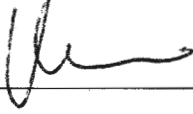


CITY OF MARYSVILLE AGENDA BILL

EXECUTIVE SUMMARY FOR ACTION

CITY COUNCIL MEETING DATE: 09/12/2016

AGENDA ITEM:	
Water Supply Operational Strategy	
PREPARED BY:	DIRECTOR APPROVAL: 
Karen Latimer, Water Operations Manager	
DEPARTMENT:	
Public Works, Water Operations and Water Resources	
ATTACHMENTS:	
Professional Services Agreement Exhibit A – Scope of Work and Fee	
BUDGET CODE:	AMOUNT: \$215,863.00
40220594.563000 W1601	
SUMMARY:	

The drinking water system owned and operated by City of Marysville is very complex in nature. There are five city-owned and one purchased sources of water supply, three water treatment facilities, nine water storage reservoirs, and eleven pressure zones. Drinking water is distributed through 300 miles of pipe to more than 20,000 water services, serving a population in excess of 70,000.

These resources must be prudently managed to optimize efficiency, reduce costs, improve water quality, correct system deficiencies, provide robustness and redundancy throughout the drinking water system, and prepare for future growth. This can be accomplished by performing an in-depth technical analysis of the water system and developing a plan that will identify water operational strategies for current system configuration and future short- and long-term growth configurations.

In 2015 RH2 Engineering, Inc. was hired by the City to prepare a Water Supply Operational Strategy that updated and calibrated the City’s hydraulic water model and recommended operational changes to improve water quality, energy efficiency, and hydraulic capacity within the water system while limiting capital and operations and maintenance costs. We now desire to expand upon that effort to include a more comprehensive system-wide blending analysis and preliminary study to enhance source capacity, water rights, and water quality for various City sources. Results of the preliminary study will be used as a basis for system-wide hydraulic analyses that will identify a water supply operational strategy for existing and future system configurations.

Funding for this project was approved as part of the 2016 budget.

RECOMMENDED ACTION:

Staff recommends that Council authorize the Mayor to sign and execute a Professional Services Agreement between the City of Marysville and RH2 Engineering, Inc. in the amount of \$215,863.00

**PROFESSIONAL SERVICES AGREEMENT BETWEEN
CITY OF MARYSVILLE
AND RH2 ENGINEERING, INC.
FOR CONSULTANT SERVICES**

THIS AGREEMENT (“Agreement”) is made and entered into by and between the City of Marysville, a Washington State municipal corporation (“City”), and RH2 Engineering, Inc., a Washington Corporation licensed to do business in Washington State (“Consultant”).

NOW, THEREFORE, in consideration of the terms, conditions, covenants and performances contained herein, the parties hereto agree as follows:

ARTICLE I. PURPOSE

The purpose of this Agreement is to provide the City with a water supply operational strategy as described in Article II. The general terms and conditions of the relationship between the City and the Consultant are specified in this Agreement.

ARTICLE II. SCOPE OF SERVICES

The Scope of Services is attached hereto as **Exhibit “A”** and incorporated herein by this reference (“Scope of Services”). All services and materials necessary to accomplish the tasks outlined in the Scope of Services shall be provided by the Consultant unless noted otherwise in the Scope of Services or this Agreement. All such services shall be provided in accordance with the standards of the Consultant’s profession.

ARTICLE III. OBLIGATIONS OF THE CONSULTANT

III.1 MINOR CHANGES IN SCOPE. The Consultant shall accept minor changes, amendments, or revision in the detail of the Scope of Services as may be required by the City when such changes will not have any impact on the service costs or proposed delivery schedule. Extra work, if any, involving substantial changes and/or changes in cost or schedules will be addressed as follows:

Extra Work. The City may desire to have the Consultant perform work or render services in connection with each project in addition to or other than work provided for by the expressed intent of the Scope of Services in the scope of services. Such work will be considered as extra work and will be specified in a written supplement to the scope of services, to be signed by both parties, which will set forth the nature and the scope thereof. All proposals for extra work or services shall be prepared by the Consultant at no cost to the City. Work under a supplemental agreement shall not proceed until executed in writing by the parties.

III.2 WORK PRODUCT AND DOCUMENTS. The work product and all documents produced under this Agreement shall be furnished by the Consultant to the City, and upon completion of the work shall become the property of the City, except that the Consultant may retain one copy of the work product and documents for its records. The Consultant will be responsible for the accuracy of the work, even though the work has been accepted by the City.

In the event that the Consultant shall default on this Agreement or in the event that this Agreement shall be terminated prior to its completion as herein provided, all work product of the Consultant, along with a summary of work as of the date of default or termination, shall become the property of the City. Upon request, the Consultant shall tender the work product and summary to the City. Tender of said work product shall be a prerequisite to final payment under this Agreement. The summary of work done shall be prepared at no additional cost to the City.

Consultant will not be held liable for reuse of documents produced under this Agreement or modifications thereof for any purpose other than those authorized under this Agreement without the written authorization of Consultant.

III.3 TERM. The term of this Agreement shall commence upon notice to proceed and shall terminate at midnight, **October 31, 2017**. The parties may extend the term of this Agreement by written mutual agreement.

III.4 NONASSIGNABLE. The services to be provided by the Consultant shall not be assigned or subcontracted without the express written consent of the City.

III.5 EMPLOYMENT.

a. The term “employee” or “employees” as used herein shall mean any officers, agents, or employee of the of the Consultant.

b. Any and all employees of the Consultant, while engaged in the performance of any work or services required by the Consultant under this Agreement, shall be considered employees of the Consultant only and not of the City, and any and all claims that may or might arise under the Workman's Compensation Act on behalf of any said employees while so engaged, and any and all claims made by any third party as a consequence of any negligent act or omission on the part of the Consultant or its employees while so engaged in any of the work or services provided herein shall be the sole obligation of the Consultant.

c. Consultant represents, unless otherwise indicated below, that all employees of Consultant that will provide any of the work under this Agreement have not ever been retired from a Washington State retirement system, including but not limited to Teacher (TRS), School District (SERS), Public Employee (PERS), Public Safety (PSERS), law enforcement and fire fighters (LEOFF), Washington State Patrol (WSPRS), Judicial Retirement System (JRS), or otherwise. *(Please indicate No or Yes*

below)

_____ No employees supplying work have ever been retired from a Washington state retirement system.

_____ Yes employees supplying work have been retired from a Washington state retirement system.

In the event the Consultant indicates “no”, but an employee in fact was a retiree of a Washington State retirement system, and because of the misrepresentation the City is required to defend a claim by the Washington State retirement system, or to make contributions for or on account of the employee, or reimbursement to the Washington State retirement system for benefits paid, Consultant hereby agrees to save, indemnify, defend and hold City harmless from and against all expenses and costs, including reasonable attorney’s fees incurred in defending the claim of the Washington State retirement system and from all contributions paid or required to be paid, and for all reimbursement required to the Washington State retirement system. In the event Consultant affirms that an employee providing work has ever retired from a Washington State retirement system, said employee shall be identified by Consultant, and such retirees shall provide City with all information required by City to report the employment with Consultant to the Department of Retirement Services of the State of Washington.

III.6 INDEMNITY.

a. **Indemnification / Hold Harmless.** Consultant shall defend, indemnify and hold the City, its officers, officials, employees and volunteers harmless from any and all claims, injuries, damages, losses or suits including attorney fees, arising out of or resulting from the acts, errors or omissions of the Consultant in performance of this Agreement, except for injuries and damages caused by the sole negligence of the City.

b. Should a court of competent jurisdiction determine that this Agreement is subject to RCW 4.24.115, then, in the event of liability for damages arising out of bodily injury to persons or damages to property caused by or resulting from the concurrent negligence of the Consultant and the City, its officers, officials, employees, and volunteers, the Consultant's liability, including the duty and cost to defend, hereunder shall be only to the extent of the Consultant's negligence.

c. The provisions of this section shall survive the expiration or termination of this agreement.

d. For the purposes of the indemnity contained in subpart “A” of this paragraph 3.6, Consultant hereby knowing, intentionally, and voluntarily waives the immunity of the Industrial Insurance Act, Title 51 RCW, solely for the purposes of this indemnification. This waiver has been mutually negotiated by the parties.

_____(initials) _____(initials)

III.7 INSURANCE.

a. **Minimum Limits of Insurance.** The Consultant shall procure, and maintain for the duration of the Agreement, insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work and services hereunder by the Consultant, its agents, representatives, employees or subcontractors. The Consultant shall, before commencing work under this agreement, file with the City certificates of insurance coverage and the policy endorsement to be kept in force continuously during this Agreement, in a form acceptable to the City. Said certificates and policy endorsement shall name the City, its officers, elected officials, agents and/or employees as an additional named insured with respect to all coverages except professional liability insurance and workers' compensation.

b. **Minimum Scope of Insurance - Consultant shall obtain insurance of the types described below:**

- (1). Automobile Liability insurance covering all owned, non-owned, hired and leased vehicles. Coverage shall be written on Insurance Services Office (ISO) form CA 00 01 or a substitute form providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage.
- (2). Commercial General Liability insurance shall be written on ISO occurrence form CG 00 01 and shall cover liability arising from premises, operations, independent contractors and personal injury and advertising injury. The City shall be named as an insured under the Consultant's Commercial General Liability insurance policy with respect to the work performed for the City.
- (3). Workers' Compensation coverage as required by the Industrial Insurance laws of the State of Washington.
- (4). Professional Liability insurance appropriate to the Consultant's profession.

c. **The minimum insurance limits shall be as follows:**

- (1) Comprehensive General Liability. \$1,000,000 combined single limit per occurrence for bodily injury personal injury and property damage; \$2,000,000 general aggregate.
- (2) Automobile Liability. \$300,000 combined single limit per accident for bodily injury and property damage.

(3) Workers' Compensation. Workers' compensation limits as required by the Workers' Compensation Act of Washington.

(4) Consultant's Errors and Omissions Liability. \$1,000,000 per occurrence and as an annual aggregate.

d. **Notice of Cancellation.** In the event that the Consultant receives notice (written, electronic or otherwise) that any of the above required insurance coverage is being cancelled and/or terminated, the Consultant shall immediately (within forty-eight (48) hours) provide written notification of such cancellation/termination to the City.

e. **Acceptability of Insurers.** Insurance to be provided by Consultant shall be with a current A.M.Bests rating of no less than A:VII, or if not rated by Bests, with minimum surpluses the equivalent of Bests' VII rating.

f. **Verification of Coverage.** In signing this agreement, the Consultant is acknowledging and representing that required insurance is active and current. Consultant shall furnish the City with original certificates and a copy of the amendatory endorsements, including but not necessarily limited to the additional insured endorsement, evidencing the insurance requirements of the Consultant before commencement of the work. Further, throughout the term of this Agreement, the Consultant shall provide the City with proof of insurance upon request by the City.

g. **Insurance shall be Primary.** The Consultant's insurance coverage shall be primary insurance as respect the City. Any insurance, self-insurance, or insurance pool coverage maintained by the City shall be excess of the Consultant's insurance and shall not contribute with it.

h. **No Limitation.** Consultant's maintenance of insurance as required by this Agreement shall not be construed to limit the liability of the Consultant to the coverage provided by such insurance or otherwise limit the recourse to any remedy available at law or in equity.

i. **Claims-made Basis.** Unless approved by the City all insurance policies shall be written on an "Occurrence" policy as opposed to a "Claims-made" policy. The City may require an extended reporting endorsement on any approved "Claims-made" policy.

j. **Failure to Maintain Insurance** Failure on the part of the Consultant to maintain the insurance as required shall constitute a material breach of contract, upon which the City may, after giving five business days' notice to the Consultant to correct the breach, immediately terminate the contract or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith, with any sums so expended to be repaid to the City on demand, or at the sole discretion of the City, offset

against funds due the Consultant from the City.

III.8 DISCRIMINATION PROHIBITED AND COMPLIANCE WITH EQUAL OPPORTUNITY LEGISLATION. The Consultant agrees to comply with equal opportunity employment and not to discriminate against client, employee, or applicant for employment or for services because of race, creed, color, religion, national origin, marital status, sex, sexual orientation, age or handicap except for a bona fide occupational qualification with regard, but not limited to, the following: employment upgrading; demotion or transfer; recruitment or any recruitment advertising; layoff or terminations; rates of pay or other forms of compensation; selection for training, rendition of services. The Consultant further agrees to maintain (as appropriate) notices, posted in conspicuous places, setting forth the provisions of this nondiscrimination clause. The Consultant understands and agrees that if it violates this nondiscrimination provision, this Agreement may be terminated by the City, and further that the Consultant will be barred from performing any services for the City now or in the future, unless a showing is made satisfactory to the City that discriminatory practices have been terminated and that recurrence of such action is unlikely.

III.9 UNFAIR EMPLOYMENT PRACTICES. During the performance of this Agreement, the Consultant agrees to comply with RCW 49.60.180, prohibiting unfair employment practices.

III.10 LEGAL RELATIONS. The Consultant shall comply with all federal, state and local laws and ordinances applicable to work to be done under this Agreement. The Consultant represents that the firm and all employees assigned to work on any City project are in full compliance with the statutes of the State of Washington governing activities to be performed and that all personnel to be assigned to the work required under this Agreement are fully qualified and properly licensed to perform the work to which they will be assigned. This Agreement shall be interpreted and construed in accordance with the laws of Washington. Venue for any litigation commenced relating to this Agreement shall be in Snohomish County Superior Court.

III.11 INDEPENDENT CONTRACTOR.

a. The Consultant and the City understand and expressly agree that the Consultant is an independent contractor in the performance of each and every part of this Agreement. The Consultant expressly represents, warrants and agrees that his status as an independent contractor in the performance of the work and services required under this Agreement is consistent with and meets the six-part independent contractor test set forth in RCW 51.08.195 or as hereafter amended. The Consultant, as an independent contractor, assumes the entire responsibility for carrying out and accomplishing the services required under this Agreement. The Consultant shall make no claim of City employment nor shall claim any related employment benefits, social security, and/or retirement benefits.

b. The Consultant shall be solely responsible for paying all taxes, deductions,

and assessments, including but not limited to federal income tax, FICA, social security tax, assessments for unemployment and industrial injury, and other deductions from income which may be required by law or assessed against either party as a result of this Agreement. In the event the City is assessed a tax or assessment as a result of this Agreement, the Consultant shall pay the same before it becomes due.

c. The City may, during the term of this Agreement, engage other independent contractors to perform the same or similar work that the Consultant performs hereunder.

d. Prior to commencement of work, the Consultant shall obtain a business license from the City.

III.12 CONFLICTS OF INTEREST. The Consultant agrees to and shall notify the City of any potential conflicts of interest in Consultant's client base and shall obtain written permission from the City prior to providing services to third parties where a conflict or potential conflict of interest is apparent. If the City determines in its sole discretion that a conflict is irreconcilable, the City reserves the right to terminate this Agreement.

III.13 CITY CONFIDENCES. The Consultant agrees to and will keep in strict confidence, and will not disclose, communicate or advertise to third parties without specific prior written consent from the City in each instance, the confidences of the City or any information regarding the City or services provided to the City.

III.14 SUBCONTRACTORS/SUBCONSULTANTS.

a. The Consultant shall is responsible for all work performed by subcontractors/subconsultants pursuant to the terms of this Agreement.

b. The Consultant must verify that any subcontractors/subconsultants they directly hire meet the responsibility criteria for the project. Verification that a subcontractor/subconsultant has proper license and bonding, if required by statute, must be included in the verification process. The Consultant will use the following Subcontractors/Subconsultants or as set forth in Exhibit ____:

Confluence Engineering Group

c. The Consultant may not substitute or add subcontractors/subconsultants without the written approval of the City.

d. All Subcontractors/Subconsultants shall have the same insurance coverages and limits as set forth in this Agreement and the Consultant shall provide verification of said insurance coverage.

ARTICLE IV. OBLIGATIONS OF THE CITY

IV.1 PAYMENTS.

a. The Consultant shall be paid by the City for services rendered under this Agreement as described in the Scope of Services and as provided in this section. In no event shall the compensation paid to Consultant under this Agreement exceed **\$215,863.00** without the written agreement of the Consultant and the City. Such payment shall be full compensation for work performed and services rendered and for all labor, materials, supplies, equipment and incidentals necessary to complete the work. In the event the City elects to expand the scope of services from that set forth in Exhibit A, the City shall pay Consultant a mutually agreed amount.

b. The Consultant shall submit a monthly invoice to the City for services performed in the previous calendar month in a format acceptable to the Cities. The Consultant shall maintain time and expense records and provide them to the Cities upon request.

c. The City will pay timely submitted and approved invoices received before the 20th of each month within thirty (30) days of receipt.

IV.2 CITY APPROVAL. Notwithstanding the Consultant's status as an independent contractor, results of the work performed pursuant to this Agreement must meet the approval of the City, which shall not be unreasonably withheld if work has been completed in compliance with the Scope of Services and City requirements.

IV.3 MAINTENANCE/INSPECTION OF RECORDS. The Consultant shall maintain all books, records, documents and other evidence pertaining to the costs and expenses allowable under this Agreement in accordance with generally accepted accounting practices. All such books and records required to be maintained by this Agreement shall be subject to inspection and audit by representatives of the City and/or the Washington State Auditor at all reasonable times, and the Consultant shall afford the proper facilities for such inspection and audit. Representatives of the City and/or the Washington State Auditor may copy such books, accounts and records where necessary to conduct or document an audit. The Consultant shall preserve and make available all such books of account and records for a period of three (3) years after final payment under this Agreement. In the event that any audit or inspection identifies any discrepancy in such financial records, the Consultant shall provide the City with appropriate clarification and/or financial adjustments within thirty (30) calendar days of notification of the discrepancy.

ARTICLE V. GENERAL

V.1 NOTICES. Notices to the City shall be sent to the following address:

City of Marysville Public Works

Attn: Karen Latimer
80 Columbia Ave
Marysville, WA 98270

Notices to the Consultant shall be sent to the following address:

RH2 Engineering, Inc.
22722 29th Dr SE
Suite 210
Bothell, WA 98021

Receipt of any notice shall be deemed effective three (3) days after deposit of written notice in the U.S. mail with proper postage and address.

V.2 TERMINATION. The right is reserved by the City to terminate this Agreement in whole or in part at any time upon ten (10) calendar days' written notice to the Consultant.

If this Agreement is terminated in its entirety by the City for its convenience, the City shall pay the Consultant for satisfactory services performed through the date of termination in accordance with payment provisions of Section VI.1.

V.3 DISPUTES. The parties agree that, following reasonable attempts at negotiation and compromise, any unresolved dispute arising under this Agreement may be resolved by a mutually agreed-upon alternative dispute resolution of arbitration or mediation.

V.4 EXTENT OF AGREEMENT/MODIFICATION. This Agreement, together with attachments or addenda, represents the entire and integrated Agreement between the parties and supersedes all prior negotiations, representations, or agreements, either written or oral. This Agreement may be amended, modified or added to only by written instrument properly signed by both parties.

V.5 SEVERABILITY

a. If a court of competent jurisdiction holds any part, term or provision of this Agreement to be illegal or invalid, in whole or in part, the validity of the remaining provisions shall not be affected, and the parties' rights and obligations shall be construed and enforced as if the Agreement did not contain the particular provision held to be invalid.

b. If any provision of this Agreement is in direct conflict with any statutory provision of the State of Washington, that provision which may conflict shall be deemed inoperative and null and void insofar as it may conflict, and shall be deemed modified to conform to such statutory provision.

V.6 NONWAIVER. A waiver by either party hereto of a breach by the other party hereto of any covenant or condition of this Agreement shall not impair the right of the party not in default to avail itself of any subsequent breach thereof. Leniency, delay or failure of either party to insist upon strict performance of any agreement, covenant or condition of this

Agreement, or to exercise any right herein given in any one or more instances, shall not be construed as a waiver or relinquishment of any such agreement, covenant, condition or right.

V.7 FAIR MEANING. The terms of this Agreement shall be given their fair meaning and shall not be construed in favor of or against either party hereto because of authorship. This Agreement shall be deemed to have been drafted by both of the parties.

V.8 GOVERNING LAW. This Agreement shall be governed by and construed in accordance with the laws of the State of Washington.

V.9 VENUE. The venue for any action to enforce or interpret this Agreement shall lie in the Superior Court of Washington for Snohomish County, Washington.

V.10 COUNTERPARTS. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which shall constitute one and the same Agreement.

V.11 AUTHORITY TO BIND PARTIES AND ENTER INTO AGREEMENT. The undersigned represent that they have full authority to enter into this Agreement and to bind the parties for and on behalf of the legal entities set forth below.

DATED this _____ day of _____, 2016.

CITY OF MARYSVILLE

RH2 ENGINEERING, INC.

By _____
Jon Nehring, Mayor

By _____

Approved as to form:

Jon Walker, City Attorney

EXHIBIT A
Scope of Work
City of Marysville
Water Supply Operational Strategy

September 2016

Background

The City of Marysville (City) would like to optimize the operation of its water system by better utilizing its existing water rights, maximizing the amount of water produced by the City's own sources, increasing redundancy, improving water quality, and remedying other system deficiencies. This Scope of Work will focus on expanding a previous Water Supply Operational Strategy that was prepared by RH2 Engineering, Inc., (RH2) in 2015 to include a more comprehensive system-wide blending analysis and preliminary studies to enhance source capacity, water rights, and water quality for various sources. The results of the preliminary study will be used as a basis for system-wide hydraulic analyses that will identify a water supply operational strategy for the existing system configuration, a future 6-year scenario, and the system at buildout. Confluence Engineering Group, LLC (Confluence) will work as a subconsultant to RH2 for the source blending analyses.

The preliminary studies will be performed for the following sources. Each source has unique challenges to overcome before full water right utilization and full integration into the water system can be achieved.

Highway 9 Well

The Highway 9 Well is the sole point of withdrawal under groundwater certificate G1-23487C, which authorizes withdrawal of 1,000 gallons per minute (gpm) and 1,600 acre-feet per year (afy) for municipal supply. The Highway 9 Well supplies groundwater with elevated arsenic, iron, and manganese concentrations. In addition, there are anecdotal reports that pumping from this well created undesirable interference drawdown in surrounding private wells when the well was active in the early 1980s. Utilization of this well will, at a minimum, require construction of a treatment facility to remove the manganese, iron, and arsenic. In addition to considering the reactivation of the Highway 9 Well, an alternative analysis will be performed to identify where the associated water right could possibly be moved, should a decision be made to relocate the source from the existing site.

Lake Goodwin Well

The Lake Goodwin Well is the sole point of withdrawal under groundwater certificate (GWC) 6980, which authorizes 550 gpm and 880 afy for municipal supply. The Lake Goodwin Well pumps groundwater with elevated manganese concentrations, and the well screen is reported to clog when the well is pumped at the full water right capacity, so it is currently throttled back to 350 gpm. The limited storage offered by the on-site standpipe and small demand from the current delivery zone causes the well to cycle on and off excessively, which might be responsible for exacerbating the well screen clogging.

Edward Springs

The Edward Springs source contains both spring collectors and wells that are not producing water up to the water right limits (Springs – 1,392 gpm and 2,232 afy; Well No. 1R – 300 gpm and 480 afy; Well No. 2 – 500 gpm and 800 afy; and Well No. 3 – 400 gpm and 451 afy). There is also concern that elevated arsenic levels from the wells contribute to approximately half of the maximum contaminant level (MCL) when combined with the springs source and that treatment or dilution with a source containing lower arsenic

should be considered to eliminate the risk of this source exceeding future regulatory limits. This source will be analyzed to determine if improvements to the spring collector system or wellfield could be carried out to optimize production, without degrading water quality, hopefully up to the water right limit.

The City's remaining sources will also be considered in the comprehensive system-wide blending analysis and water supply operational strategy. A description of these sources is presented herein.

Stillaguamish Ranney Well Collector

The Stillaguamish Ranney Well Collector has seven screened 10-inch collector lines, each approximately 100 feet long, which extend out radially from the caisson bottom. Subsurface water is screened through the collectors and flows by gravity to the caisson pumps, where it is pumped to the Stillaguamish River Water Treatment Plant for treatment and then pumped out into the distribution system. The collector well and treatment plant have the capacity to supply the full 3.2 million gallons per day (MGD) water right. There are currently no water quality or capacity concerns with this source.

Sunnyside Wells

The Sunnyside Well No. 1R and Sunnyside Well No. 2 have a history of high iron and manganese levels. As a result of the water quality issues, the City is currently constructing the Sunnyside Well Water Treatment Facility, which is scheduled for completion in 2017. Once the water treatment facility is completed, the wells will be capable of supplying their full instantaneous water right amount of 1,000 gpm each. Empty pump bays will be provided in the water treatment facility for future installation of booster pumps to transfer water produced from the Sunnyside Wells to a higher pressure zone. Previous source blending analyses performed by Confluence have recommended that water produced from this source be blended with water supplied from the City of Everett (Everett).

JOA Supply Pipeline

The City receives wholesale water from Everett under a Joint Operating Agreement (JOA) with Everett, the Tulalip Tribes, and Snohomish County Public Utility District No. 1 (PUD). The 30-inch JOA supply pipeline connects to Everett's transmission lines and provides water supply from the Sultan River that is filtered and chlorinated. The total capacity of the 30-inch JOA supply pipeline is 20.66 MGD; under the JOA, and subsequent agreement with the Snohomish County PUD, the City receives up to 13.15 MGD. The remaining 7.51 MGD is wheeled to the Tulalip Tribes and Snohomish County PUD in accordance with the JOA. Water purchased from Everett is typically costlier than producing water from the City's sources. Previous source blending analyses performed by Confluence have recommended that water produced from the Sunnyside and Highway 9 Wells be blended with Everett water to reduce water quality impacts within the distribution system.

Task 1 – Source of Supply Blending Study

Objective: Analyze the water quality of the existing sources and JOA water to determine potential water quality impacts of source blending and recommend optimal source blending ratios to minimize impacts. The following approach indicates subtasks that will be performed by RH2, Confluence, or both. This task will be prioritized over other tasks to provide a recommendation for blending ratios of the Sunnyside Well supply prior to bringing the new treatment facility online, which is expected in summer 2017.

Approach:

- 1.1 Attend a kick-off meeting with the City, RH2, and Confluence and discuss evaluation criteria for the blending analyses (RH2 and Confluence).

- 1.2 Perform extended period hydraulic analyses to estimate the area of influence of each source of supply within the system, approximate water age in the distribution system, and potential range of blends of the sources under various seasonal demand conditions. *For the purposes of these analyses, it will be assumed that the location of the City's existing sources will not change* (RH2).
- 1.3 Review existing data, including locations of discolored water complaints and available complaint data (RH2 and Confluence).
- 1.4 Recommend water quality sampling to be conducted by the City. Review the results of the water quality sampling (Confluence).
- 1.5 Conduct a blending analysis to assess water quality impacts of blending the various sources over a wide range of blends (0 to 100 percent). Recommend optimal blending ratios for all sources that will be blended (Confluence).
- 1.6 Identify critical areas of the system where water quality problems (i.e., discolored water, customer complaints) are more likely based upon water age and pipe material (Confluence).
- 1.7 Identify potential regulatory concerns (i.e., disinfection byproduct formation, low chlorine residuals, Lead and Copper Rule, and Revised Total Coliform Rule) (Confluence).
- 1.8 Identify potential issues with changing between sources (flip-flopping) as needed to maximize future operational flexibility (Confluence).
- 1.9 Develop alert and action levels for key water quality parameters that can be used to screen for potential system upsets (Confluence).
- 1.10 Develop a conceptual experimental design for future pipe rig studies (Confluence).
- 1.11 Recommend physical methods of blending to accomplish the recommended optimal ratios (RH2 and Confluence).
- 1.12 Develop a draft Source of Supply Blending Study Technical Memorandum for review by the City (RH2 and Confluence).
- 1.13 Update the Source of Supply Blending Study Technical Memorandum based on review comments from the City and finalize the memorandum (RH2 and Confluence).

Assumptions:

- *Water quality testing lab fees are unknown at this time; therefore, they are not included in this Scope of Work and shall be paid by the City directly.*

Provided by City:

- Perform recommended water quality sampling.

RH2 Deliverables:

- Attendance at kick-off meeting.
- Water supply blending technical memorandum.

Task 2 – Highway 9 Well Testing

Objective: Review the history of the Highway 9 Well, including why it was only used for less than 5 years, so that the City can make informed decisions about its future use under GWC G1-23487C (1,000 gpm and 1,600 afy). Provide guidance on installation of new access ports and drop tubes for manual and data logger data collection of water levels. Collect additional water level and water quality data from the existing well to identify impacts on water level due to pumping of nearby wells, to see how the aquifer responds seasonally to changes in recharge and withdrawals, to see how other wells respond to pumping stress, and to measure recent water quality for comparison with historic data.

Approach:

- 2.1 Review City, Washington State Department of Ecology (Ecology), and Washington State Department of Health (DOH) documents associated with this site.
- 2.2 Perform one (1) site visit to examine the wellhead and provide a recommendation on how/if the City can install two 1-inch diameter access ports and drop tubes for water level measurement.
- 2.3 Install a vented pressure transducer data logger in the well to gather water level data (1-minute intervals for first month, 15-minute intervals thereafter).
- 2.4 Coordinate with Mr. Joel Palm to attempt to identify locations of private wells that may have reported undesirable interference drawdown when the Highway 9 Well was active in the early 1980s. Confirm whether these reported concerns can be validated.
- 2.5 If the concerns regarding the undesirable interference drawdown from the Highway 9 Well are validated, or cannot be invalidated, identify and equip up to four (4) neighboring private wells whose water level can be measured for 1 month and while the well is pumping.
- 2.6 Measure groundwater levels in the Highway 9 Well and any neighboring private wells while pumping to waste for at least 1 day.
- 2.7 Collect water quality samples during the pumping test for field water quality measurement and laboratory analysis.
- 2.8 Perform six (6) monthly site visits to download the Highway 9 Well data logger and take manual water level measurements.
- 2.9 Review water quality data and further identify chlorine contact time compliance requirements as needed based on various source blending scenarios. Verify that previously identified treatment processes for arsenic, iron, and manganese are still valid.
- 2.10 Summarize groundwater level and water quality data and required treatment processes for the existing well in a technical memorandum after six (6) months of data has been collected.

Assumptions:

- *The wellhead configuration will allow for installation of at least one (1) access port that will allow passage of a vented pressure transducer data logger with a diameter of 0.71 inches.*
- *If an adequate access port and drop tube cannot be installed, the subtasks associated with water level monitoring in the Highway 9 Well under this task will be reevaluated.*

- *Manual water level measurements can be made through an access port in the wellhead when the pressure transducer data logger is installed.*
- *Water quality testing lab fees are unknown at this time; therefore, they are not included in this Scope of Work and shall be paid by the City directly.*
- *Water quality is assumed to be similar to those measured during the Highway 9 Well pilot study (2014). If source water quality collected as part of this effort warrants further treatment analysis, a contract amendment will be negotiated at that time.*
- *While pumping to waste, the pumping rate of the well can be measured by the City.*

Provided by City:

- Identification of which properties in the vicinity are currently hooked up to City water.
- Identification by Mr. Joel Palm of which properties were hooked up to City water due to interference drawdown when Highway 9 Well was pumping.
- Water level and metering data collected, especially from the period of 1981 through 1984 when the well was operational.
- Past laboratory and field water quality results from water produced by this source.
- Installation of at least one (1) access port and drop tube (1-inch inner diameter) for water level measurement.
- Access to the well for review of the wellhead to provide recommendation on installation of one (1) or two (2) new access ports and initial data logger installation and monthly downloads.
- Operation of the well, to waste, to collect water quality samples and determine interference drawdown in neighboring wells.
- Perform recommended water quality sampling.

RH2 Deliverables:

- Site visits to provide recommendation on access port installation and install data loggers and download data.
- Technical memorandum containing a summary of data located and analyzed, water right analysis, water level analysis, and water quality analysis.

Task 3 – Highway 9 Well Alternative Analysis

Objective: Expand on the previously completed water right analysis with respect to changing the point of withdrawal to a new well at the Sunnyside facility to a larger geographic area. Identify the feasibility of changing the point of withdrawal under water right G1-23487C to up to four (4) sites. Identify the strengths and weaknesses of each proposed site.

Approach:

- 3.1 Identify and characterize the body of public groundwater tapped by the well.
- 3.2 Identify water right limitations on the location of an additional or replacement well.

- 3.3 Identify preferred well locations based on engineering considerations within the City's system given anticipated future demands, zones, and source capacity.
- 3.4 Compare the water right and engineering considerations to identify up to four (4) alternative well sites.
- 3.5 Identify expected well attributes at possible well locations and provide planning-level costs for transfer to and development of those sites and compare with utilizing the water right at the existing site from the existing well.
- 3.6 Prepare a technical memorandum summarizing the findings, recommendations, and next steps, which might include water right changes, well drilling, aquifer testing, pilot water treatability testing, and DOH project approval.

Assumptions:

- *This is a desktop analysis and will not include field hydrogeologic investigations, such as test well drilling or pumping tests.*

RH2 Deliverables:

- Technical memorandum containing the results of the alternative analysis.

Task 4 – Lake Goodwin Well Water Right and Alternative Analysis

Objective: Review the history of the Lake Goodwin Well so that the City can make informed decisions about its future use under GWC 6980 (550 gpm and 880 afy). Provide a recommendation on how additional production capacity could be obtained from the Lake Goodwin Well.

Approach:

- 4.1 Review City, Ecology, and DOH documents associated with this site.
- 4.2 Review hydrogeology of the northern Tulalip Plateau and the Lake Goodwin Well.
- 4.3 Identify water right limitations on the location of an additional or replacement well.
- 4.4 Review the well log and past rehabilitation efforts.
- 4.5 Identify potential processes for manganese treatment.
- 4.6 Identify preferred additional or replacement well locations based on engineering considerations within the City's system given anticipated future demands, zones, and source capacity.
- 4.7 Compare the water right and engineering considerations to identify up to four (4) alternative capacity enhancement options and develop planning-level costs.
- 4.8 Identify expected well attributes at possible well locations.
- 4.9 Prepare a technical memorandum summarizing the findings, recommendations, and next steps, which might include water right changes, well drilling, aquifer testing, pilot water treatability testing, and DOH project approval.

Provided by City:

- Existing well construction and testing report, rehabilitation reports, and video scans.

- Water level and metering data collected for the well.
- Past laboratory and field water quality results from water produced by this source.

RH2 Deliverables:

- Technical memorandum containing the results of the water rights and capacity alternative analysis.

Task 5 – Edward Springs Source Testing

Objective: Review the history of the Edward Springs and associated wells to understand the physical limitations of the existing source so that the City can make informed decisions about its future use. Collect new water level and water quality data from the existing spring collectors and wells to identify impacts on water level due to pumping of water from other wells, and to see how the aquifer responds to pumping stress to allow siting of additional wells.

Approach:

- 5.1 Review City, Ecology, and DOH documents associated with this site.
- 5.2 Review hydrogeology of the northeastern Tulalip Plateau as it relates to the Edward Springs Source.
- 5.3 Analyze existing available water level and discharge data.
- 5.4 Analyze existing available water quality data.
- 5.5 Develop a plan for temporary City operation of the wells and spring collectors to assist with characterizing the source. Attend one (1) meeting with the City to discuss the proposed plan.
- 5.6 Perform one (1) site visit and install vented pressure transducer data loggers in the three (3) wells and spring collector to gather water level data (1-minute intervals for the first month, 15-minute intervals thereafter).
- 5.7 Perform six (6) monthly site visits to download data and take manual water level measurements.
- 5.8 Identify when discrete water quality samples should be collected by the City from each well and spring collector for field and laboratory analysis to determine if water quality is being negatively impacted by a particular source.
- 5.9 Review water quality data and identify potential processes for arsenic treatment as needed.
- 5.10 Analyze the short-term and long-term groundwater level data after six (6) months of data has been collected.
- 5.11 Prepare a technical memorandum summarizing the data collected, results of the testing, and potential processes for arsenic treatment.

Assumptions:

- *The wellheads contain an access port that will allow passage of a vented pressure transducer data logger with a diameter of 0.71 inches.*
- *Manual water level measurements can be made through an access port in the wellheads when the pressure transducer data logger is installed.*

- *Water quality testing lab fees are unknown at this time; therefore, they are not included in this Scope of Work and shall be paid by the City directly.*
- *Monthly data logger downloading will occur on the same days for Tasks 2 and 5.*

Provided by City:

- Existing spring discharge measurement information.
- Existing well construction and testing reports.
- Map of the source showing location of all existing spring collectors and wells, and the extent of existing City property near the site.
- Water level and metering data collected for the wells and spring collectors.
- Past laboratory and field water quality results from water produced by each spring collector and well at this source.
- Description of the ability of the City to alter operation to facilitate data collection.
- Access to the site for initial data logger installation and monthly downloads.
- One (1)-minute interval information on operation of the spring collectors and wells for one (1) month.
- Controlled operation of the different wells and spring collectors for a period of 2 to 7 days to allow for analysis of different interference drawdown impacts.
- Perform recommended water quality sampling.

RH2 Deliverables:

- Meeting with operations staff to discuss the temporary operations plan.
- Site visits to install data loggers and download data.
- Technical memorandum containing a summary of data located and analyzed, water level analysis, and water quality analysis.

Task 6 – Edward Springs Optimization and Alternative Analysis

Objective: Identify the feasibility of making changes to the existing spring collectors and wells, or through the addition of wells and spring collectors, to allow for more efficient capture of water and utilization of water up to the water right limits.

Approach:

- 6.1 Identify and characterize the body or bodies of public groundwater tapped by the springs and wells.
- 6.2 Prepare a figure showing the recharge area for Edward Springs and the portion of the watershed that may impact the spring collectors via surface water flows.
- 6.3 Identify water right limitations on the location of an additional or replacement well.

- 6.4 Identify preferred spring collector and well locations based on optimizing engineering considerations within the City's system given anticipated future demands, zones, and source capacity.
- 6.5 Compare the water right and engineering considerations to identify up to four (4) alternative well or spring collector sites to increase the source capacity. Alternatives will include water main or other system improvements that may be needed to fully utilize the Edward Springs supply.
- 6.6 Identify expected well or spring collector attributes at possible locations and provide planning-level cost estimates for including those locations as part of the source.
- 6.7 Prepare a technical memorandum summarizing the findings, recommendations, and next steps, which might include water right changes, well drilling, aquifer testing, pilot water treatability testing, and DOH project approval.
- 6.8 Meet with the City to present the results of the optimization and alternatives analysis.

Assumptions:

- *This is a desktop analysis and will not include field hydrogeologic investigations, such as test well drilling or pumping tests.*

RH2 Deliverables:

- Technical memorandum containing the results of the optimization and alternatives analysis.
- Meeting with City to discuss the Edward Springs optimization and alternatives analysis.

Task 7 – Hydraulic Analyses and Operational Strategy Report

Objective: Expand the Water System Operational Strategy prepared by RH2 in 2015 based on the results of the previous tasks and updated hydraulic analyses.

Approach:

- 7.1 Coordinate with the City to obtain updated estimated costs for producing water from each of the City-owned sources and for purchasing water from Everett.
- 7.2 Perform extended period simulations and steady state analyses in the hydraulic model to recommend an operational strategy for the water system on a seasonal basis for the existing, 6-year, and 20-year water system. The analyses will refine and build upon optimization analyses recently performed by RH2. The analyses will consider the following elements.
 - a. Source blending recommendations identified in Task 1.
 - b. Results of source of supply evaluations and recommendations from previous tasks.
 - c. Increase supply produced from sources owned by the City, particularly from the Sunnyside Wells when they are brought online.
 - d. Capital and operations and maintenance costs.
 - e. Water supply, fire flow, and minimum pressure requirements for City customers and the Tulalip Tribe under the JOA.
 - f. Maximizing water right usage for each individual source.

- g. Improving water quality.
 - h. Redundancy in source of supply to individual pressure zones.
 - i. Consideration for adjustment to the north/south water system boundary.
- 7.3 Identify improvements as necessary to implement the recommended operational strategy, which may include new equipment or modifications to existing facilities, pressure zone reconfigurations, or system setpoint adjustments.
- 7.4 Estimate cost savings potential of implementing the recommended operational strategy for the existing, 6-year, and buildout water system.
- 7.5 Prioritize recommended improvements based on their cost effectiveness and the project need.
- 7.6 Develop a draft operational strategy report that summarizes the technical memoranda, recommendations, and operational strategy for review by the City.
- 7.7 Meet with the City to discuss the results of the analyses and review the feasibility of the proposed operational strategy.
- 7.8 Update the operational strategy report based on review comments from the City and finalize the report.

RH2 Deliverables:

- Attendance at meeting to discuss project findings.
- Operational strategy report.

EXHIBIT B

City of Marysville

Water Supply Operational Strategy

Fee Estimate

Description		Total Hours	Total Labor	Total Subconsultant	Total Expense	Total Cost
Task 1	Source of Supply Blending Study	129	\$ 20,845	\$ 43,702	\$ 2,807	\$ 67,354
Task 2	Highway 9 Well Testing	114	\$ 18,564	\$ -	\$ 3,686	\$ 22,250
Task 3	Highway 9 Well Alternative Analysis	97	\$ 16,141	\$ -	\$ 1,500	\$ 17,641
Task 4	Lake Goodwin Well Water Right and Alternative Analysis	122	\$ 20,621	\$ -	\$ 1,601	\$ 22,222
Task 5	Edward Springs Source Testing	107	\$ 18,509	\$ -	\$ 6,699	\$ 25,208
Task 6	Edward Springs Optimization and Alternative Analysis	122	\$ 20,311	\$ -	\$ 1,893	\$ 22,204
Task 7	Hydraulic Analyses and Operational Strategy Report	219	\$ 35,222	\$ -	\$ 3,762	\$ 38,984
Water Supply Operational Strategy		910	\$ 150,213	\$ 43,702	\$ 21,948	\$ 215,863

EXHIBIT C
RH2 ENGINEERING, INC.
2016 SCHEDULE OF RATES AND CHARGES

RATE LIST	RATE	UNIT
Professional I	\$137	\$/hr
Professional II	\$150	\$/hr
Professional III	\$159	\$/hr
Professional IV	\$170	\$/hr
Professional V	\$180	\$/hr
Professional VI	\$189	\$/hr
Professional VII	\$204	\$/hr
Professional VIII	\$213	\$/hr
Professional IX	\$213	\$/hr
Technician I	\$96	\$/hr
Technician II	\$101	\$/hr
Technician III	\$129	\$/hr
Technician IV	\$137	\$/hr
Administrative I	\$65	\$/hr
Administrative II	\$77	\$/hr
Administrative III	\$92	\$/hr
Administrative IV	\$108	\$/hr
Administrative V	\$128	\$/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
Mileage	\$0.540	price per mile (or Current IRS Rate)
Subconsultants	15%	Cost +
Outside Services	at cost	