessel(s) Size and Configuration

The site shall be evaluated for eliminating the ground level storage. The existing ground level reservoir and elevated tank has the potential to be combined into a single elevated storage vessel configured to meet the storage deficiency in the Vancouver High Pressure Zone.

A design criteria technical memorandum for the recommended tank size(s) and configuration will be prepared to define the desired tank volume(s) and structural design. Concept review of optional layouts of stored water and their configurations will be discussed with the city in developing the planned improvements. Storage needs will be based on the analysis of the adopted Comprehensive Water System Plan (CWSP) developed by others but updated with infrastructure improvements that have been completed since adoption. An analysis of the storage components will identify the capacity of each; dead, fire/standby, equalizing, and operational to show the current deficiency identified in the CWSP of 0.4 MG above 20-psi has been addressed.

A preliminary layout and location of the new structure or structures will be provided with preliminary plan and section drawings.

Deliverable:

Technical memorandum and concept drawings indicating configuration options and design criteria for discussion in the workshop. The technical memorandum shall also address the criteria for hydraulic analysis to balance the proposed storage and pumping configuration at WS3 with that of WS1. Final configuration will be provided in the Master Plan documentation.

1.4 Hydraulics Analysis of Vancouver High Pressure Zone

A hydraulics review of the Vancouver High Pressure Zone and Lincoln High Pressure Zone will be conducted. Then intent of the analysis is to better understand the ability of this zone to rely more heavily on the supply from WS3 to maximize Water Rights and provide supply to the zone in lieu of WS1 being the primary supply source for the zone and what facilities are needed to address this change in operations. The analysis shall take into account the storage turn-over and pump usage for both sites. The city will provide the necessary operational information to understand the flows and pressures observed of the existing system to conduct the analysis and will provide the hydraulics model currently held for the system.

In addition, the hydraulic analysis will determine the pipeline sizing for a new transmission main from the WS3 site to the Lincoln High Pressure Zone for supplying water as needed to meet seasonal domestic flows and fire flows in the Lincoln High Pressure Zone.

The City's distribution system is a complex hydraulic network with PRV's and pump stations pushing water between various pressure zones. After the initial hydraulic analysis, the overall distribution system shall be looked at as a whole for analyzing the pumping and storage scenarios in the Vancouver High Pressure Zone with the proposed final configuration.

Hydraulic Analysis Conducted by others

A technical memorandum will be prepared defining the parameters and a basic scope of work for utilizing the City's on-call hydraulic modeling contractor to perform hydraulic model runs which will provide the data needed for facility sizing and operational needs.

Deliverable:

Technical memorandum of the site hydraulics investigation and future system configuration to implement WS3 as a more prominent supply source in the Vancouver High Pressure Zone and Lincoln High Pressure Zone. Include pump sizing with a hydraulic analysis that addresses the pumping deficiency as identified in the CWSP for the Lincoln High Pressure Zone.

1.5 Buildings/Site Preliminary Design

Two replacement wells are proposed for this site, combined with conversion of chlorine treatment to On-Site Sodium Hypochlorite generation from gaseous chlorine, inclusion of fluoride treatment and PFAS treatment. PFAS treatment may not be necessary at this time, but the city would like to preserve space for the addition of PFAS treatment in the future, if not implemented under this project. In addition, the relocation of the 45th Street pump station onto the WS3 site is desired.

The following will be addressed in the Master Plan document through memorandums of design, and drawings.

Building Configurations: It is anticipated that the project will have possibly three buildings. One for each of the two new wells and one for the consolidation of the relocated 45th Street Booster pump station, electrical distribution, and treatment systems. A potential to combine one of the well houses with the booster pump station/treatment building will be explored in the analysis. It is assumed that the desired materials of the buildings will be similar to the other water stations, which is Cement Mortar Units with standing seam metal roofs.

Sustainable Infrastructure: The building materials and structure shall be analyzed for meeting the City's CAP for climate resiliency and reducing climate impacts. The pre-Assessment Process of the ISI/Envision system is commonly used for assessing sustainability, resiliency, and equity in civil infrastructure projects. Incorporating this process into the project will facilitate the identification and evaluation of design changes that could be improved. Its framework includes 64 sustainability and resilience factors to provide for quality of life, leadership, resource allocation, natural world, climate strategies and resiliency. The proposed new buildings will be analyzed within the Envision framework to seek the desired Envision certification with the final design.

Well Siting: The intent of this project is to replace two existing wells with new wells on the property. As the Comprehensive Water System planning efforts conducted a Wellhead Protection Program identifying risks and vulnerabilities, no additional potential contaminant source inventory work is necessary for these replacement wells. In addition, no additional effort for water rights is anticipated for these replace in kind wells on the property. The consultant team will work with the city in determining appropriate locations for the well sites and identify project constraints. Water Rights shall be evaluated for process to transfer the existing to the new wells and permitting requirements.

Site Civil Improvements: For the site/civil layout of the facilities, we will develop a set of conceptual site civil plans addressing parking, grading, drainage (ground surface and tank), aesthetic treatment, onsite piping and valving, offsite drain line piping, street frontage improvements, and lighting. Distribution system pipeline layouts for supply, discharge, drainage and overflow will be shown. Initial stormwater control will be addressed as well. Consideration shall be given for sustainable infrastructure within the Envision framework for all site improvements.

45th Street Pump Station Relocation: An analysis of the project needs for replacing the 45th Street Booster Pump Station to WS3 will be provided. This will include the evaluation of necessary additional piping that will be needed for a supply pipeline from WS3 to the closed loop Lincoln Heights zone. It's anticipated the pump station will be replaced and the new pump station shall be configured and sized to meet pumping capacity deficiencies as identified in the CWSP. Develop a conceptual layout for the new booster pump station.

Stormwater and Erosion Control: A preliminary review of the stormwater and erosion control systems needed will be documented. It is not anticipated that a full stormwater analysis will be performed at this stage of the project definition, but rather engineering judgement based on the experiences of designing WS1/WS5 will be used. The development of this plan will provide conceptual planning guidance for stormwater control.

Electrical System Improvements: During the tour of the site prior to Workshop 1, a review of the existing electrical supply will be conducted and a recommended modification to incorporate a new backup generator will be provided in Workshop 2. Acceptable sound levels will be reviewed with regard to noise allowances and any sound suppression systems will be identified. The team will also review if any power constraints from the power utility may restrict uses desired on the site. An electrical one-line diagram of the on-site electrical systems will be provided as a part of the work effort.

SCADA and Instrumentation Systems: A process and instrumentation diagram (P&ID) will be provided to define the electrical control systems of the project for configuration of the entire site with a new control system. In addition, defining the SCADA system for required monitoring and control systems will be identified to coordinate with the City's existing control system. The SCADA communications system is expected to be upgraded to fiber optic based using an ISP.

Security System Improvements: For the site, we will develop a security strategy (fencing and camera's) that provides similar security systems as located at WS1/WS5.

Landscaping Concepts: In coordination with the site/civil activities, the consultant will develop a conceptual design for a low maintenance landscaping development. City survey will tag trees larger than 4" in diameter. The Master Plan shall include a tree inventory to determine existing tree units and siting analysis to avoid native species where possible. Landscaping development shall be consistent with the City's CAP.

Clean Energy Analysis: As the City moves towards a carbon net neutral goal, identify for the site for clean energy alternatives that will assist in meeting that goal. Consultant will develop a feasibility analysis of the ability to generate power from the addition of solar panels at the WS3 site. A report will be prepared to identify the ability of the site to generate power with available surface areas of the new facilities.

Public Outreach: Identify stakeholders and consider early stakeholder involvement. Assist the City with a public outreach plan to be implemented during the final design. Develop conceptual graphics to assist City staff with Council Workshops and neighborhood communications.

Permitting: Identify permitting processes through the State and Local government as needed for the project, especially those involving Water Rights and the replacement of Wells 2 and 3. Assist City staff with conceptual plans to be submitted for a pre-application conference.

Deliverables:

- Presentation of options in Workshops 1 and 2 for city collaboration and discussion of design elements
- Workshop minutes with discussion items and resulting decisions shall be provided (within the same week) following each workshop.
- Technical memorandum and drawings identifying the desired and required design criteria, including conceptual drawings for the booster pump station.
- Finalization of memorandums and drawings for Workshop 3 and incorporation into the Master Plan.
- The Master Plans will include a Public Outreach Plan to identify stakeholders for future communications.
- The Master Plan will include a list of permitting agencies and permits that may be necessary to facilitate the final design and construction.

Assumptions:

- City will provide the base map for the site layout
- City will supply raw pumping and water-level data from SCADA system in Excel, parameters to be defined by Jacobs.
- City will provide documents describing well rehabilitation & performance history
- City will provide limitations of known siting conditions

1.6 Cost Estimate

A Jacobs cost estimator will prepare and submit to the city a budgetary construction cost estimate for the project as defined in the Master Plan document once the project has been defined through the workshops and development of design criteria and drawings. Costs shall be provided for each separate construction package as identified in Workshop 3. The accuracy and confidence level of the estimate will be conducted to a Level 5 as defined by the American Association of Cost Estimators (AACE).

Deliverable:

A detailed Engineer's Opinion of Probable Construction Cost (OPCC)

1.7 Master Plan Report

The final product of this preliminary design will be a compendium of the individual technical memorandums addressing the thoughts of the collaborative design process between the City and Jacobs staff. The preliminary design will include drawings to convey the concepts developed under this scope of work and the decisions made. It will also include discussions for a phased construction approach, stakeholder involvement and public outreach, potential permitting requirements, addressing the City's Climate Action Plan and the Envision certification process. The preliminary engineering design shall be in accordance with the 2020 Water System Design Manual (DOH Pub 331-123) by the Washington State Department of Health. This engineering report shall be prepared with the intent that it will be included in the final Project Report for Washington State Department of Health (WDOH) under WAC 249-290-110 to be submitted by the City for construction approval.

The preliminary design report will be provided to the city as a draft report, and then finalized following City comment and review of the document. The draft report will be provided in electronic Word

format. An electronic copy in pdf format will be provided at the draft and final report completion stages.

All drawings will be provided in electronic format to the city in both CAD and pdf format. Anticipated Drawings to be included in the report are:

General Sheets

- Location Map/Vicinity
- Index to Drawings / Hydraulic Profile
- Existing Conditions and Tree Inventory Plan

Site Civil

- Overall Site Plan w/ proposed Landscaping/Piping/Electrical/Street Frontages
- Construction Sequence Plan Phase 1
- Construction Sequence Plan Phase 2
- Construction Sequence Plan Phase 3

Water Storage Vessels

- Structural/Mech Foundation Plan
- Piping Plan

Consolidate Building and Well House Mechanical

- Mech Plan (Consolidated Building)
- Mech Plan (Well House)

Electrical

- Overall Site Electrical Plan (on Civil Plan
- Site One Line Diagram

Instrumentation and Control

- P&ID Overall Site
- Overall Security Plan

Buildings Design (Consolidated Building & Separate Well House)

- Architectural Elevations 1
- Architectural Elevations 2
- Floor Plan 1
- Floor Plan 2

Task 2—Project Management

Overall project management of the consultant team will be the responsibility of Jacobs which includes coordinating and communicating to ensure the project team is meeting scope, schedule, and budget. The project manager will be supported by a multi-person team including an overall quality assurance manager, and support staff.

Project management will be ongoing throughout the duration of the project as we work closely with the city to ensure that the project meets schedule, budget, and technical requirements. Frequent communications, including prearranged specific meetings, design workshops, telephone conversations,

and intermittent meetings will occur with City staff as the project proceeds. The project manager will also ensure that your design and operational philosophies are incorporated into the project and that the project proceeds as planned.

The consultant will meet with the city on a bi-weekly basis to discuss the status of the project and maintain meeting minutes to provide to the City in electronic format after each project meeting.

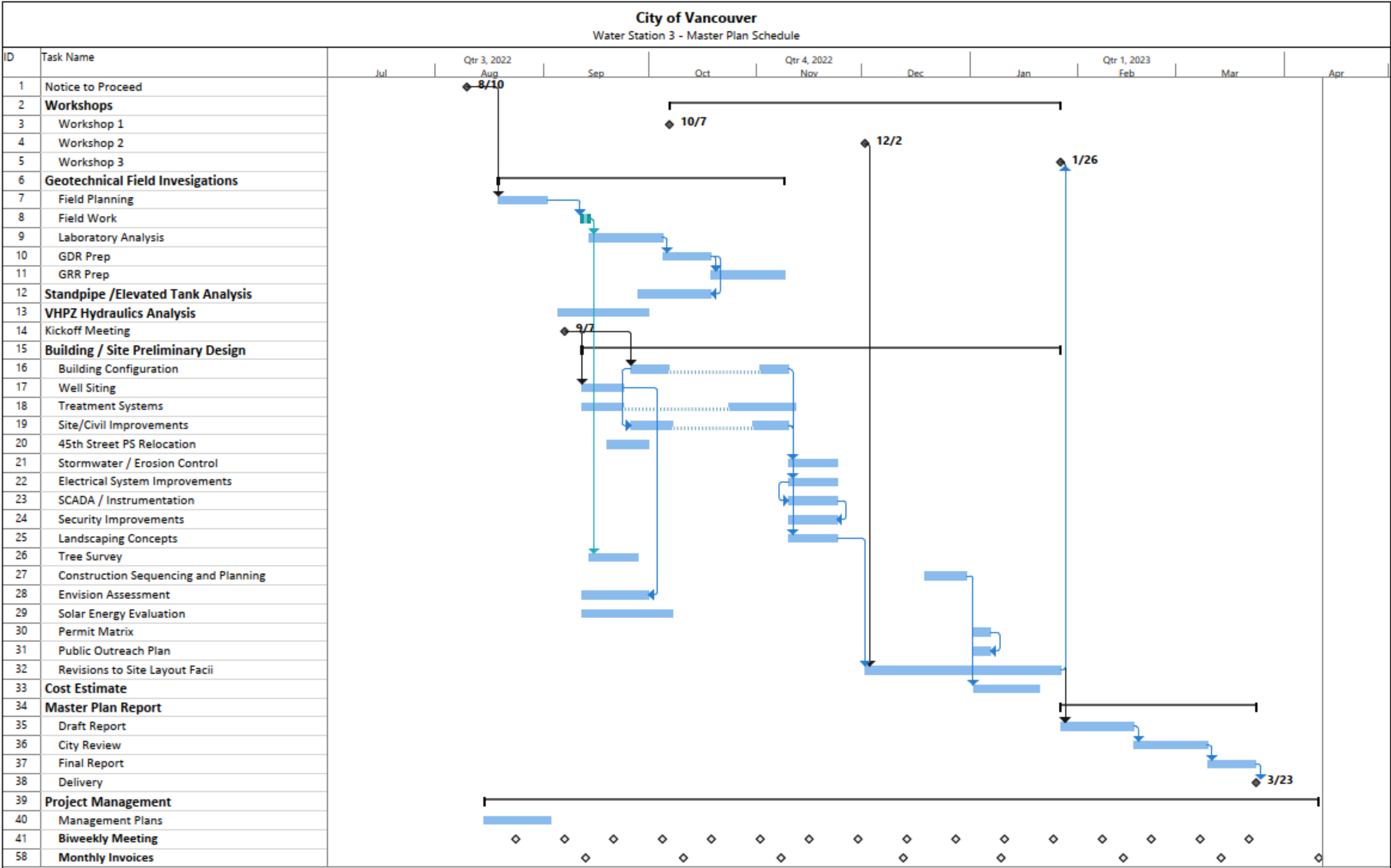
To initiate communications and guide all team members, a series of guiding plans will be created, and will include:

- Quality management plan
- Change Management Plan
- Health and safety plan (H&SP)

Ongoing monthly status reports will be provided by the consultant for the consultant team's work efforts and schedule maintenance. These monthly updates will provide a summary of the progress completed in the preceding month and identify unresolved or changed issues that need to be addressed.

Project Schedule

The schedule for delivering the project is detailed in project schedule (Exhibit B). This schedule indicates proposed time for the workshops, technical memorandum delivery and review, and finalization of the Master Plan document.



ATTACHMENT “B”

Fee Proposal

Basis for Compensation

The basis of compensation for this task order will be based on the current on-call contract services with the City of Vancouver. The engineer’s fee estimate for this task order is presented in Table 1 below.

Table 1
City of Vancouver
Water Station 3 Master Plan
 Engineering Services Fee Estimate
 Fee Breakdown by Task

Task No.	Task Identification	Jacobs Labor	Expenses	OSS	Task Total
01	Workshops				
	Summary of Labor Dollars (Task 1)	\$ 57,366	\$ 1,500	\$ 11,636	\$ 70,502
	Sum of Hours (Task 1)	244			
02	Geotechnical Field Investigations				
	Summary of Labor Dollars (Task 2)	\$ 49,327	\$ 1,750	\$ 22,575	\$ 73,652
	Sum of Hours (Task 2)	313			
03	Standpipe/Elevated Tank Analysis				
	Summary of Labor Dollars (Task 3)	\$ 21,448	\$ -	\$ -	\$ 21,448
	Sum of Hours (Task 3)	96			
04	VHPZ Hydraulic Analysis				
	Summary of Labor Dollars (Task 4)	\$ 12,804	\$ -	\$ -	\$ 12,804
	Sum of Hours (Task 4)	44			
05	Building / Site Preliminary Design				
	Summary of Labor Dollars (Task 5)	\$ 215,138	\$ -	\$ 8,649	\$ 223,786
	Sum of Hours (Task 5)	1,054			
06	Cost Estimate				
	Summary of Labor Dollars (Task 6)	\$ 12,037	\$ -	\$ -	\$ 12,037
	Sum of Hours (Task 6)	46			
07	Master Plan Report				
	Summary of Labor Dollars (Task 7)	\$ 57,779	\$ 600	\$ -	\$ 58,379
	Sum of Hours (Task 7)	280			
08	Project Management				
	Summary of Labor Dollars (Task 8)	\$ 38,120	\$ -	\$ 2,524	\$ 40,645
	Sum of Hours (Task 8)	162			
TOTAL FEE ESTIMATE					\$ 513,254