


CITY OF MARYSVILLE AGENDA BILL

EXECUTIVE SUMMARY FOR ACTION

CITY COUNCIL MEETING DATE: 06/23/14

AGENDA ITEM: Water Comprehensive Plan Update	
PREPARED BY: John Cowling	DIRECTOR APPROVAL: 
DEPARTMENT: Public Works - Engineering	
ATTACHMENTS: Professional Services Agreement	
BUDGET CODE: 40143410.541000.1419	AMOUNT: \$218,217.00
SUMMARY:	

This Professional Services Agreement will provide the City with an updated Water Comprehensive Plan. The recommended consultant for this work is RH2 Engineering, Inc. After conducting consultant interviews and reviewing qualifications, the selection committee ultimately determined that RH2 Engineering, Inc. was best-suited for this project.

It is staff's opinion that the negotiated fee of \$218,217.00 is fair and consistent with industry standard for the type of work at hand. Furthermore, RH2 has a proven track record with the City and they perform excellent work. In light of these facts staff is confident that the City would be well-served by RH2 working on this project.

RECOMMENDED ACTION: City staff recommends council authorize the mayor to sign and execute the Professional Services Agreement with RH2 Engineering, Inc. for consultant services on the Marysville Water Comprehensive Plan Update.

**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. ("Consultant"), a Washington Corporation licensed to do business in Washington State.

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 consultant services 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 issued by the City and all terminate at midnight, December 31, 2015. 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. 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.

III.6 INDEMNITY.

a. The Consultant shall at all times indemnify and hold harmless and defend the City, its elected officials, officers, employees, agents and representatives, from and against any and all lawsuits, damages, costs, charges, expenses, judgments and liabilities, including attorney's fees (including attorney's fees in establishing indemnification), collectively referred to herein as "losses" resulting from, arising out of, or related to one or more claims arising out of negligent acts, errors, or omissions of the Consultant in performance of Consultant's professional services under this Agreement. The term

"claims" as used herein shall mean all claims, lawsuits, causes of action, and other legal actions and proceedings of whatsoever nature, involving bodily or personal injury or death of any person or damage to any property including, but not limited to, persons employed by the City, the Consultant or other person and all property owned or claimed by the City, the Consultant, or affiliate of the Consultant, or any other person.

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 damaging 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 members, officers, employees and agents, the Consultant's liability to the City, by way of indemnification, shall be only to the extent of the Consultant's negligence.

c. The Consultant specifically and expressly waives any immunity that may be granted it under the Washington State Industrial Insurance Act, Title 51 RCW, as provided in RCW 4.24.115. The indemnification obligation under this Agreement shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable to or for any third party under workers compensation acts, disability benefits acts, or other employee benefits acts; provided the Consultant's waiver of immunity by the provisions of this paragraph extends only to claims against the Consultant by the City and does not include, or extend to, any claims by the Consultant's employees directly against Consultant. The obligations of Consultant under this subsection have been mutually negotiated by the parties hereto, and Consultant acknowledges that the City would not enter into this Agreement without the waiver thereof of Consultant.

d. Nothing contained in this section or Agreement shall be construed to create a liability or a right of indemnification by any third party.

e. The City's inspection or acceptance of any of the Consultant's work when completed shall not be grounds to avoid any of these covenants of indemnification.

f. The provisions of this section shall survive the expiration or termination of this Agreement with respect to any event occurring prior to such expiration or termination.

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. The minimum insurance requirements 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.

b. **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.

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

d. **Verification of Coverage.** In signing this agreement, the Consultant is acknowledging and representing that required insurance is active and current. Further, throughout the term of this Agreement, the Consultant shall provide the City with proof of insurance upon request by the City.

e. **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.

f. **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.

g. **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.

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 ____:

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 \$218,217.00 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: John Cowling, PE
80 Columbia Ave
Marysville, WA 98270**

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

**RH2 Engineering, Inc.
Attn: Michele Campbell, PE
22722 29th Drive SE, Ste 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.

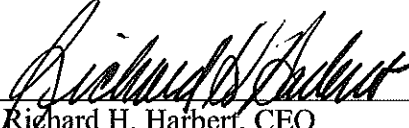
V.11 AUTHORITY TO BIND PARTIES AND ENTER INTO AGREEMENT. The undersigned represent that they have full authority to enter into this Agreement and to bind the parties for and on behalf of the legal entities set forth below.

DATED this _____ day of _____, 2014.

CITY OF MARYSVILLE

RH2 Engineering, INC.

By _____
Jon Nehring, Mayor

By 
Richard H. Harbert, CEO

Approved as to form:

By _____
Grant K. Weed, City Attorney

EXHIBIT A
Scope of Work
City of Marysville
Water System Plan Update
May 2014

Background

RH2 recently performed hydraulic analyses for the City of Marysville (City) to evaluate the operation of the water system and to recommend improvements for the North 240 Zone expansion, the Soper Hill Water System assumption and the north-end optimization. Some of the recommendations in these studies have already been implemented by the City. In addition to these improvements to the water system, improvements to the Sunnyside Wells and the Highway 9 Well are planned that will change the water supply strategy of the system to increase production from the City's own sources. The pilot study for the Sunnyside Wells has indicated a concern for mixing of the source with water supply from Everett. The original analyses performed by RH2 need to be refined to account for the recent changes in the system, to expand the north-end optimization analyses to consider the entire system and to evaluate blending of the City's water supply to reduce water quality concerns. The original analyses utilized the City's existing water system model, which has not been calibrated to the level of accuracy recommended for the detailed analyses requested by the City. The hydraulic model will be calibrated for both steady state and extended-period simulations to provide a greater degree of insight into the operation of the system. These detailed analyses will be performed as part of the City's Water System Plan (WSP) Update to take advantage of the efficiencies that may be realized in these similar system-wide planning efforts.

This Scope of Work includes tasks necessary to update the City's WSP and evaluate the ability of the water system to meet the needs of existing and future water system customers throughout the 20-year planning period. Based on the current planning requirements of Washington Administrative Code (WAC) Chapter 246-290, the City's WSP must be updated every 6 years. It is anticipated that the planning requirements will be modified to extend the WSP update cycle to 10 years. In anticipation of this upcoming change, the WSP will be prepared with analyses and projections based on both 6-year and 10-year planning cycles. This approach has been approved by the Washington State Department of Health (DOH) and will extend the WSP update cycle to 10 years once the WAC is modified.

The supplemental tasks to perform a more detailed evaluation of the existing water system will support the development of an accurate and cost-effective Capital Improvement Program (CIP) for the WSP. These tasks will evaluate the energy efficiency of the water system, document the existing condition of the pumps, update the unidirectional flushing program, calibrate the hydraulic model, and improve the operational strategy of the system.

This Scope of Work is based on published regulatory requirements for comprehensive water system plans known at the time of this writing. If new or expanded regulatory requirements are published during the course of this project, a contract amendment, along with a scope of work and fee estimate, can be provided for the additional work needed to satisfy the requirements. Enclosed as **Exhibit B** is a list of data to be provided by the City prior to commencement of the activities contained in this Scope of Work.

Task 1 – Data Collection and DOH Coordination

Objective: Assist the City in collecting data to complete the water system planning process. Coordinate with the DOH throughout the development of the WSP.

Approach:

- 1.1 Attend a pre-planning conference with City, Snohomish County (County), and DOH staff.
- 1.2 Coordinate with City staff during the data collection process. This includes coordinating via telephone, submitting the list of data needed, and reviewing data provided by the City.
- 1.3 Attend one (1) meeting with City staff to review collected data.
- 1.4 Coordinate with DOH throughout the planning process to provide schedule and progress reports towards completion of the WSP.

Assumptions: To reduce the level of effort needed to update the WSP, RH2 will rely on the accuracy and completeness of existing information, data, and materials provided by the City and others in relation to this scope of work.

RH2 Deliverables: Attendance at one (1) meeting with City, County, and DOH staff, and coordination via telephone and email with DOH. Attendance at one (1) meeting with City staff to review collected data.

Task 2 – Introduction and Existing Water System Description

Objective: Provide a description of the components of the existing water system.

Approach:

- 2.1 Describe the water system ownership and management. Include the system type, system identification number, address, and contact person.
- 2.2 Describe the authorization and purpose of the WSP and the WSP contents, and provide a definition of terms and a list of abbreviations used in the WSP.
- 2.3 Review previous plans, existing system information and data, and facility as-builts.
- 2.4 Visit each facility with City staff to collect field information and observe equipment layouts and existing conditions.
- 2.5 Provide a brief overview of the history of the water system using information from the previous WSP and historical summaries compiled and provided by the City. Include the current number of existing and approved service connections.
- 2.6 Describe the physical characteristics of the existing water service area and its effects on water system planning, including topography, geology, sensitive areas, and flood zones.
- 2.7 Describe the City's existing and future service areas, including the Urban Growth Area, retail water service area, and water service agreements. Include existing plans for expanding the current service area.
- 2.8 Summarize the Satellite Management Agency (SMA) program, its potential impacts on the City, and the City's policy toward satellite management.
- 2.9 Provide a brief overview of the operation of the existing water system.

**City of Marysville
Water System Plan Update**

**Exhibit A
Scope of Work**

- 2.10 Describe each pressure zone and existing facilities, including sources of supply, pressure reducing stations, pipelines, reservoirs, interties, and telemetry and supervisory control systems.
- 2.11 Provide a table of water main inventory that includes total lengths, diameters, materials, and age based on available data.
- 2.12 Review adjacent water systems and provide a brief description of the adjacent water systems and the potential for emergency interties. Document existing emergency interties.
- 2.13 Prepare color figures of the following.
- Existing Water System
 - Existing System Hydraulic Profile
 - Service Area and Adjacent Systems

RH2 Deliverables: Descriptions and figures of existing system components for City review and comment. Attendance at one (1) facility visit with City staff.

Task 3 – Land Use and Population

Objective: Review planning-related documents and identify impacts on the City's water system for use in the WSP.

Approach:

- 3.1 Prepare and review an inventory of related plans to provide a summary of the impacts or constraints on the water system, including the *Snobomish County Land Use Plan* and the *Snobomish County Coordinated Water System Plan*, and review how the Growth Management Act (GMA) impacts the City.
- 3.2 Complete DOH's Consistency Statement Checklist for each planning agency with which the WSP must be consistent, including local and county planning jurisdictions.
- 3.3 Identify existing and future land use patterns in and adjacent to the City and their impacts on existing and future facilities and water sources for the water system.
- 3.4 Identify current and projected housing trends and household sizes within the City's service area based on available information from City staff, as well as County and state population data.
- 3.5 Include a table of 6-year, 10-year, and 20-year population projections for both the City and the water service area that comply with the GMA.
- 3.6 Prepare a color figure of the City's land use.

RH2 Deliverables: Descriptions and figures of planning data for City review and comment for the WSP.

Task 4 – Water Demands

Objective: Review historical water use and forecast future water demands of the system.

Approach:

- 4.1 Tabulate monthly totals of metered consumption for each customer class and the average number of accounts in service for each year from 2007 through 2013 based on available information provided by the City. Identify the seasonal variations in consumption for each customer class.
- 4.2 Tabulate ten (10) to twenty (20) of the largest water users and the total water use of each for the year 2013.
- 4.3 Tabulate monthly and yearly totals of water supply from each supply facility from 2007 through 2013.
- 4.4 Calculate per capita demands based on the average day demand and water system population data from 2007 through 2013.
- 4.5 Calculate the number of equivalent residential units (ERUs) within the system based on the water consumption and supply data.
- 4.6 Identify the total amount of distribution system leakage from 2007 through 2013. Calculate the three (3)-year rolling average of the distribution system leakage (DSL).
- 4.7 Tabulate total consumption of customers within each pressure zone based on the hydraulic model and the parcel-consumption database provided by the City.
- 4.8 Calculate the system average day demand based on the yearly water supply data from 2007 through 2013.
- 4.9 Estimate the system's peak day and peak hour demands.
- 4.10 Prepare a table of general fire flow requirements of each land use classification and identify buildings with the largest fire flow requirements within the service area.
- 4.11 Document the historical demands from 2007 through 2013.
- 4.12 Document the current and past efforts for water use efficiency (WUE) and their impact on water demand over the past six (6) years. Describe the water use efficiency improvements.
- 4.13 Develop annual demand projections for the first ten (10) years and projections for year twenty (20) based on projected water system population data and historical per capita demands. Demand projections shall be tabulated with and without additional water use reductions from the proposed WUE program.
- 4.14 Describe the basis for and results of the existing and future water demand evaluation.
- 4.15 Evaluate, describe, and prepare a graphic or table to demonstrate the seasonal variations in consumption patterns for each customer class.
- 4.16 Document the results of the demand analysis in summary tables and the chapter text.

- 4.17 Coordinate with the City to provide data necessary to conduct the WUE public forum. The City will conduct the meeting to satisfy the public forum requirements of the WUE program and to present the water use efficiency goals for adoption by the City Council.

RH2 Deliverables: Descriptions and tables of historic and projected demand data for City review and comment.

Task 5 – Policies and Design Criteria

Objective: Review existing policies and design criteria and recommend, as necessary, changes to these policies so that facilities can meet design standards.

Approach:

- 5.1 Review existing City standards pertaining to water system policies and criteria.
- 5.2 Identify existing policies and recommend additional or revised policies as necessary so that future City facilities meet minimum and acceptable design standards and criteria. Use DOH, Environmental Protection Agency, American Water Works Association, and standard engineering practices as the basis for identifying policies, criteria, and requirements.
- 5.3 Summarize each policy and design criteria.
- 5.4 Discuss the City's existing construction standards and include a copy in an appendix of the WSP.
- 5.5 Describe the process for responding to requests for new water service (individual and group services), including timeframes.
- 5.6 Describe the process for determining if the system's capacity is adequate to provide water service requests for new service. The process must include the determination of sufficient water rights.
- 5.7 Describe conditions of a non-technical nature that may impact the City's ability to provide new water service (e.g., annexation procedures, local ordinances, instream flow rule, etc.).
- 5.8 Describe the procedures for granting or requesting extensions of time during a project. Describe the procedures for handling disputes and appeals when requests are denied.
- 5.9 Describe policies for extensions of water service outside of current system boundaries. Describe how the policies are consistent with local and County comprehensive land use plans and development regulations.

RH2 Deliverables: Descriptions of policies and design criteria for City review and comment.

Task 6 – Water Source and Quality

Objective: Identify the City's water quality monitoring requirements and results of recent monitoring, and prepare an inventory of existing water sources and water rights.

Approach:

- 6.1 Provide a detailed description of the existing water sources and treatment.

**City of Marysville
Water System Plan Update**

**Exhibit A
Scope of Work**

- 6.2 Document the City's long-term water supply planning efforts.
- 6.3 Summarize the City's current water rights.
- 6.4 Perform a water rights evaluation that compares current water rights with existing and projected demands on a pressure zone or operating area basis.
- 6.5 Document water supply characteristics and effects from existing and projected future water use on the water quantity and quality of the bodies of water from which the City withdraws supply. Describe water supply characteristics by identifying seasonal source variability, water rights limitations, water reliability and legal constraints. Utilize existing data and studies available from the City.
- 6.6 Provide an overview of existing and future drinking water regulations, the Safe Drinking Water Act (SDWA) and the Endangered Species Act (ESA). Describe the impacts of the regulations on the City.
- 6.7 Identify the water quality monitoring requirements for the City's water system.
- 6.8 Summarize the results and compliance status of recent source and distribution system water quality monitoring.
- 6.9 Identify improvements, as needed, to comply with the water quality requirements.

RH2 Deliverables: Evaluation of existing water rights, including descriptions of existing water quality monitoring requirements and results of recent monitoring for City review and comment.

Task 7 – Pump Condition and Energy Efficiency Evaluation

Objective: Determine the baseline operation and energy efficiency of the existing pumping units at the Stillaguamish Water Treatment Plant (WTP), Stillaguamish caisson pumps, Edward Springs Well Pumps, Edward Springs Screenhouse pump, Edward Springs Booster Pump Station (BPS), Cedarcrest BPS, and Lake Goodwin Well.

Approach:

- 7.1 Collect data at the well and booster pumps to conduct a frequency vibration analysis, determine the energy signature, wire to water efficiency, and to develop a pump curve. Data will be collected with only one (1) well or pump operating at a time at each site. *It is assumed flow meters and upstream and downstream pressure can be measured or reasonably estimated at each site.* Three (3) data points will be tested at each site:
 - 1. Operating at normal flows and pressures.
 - 2. Partially throttled by a downstream valve (approximately 10 to 15 percent flow reduction from normal flows).
 - 3. Further throttled by a downstream valve (approximately 20 to 30 percent flow reduction compared to normal flows).
- 7.2 Input field data into spreadsheets. Develop pump curves and calculate energy signatures for each pump.

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- 7.3 For each pressure zone, summarize the energy signature of each supply pump, calculate the 2013 baseline total amount of water supplied, energy consumed, peak power demand, and the energy and demand charges on an annual basis.
- 7.4 Based upon the results of the frequency vibration analysis, evaluate the following.
- Status on incoming power, including voltage and current measurements.
 - Status on motor conditions, including rotors, static/dynamic eccentricities, connection faults, load related problems, etc.
 - Motor/pump bearing problems.
- 7.5 Based on the results of the frequency vibration analysis, recommend and prioritize cost-effective replacement or overhaul improvements to address deficiencies identified in the analysis. Provide planning-level cost estimates for the recommended improvements.

RH2 Deliverables: Recommendations for improving the energy efficiency of the water system and assessment of the existing condition of the pumps in the system.

Task 8 – Hydraulic Model Update and Calibration

Objective: Update and calibrate the current hydraulic model of the City's existing water system.

Approach:

- 8.1 Convert the City's existing InfoWater® hydraulic model to the WaterGEMS® modeling program and update it with recent water system improvements. Update the model with the location of existing gate valves and hydrants in the system for use in updating the unidirectional flushing program. Review the model with current water system mapping to check for consistency and completeness.
- 8.2 Prepare a preliminary hydraulic model node diagram. Coordinate with the City to review water system facilities shown in the model and update the model as necessary based on input from the City.
- 8.3 Update elevation data in the model by transferring data from electronic contours to model junction nodes using customized routines.
- 8.4 Compute pipe roughness coefficients from available pipe material and age data using routines to accomplish initial calibration.
- 8.5 Using a parcel-consumption database provided by the City and customized routines, allocate the existing (2013) demand data among the nodes in the model.
- 8.6 Using hourly tank and well data, calculate existing (2013) and six-year average (2008 to 2013) diurnal curves for the average day and peak three (3)-day period. Input diurnal curves into the hydraulic water model.
- 8.7 Update facility data into the model for supply sources, reservoirs, and pressure reducing valve (PRV) stations. Input pump curves developed under Task 7. Establish facility settings to reflect current settings and those to be used for the analyses.

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- 8.8 Perform preliminary hydraulic analyses to identify locations for field pressure and hydrant flow tests and check potential performance at each site. Prepare a template that lists field test locations and data that needs to be collected at each test location. Coordinate with the City to confirm methods and recordkeeping for field tests.
- 8.9 Attend the hydrant flow tests to confirm that the pressure and flow test objectives are met for the purpose of calibrating the hydraulic model. City staff will operate hydrants, valves, and other water system facilities as directed by RH2. RH2 will provide calibrated pitot and pressure gauges for use during the hydrant flow tests and will record the results of the tests. Operational status of facilities will be provided by City staff (in real-time or from the City's telemetry system following field testing), including flows into the system from supply sources and reservoir levels at the start and end of the tests.
- 8.10 Perform hydraulic analyses to calibrate the model from the field flow and pressure test data for the purposes of steady state and extended period hydraulic analyses.
- 8.11 Coordinate with the City to identify sources of inconsistencies between the field calibration data and the modeled results. Inconsistencies may be the result of unknown closed valves in the system or incorrect diameter of water main shown on system mapping or as-builts. Since this item is highly variable in nature, an initial allocation of twenty-four (24) hours of a water modeling specialist's time has been included for this task. If generally accepted industry standards for hydraulic model accuracy cannot be achieved within this initial allocation, RH2 will coordinate with the City to determine the next steps. This may include a scope amendment to assist the City in performing additional field flow tests and model calibration analyses.
- 8.12 Input the current land use classifications into the model and assign a general planning level fire flow requirement to each node for comparison of fire flow results. Custom routines will be utilized to transfer the data from the land use map to the model.

RH2 Deliverables: Calibrated WaterGEMS® hydraulic water model for use in steady state and extended period hydraulic analyses. Coordination with City to review accuracy of the hydraulic water model.

Task 9 – Water Supply Operational Strategy

Objective: Perform hydraulic analyses to improve the water system operational strategy based on water quality, energy efficiency, hydraulic capacity, and capital and operations and maintenance (O&M) costs.

Approach:

- 9.1 Evaluate the existing (2013) and six-year average (2008 to 2013) seasonal water supply requirements of each pressure zone.
- 9.2 Coordinate with the City to obtain estimated costs for producing water from each of the City-owned sources. Costs have been summarized previously in the Sunnyside feasibility study. Compare costs of producing water to purchasing water from the City of Everett.
- 9.3 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. The analyses will refine and build upon optimization analyses recently performed by RH2. Identify

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improvements as necessary to implement the recommended operational strategy. The analyses will consider the following elements.

- a. Source blending recommendations developed for the Sunnyside Well Treatment project.
 - b. Increase supply produced from sources owned by the City.
 - c. Energy efficiency and power demand costs based on data collected and generated under Task 7.
 - d. Capital and O&M costs.
 - e. Water supply and minimum pressure requirements for the Tulalip Tribe under the Joint Operating Agreement.
 - f. Water rights limitations for each individual source.
- 9.4 Meet with the City to discuss the results of the analyses and review the feasibility of the proposed operational strategy.
- 9.5 Revise the operational strategy per review comments from the City. Since this item is highly variable in nature, an initial allocation of sixteen (16) hours of a water modeling specialist's time has been included for this task. If an acceptable operational strategy cannot be determined within this initial allocation, RH2 will coordinate with the City to determine the next steps, which may include a scope amendment.
- 9.6 Prepare a letter report to the City documenting the results of the water supply optimization analyses.

RH2 Deliverables: Attendance at one (1) meeting with City staff. Letter report documenting the results of the water supply optimization analyses.

Task 10 – Unidirectional Flushing Program

Objective: Update the City's existing unidirectional flushing program.

Approach:

- 10.1 Perform hydraulic analyses to determine the minimum pressures and maximum flushing velocity experienced with the City's existing flushing program.
- 10.2 Coordinate with the City to identify the goals for the updated unidirectional flushing program, including maximum velocity, sensitive customers, and areas of concern.
- 10.3 Recommend improvements to the existing unidirectional flushing program to meet the established goals and to minimize flushing velocities, flushing time, and dirty water complaints.
- 10.4 Develop field map books showing flushing hydrant, closed valve, and flushing velocities for each hydrant flushing location.

RH2 Deliverables: Unidirectional flushing program field map books.

Task 11 – Water System Analyses

Objective: Evaluate each water system component to identify deficiencies and recommend improvements. Utilize the hydraulic model of the City's water system to perform pressure and fire flow hydraulic analyses.

Approach:

- 11.1 Examine each of the existing pressure zones and identify areas of low and high pressures. Include a table showing each existing zone, its maximum and minimum service elevation, and service pressures (at static conditions).
- 11.2 Calculate the quantity of water supply required for the existing and future conditions, and compare those requirements to the system's existing supply capability.
- 11.3 Identify and describe supply facility deficiencies.
- 11.4 Evaluate booster pump stations and briefly describe deficiencies.
- 11.5 Based on the requirements contained in WAC 246-290-235 and the most current DOH *Water System Design Manual*, calculate the quantity of water storage required for the existing and future system and compare those requirements to the existing storage capacity of the system. Storage analyses will be performed for the system as a whole, as well as for individual pressure zones or storage operating areas.
- 11.6 Identify and briefly describe storage deficiencies.
- 11.7 Document the hydraulic analysis criteria and hydraulic model settings for the distribution system analyses.
- 11.8 Using the hydraulic model of the water system, perform a steady state hydraulic analysis of the system simulating a peak hour demand condition with no fire flows to determine the pressures and flow distribution during this demand condition.
- 11.9 Perform a steady state fire flow analysis for each node in the system while simulating peak day demands to determine the capability of the existing system to provide adequate flows and pressures and identify existing system deficiencies.
- 11.10 Export the results of the existing system peak hour demand and fire flow analyses to a GIS shapefile for transmittal to the City.
- 11.11 Input future demand data into the hydraulic model's nodes using the results from the future water demand evaluation. Demand distribution shall be based on estimates of future growth allocations.
- 11.12 Based on the results of the existing system hydraulic analysis and identification of deficiencies, identify and input proposed water system improvements into the model.
- 11.13 Perform a steady-state fire flow analysis for each node in the system while simulating future peak day demands to check that the proposed improvements address existing system deficiencies and are sized properly to accommodate anticipated growth based on meeting the City's policies and design criteria. Repeat the analyses for the 6-year, 10-year, and 20-year projections.

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- 11.14 Prepare a table that summarizes the results of the existing system and future system fire flow analyses.
- 11.15 Identify and describe distribution system deficiencies and the results of the hydraulic analyses.
- 11.16 Evaluate and identify deficiencies for the existing water main, PRV stations, inerties, and telemetry and supervisory control system.
- 11.17 Perform an existing system, 6-year and 10-year system capacity analysis to determine the unused, available system capacity expressed in ERUs. Prepare a 6-year and 10-year projected system capacity analysis with proposed improvements. Document the criteria and results of the analyses.
- 11.18 Meet with City staff to discuss the system analyses, deficiencies, and recommended improvements.
- 11.19 Document the results of the system analysis in summary tables and the chapter text.

RH2 Deliverables: Descriptions, tables, and figures of the water system analyses for City review and comment. Attendance at one (1) meeting with City staff. GIS shapefile containing the results of the existing system peak hour demand and fire flow analyses.

Task 12 – Operations and Maintenance

Objective: Document the water system's O&M program.

Approach:

- 12.1 Document the current water staff organization and prepare an organizational chart.
- 12.2 Prepare a table listing water operations personnel, their positions, and certifications.
- 12.3 Provide a brief description of the key responsibilities of the water operations personnel.
- 12.4 Provide a list of major equipment, supplies, and chemicals used by the water system.
- 12.5 Comment on the general impacts and effects of changing water quality requirements regarding O&M responsibilities.
- 12.6 Identify safety procedures that must be followed for potential work place hazards. Incorporate the existing safety program activities and recent Labor and Industries' inspection reports.
- 12.7 Prepare a brief description of the City's existing Emergency Response Plan (ERP) and Vulnerability Assessment (VA). For security purposes, the documents will not be included in the WSP.
- 12.8 Identify procedures for keeping and compiling records and reports. Provide a general list of records on file and identify where they are filed.
- 12.9 Identify maintenance schedules for each facility and summarize the unidirectional flushing program updated under Task 10.
- 12.10 Evaluate staffing requirements and document recommendations.
- 12.11 Identify O&M improvements.

12.12 Document the O&M program in summary tables and the chapter text.

RH2 Deliverables: Descriptions and tables documenting the City's existing operations and maintenance program.

Task 13 – Capital Improvement Program

Objective: Describe and schedule improvements to address deficiencies identified in the water system analyses. Prepare planning-level cost estimates for each project identified.

Approach:

- 13.1 Briefly describe water system improvements that have been completed since the last WSP update.
- 13.2 Prepare a list of proposed water system improvements based on the results of the Water Supply Optimization Analyses prepared under Task 9 and the existing system and proposed system analyses. Briefly describe each group of related improvements and the purpose/benefit of the improvements.
- 13.3 Prepare a planning-level approximate cost estimate for each improvement based on current industry prices.
- 13.4 Coordinate with City staff to establish criteria for prioritizing and scheduling improvements. Prioritization and scheduling will consider other scheduled utility and transportation projects based on information provided by the City.
- 13.5 Schedule improvements based on the results of the prioritization. Prepare up to two (2) modified CIP schedules based on input from the City from the results of the financial analysis.
- 13.6 Prepare a table of improvements that includes an improvement identification number, a brief description of each improvement, the associated cost estimate, and the scheduling of the improvements on an annual basis for the first ten (10) years and for the twenty (20)-year planning period.
- 13.7 Describe the criteria and procedures used for prioritizing and scheduling improvements.
- 13.8 Document the CIP prioritization analyses in summary tables and the chapter text.
- 13.9 Prepare color figures of the following.
 - Proposed Water System Improvements
 - Proposed Improvements Hydraulic Profile
- 13.10 Meet with City staff to discuss the water system improvements and the proposed schedule of implementation.

RH2 Deliverables: Draft CIP tables and figures for City review and comment. GIS files containing proposed water main improvements. Attendance at one (1) meeting with City staff.

Task 14 – Cross-connection Control Plan

Objective: Document the City's existing cross-connection control plan.

Approach:

- 14.1 Review the City's existing cross-connection control ordinance and programs it has developed. Evaluate the documents and incorporate elements into the WSP necessary for consistency with regulations.
- 14.2 Describe the consequences for failing to comply with the cross-connection control ordinance.
- 14.3 Document the responsibility of each City department for implementing the program and their relationship with one another and with outside agencies.
- 14.4 Identify the primary and back-up staff positions delegated to the responsibility of organizing and implementing the cross-connection control program.
- 14.5 Identify the qualifications required for personnel working in the cross-connection control plan.
- 14.6 Document the City's approval of qualifications for cross-connection control testers and specialists.
- 14.7 Document procedures for prioritizing and conducting surveys of existing facilities to identify existing and potential cross connections.
- 14.8 Document guidelines for assessing the degree of hazard and the selection of the appropriate backflow assemblies.
- 14.9 Document standard requirements for installing and testing approved backflow assemblies.
- 14.10 Describe the recordkeeping system requirements for the cross-connection control plan.
- 14.11 Describe the methods or processes that will provide information (public education, etc.) regarding the cross-connection control program to the existing and future system customers.
- 14.12 Document procedures for responding to backflow incidents.

RH2 Deliverables: Completed Cross-connection control plan included in the WSP as an appendix.

Task 15 – Water Quality Monitoring Plan

Objective: Document the City's existing water quality monitoring requirements and procedures. Update the City's existing Coliform Monitoring Plan.

Approach:

- 15.1 Prepare a description of the water system as required by the Coliform Monitoring Plan.
- 15.2 Document source water quality monitoring requirements and procedures.
- 15.3 Document distribution system water quality monitoring requirements and procedures, including a schedule for coliform monitoring.
- 15.4 Discuss the impact of expanding the use of water supply produced by the City on the water quality monitoring requirements.

15.5 Prepare a color figure of the locations needed to meet the various monitoring requirements.

Deliverables: Descriptions and figures documenting the City's existing water quality and coliform monitoring programs for City review and comment.

Task 16 – Water Use Efficiency Program

Objective: Update the City's WUE Program and WUE goals for the water system.

Approach:

- 16.1 Evaluate the City's existing WUE Program and incorporate elements into the WSP necessary for consistency with regulations.
- 16.2 Prepare a summary of WUE planning efforts that have been completed since the WUE program was adopted.
- 16.3 Assist the City in updating WUE goals through a public process. Document how each goal was established.
- 16.4 Identify and evaluate WUE measures for appropriateness and cost-effectiveness.
- 16.5 Prepare a schedule for implementation of the WUE measures and cost estimates for each measure.

Deliverable: Descriptions documenting the City's WUE Program for City review and comment.

Task 17 – Watershed Control and Wellhead Protection Plan

Objective: Document the City's existing efforts toward watershed control and wellhead protection.

Approach:

- 17.1 Prepare a summary of the state's regulatory requirements.
- 17.2 Document the City's past efforts towards protection of its water sources, including the monitoring program the City uses to assess the adequacy of watershed and wellhead protection.
- 17.3 Document the results of the City's susceptibility assessment and the monitoring waivers that were granted.
- 17.4 Prepare a description of the watershed and an inventory, including location, hydrology, land ownership, and activities that may adversely affect source water quality. The delineation of the Stillaguamish Watershed will be based on the City's 2002 Watershed Control Program.
- 17.5 Perform delineation of the wellheads using the Calculated Fixed Radius method and document the delineation method, results, and future requirements.
- 17.6 Prepare an inventory of potential contaminant sources and activities using available databases maintained by Washington State Department of Ecology (Ecology) and the Environmental Protection Agency, and document the results of the inventory findings. The inventory will include site locations and owners/operators.

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- 17.7 Identify owners and operators of known and potential sources of water contamination, businesses, regulatory agencies and local governments, emergency response agencies, and City customers that must be notified of the City's watershed control and wellhead protection programs.
- 17.8 Document watershed control and wellhead protection measures, including ownership and relevant written agreements, and monitoring of activities and water quality.
- 17.9 Document normal system operation and a contingency plan for operating the water system in the event of contamination of one of the City's sources or other source-related emergency.
- 17.10 Document water quality trends of source water quality monitoring from past records.
- 17.11 Document implementation of the watershed control and wellhead protection program and provide recommendations.

RH2 Deliverable: Documentation of the City's Watershed Control and Wellhead Protection Plan for City review and comment.

Task 18 – Financial Analysis

Objective: The City will prepare the financial analysis for inclusion in the WSP Update. RH2 will provide coordination with the City during development of the financial analysis.

Approach:

- 18.1 Coordinate with the City during the project to provide information in support of the financial analysis chapter.
- 18.2 Attend one (1) meeting with City staff to review draft financial analysis results before finalizing the Financial Chapter.

RH2 Deliverable: Attendance at one (1) meeting with City staff.

Task 19 – Executive Summary

Objective: Prepare an executive summary to describe the key elements of the WSP.

Approach:

- 19.1 Identify the purpose of the WSP and summarize the major system characteristics and significant changes that have occurred since the previous WSP was completed.
- 19.2 Briefly describe the key issues in the WSP.

RH2 Deliverable: Draft executive summary chapter for City review and comment.

Task 20 – Appendices

Objective: Prepare miscellaneous appendices for inclusion in the WSP.

Approach:

- 20.1 Obtain a State Environmental Policy Act (SEPA) Checklist and Determination of Non-Significance (DNS) from the City to include in the appendices.

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- 20.2 Obtain from the City service area and intertie agreements and include in the appendices.
- 20.3 Obtain copies of applicable City resolutions/ordinances and include in the appendices.
- 20.4 Include copies of Water Facilities Inventory (WFI) forms.
- 20.5 Include copies of water right certificates and permits.
- 20.6 Include a copy of the most recent Consumer Confidence Report.
- 20.7 Include a copy of City construction standards.
- 20.8 Include copies of water system facilities data, consistency statement checklists, and agency review comments.

Deliverables: Miscellaneous appendices for inclusion in the WSP.

Task 21 – Finalize, Print and Present Draft WSP

Objective: Prepare a final draft of the WSP and submit it to review agencies and adjacent water purveyors.

Approach:

- 21.1 Develop a cover format that includes the WSP name and revision date.
- 21.2 Transmit electronic copies of the draft WSP documents to the City for review and comment.
- 21.3 Revise the WSP based on City review comments.
- 21.4 Attend one (1) meeting to present the completed WSP to City staff, City Council, and the public.
- 21.5 Bind the final WSP documents and print up to ten (10) sets of the WSP and color figures.
- 21.6 Create an electronic PDF document, including all chapters, appendices and figures of the WSP. The electronic WSP will contain hyperlinks and an organizational format that will be fully functional. Provide up to five (5) copies of the electronic plan on CD format.
- 21.7 Submit the final WSP to adjacent water systems for their review and comment.
- 21.8 Submit the final WSP to the County and DOH for their review.

Rh2 Deliverables: Up to ten (10) sets of the final WSP in three-ring binder format and five (5) copies in electronic PDF format on CD. Attendance at one (1) meeting to present the final draft WSP to City staff, City Council, and the public.

Task 22 – DOH and Agency Review Revisions

At the completion of Tasks 1 through 21, the WSP will be in a final format, ready for review by the regulatory agencies and adjacent water purveyors. The number of comments, number of meetings, and amount of required WSP modifications from review by the regulatory agencies and adjacent water purveyors are difficult to predict. Therefore, RH2 will prepare a separate Scope of Work and Fee Estimate to address review comments, review meetings, and final WSP modifications upon receipt of all review comments from the County, DOH, Ecology, and adjacent water systems.

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At the completion of the project, a copy of the computer files of the WSP Word documents, water model, and AutoCAD® and GIS figures will be provided to the City.

City of Marysville Water System Plan Update Data to be Provided by the City

The following list contains the information and data to be provided by the City of Marysville (City) that is needed to update the City's Water System Plan (WSP). All available resources from previous planning work will be utilized to minimize the level of effort necessary. The list below is organized according to the Scope of Work activities.

Scope of Work/Information Needed	Priority	Notes	Status/ Delivered
Activity 2 – Introduction and Existing Water System Description			
1. Reservoir information that includes reservoir name, as-builts, location, year constructed, material, reservoir floor elevation, overflow elevation, diameter, ground elevation, operating levels (pump start level(s) for filling reservoir and pump stop level), fill pipe diameter, draw pipe diameter, and description of operation and control.	H		
2. Pressure reducing station data that includes station name, as-builts, location, main line and by-pass control valve size, normal inlet pressure, outlet pressure set points, operational priority (lead, lag, second lag, etc.), ground elevation, and pressure relief valve size and set point (if relief valve is included).	H		
3. List of check valves and zone valves (closed isolation valves between pressure zones) in the distribution system.	H		
4. Intertie information that includes adjacent system name, as-builts, location, water main size, control valve size and model number, and any other facility information.	H		
5. Telemetry and supervisory control information that includes manufacturer and year of telemetry system, type of communications link (radio or phone), facilities monitored at master telemetry unit, facilities with remote telemetry units.	H		
6. Water treatment information that includes location of treatment facilities, as-builts, type of treatment (disinfection, fluoridation, filtration, etc.), chemicals used and concentrations, method of metering, initial dosage amounts, and capacity of mixing or holding tanks.	H		

Scope of Work/Information Needed	Priority	Notes	Status/ Delivered
7. Booster pump station data that includes pump station name, as-built, location, year constructed, number of pumps, pump curves (or pump manufacturer and model number, pump serial number and impeller diameter), motor horsepower, ground elevation, normal pumping rate, and description of operation and control.	H		
8. Well data that includes well name, well log, location, year constructed, pump curve (or pump manufacturer and model number, pump serial number and impeller diameter); motor horsepower, well casing diameter, well column diameter, ground elevation, well depth, screen depth range, pump intake depth, normal pumping rate, static water level, water level at normal pumping rate, and description of operation and control.	H		
9. Copy of most recent Department of Health (DOH) Sanitary Survey.	H		
10. Copy of GIS files of the base map, aerial photo, existing water system (including all water main, sources, pumping and storage facilities, gate and check valves, and hydrants), and contours.	H		
Activity 3 – Land Use and Population			
1. Copy of the City's Comprehensive (Land Use) Plan.	H		
2. Summary of City's efforts and involvement in regional water system planning.	L		
3. Identify on a map the areas where growth is expected to occur.	M		
4. List of planned developments. Provide name of development, type of development, number of units and development schedule.	M		
5. Copy of GIS file showing existing retail and future service area boundaries.	H		
6. Copy of GIS file showing existing and future land use.	H		
Activity 4 – Water Demands			
1. How often are customer meters read (monthly, every other month, etc.)?	H		
2. Hourly and daily reservoir level records (telemetry data, circular charts, data sheets, etc.) from each storage facility for 2007 through 2013 (to be used to determine the system's peaking factors).	H		

Scope of Work/Information Needed	Priority	Notes	Status/ Delivered
3. Hourly and daily water production records from each source of supply for 2007 through 2013 (to be used to determine the system's peaking factors).	H		
4. Monthly water production totals from each source of supply from 2007 through 2013.	H		
5. Monthly (or bi-monthly) metered water consumption totals for each customer class from 2007 through 2013.	H		
6. Hourly or daily water consumption data for customer meters for 2013, where available.	H		
7. Average number of connections for each month for each customer class from 2007 through 2013.	H		
8. Total number of multi-family units served in 2007 through 2013.	H		
9. List of customers (approximately 10 to 20) that used the most water in 2013 (as measured by individual meters), customer address and amount of consumption of each customer for the year.	H		
10. List of buildings with the largest fire flow requirements in the service area (provide at least three in each pressure zone). Provide name of building, address and fire flow requirement.	M		
11. General level of service fire flow requirements and duration for all land use classifications, such as single-family, multi-family, commercial, industrial, etc.	M		
12. Is water usage for construction projects, fire department activities and water main flushing recorded? If so, provide total annual amounts from 2007 through 2013.	H		
13. Database of annual totals of metered water consumption data for each meter, including address and parcel number, if available.	H		
14. Copy of sample letter and certificate of water availability that is issued prior to receiving a building permit.	M		

Scope of Work/Information Needed	Priority	Notes	Status/ Delivered
Activity 5 – Policies and Design Criteria			
1. Copy of water system policies and design criteria not contained in the previous WSP.	L		
2. Describe the process for responding to requests for new water service (individual and group services), including timeframes.	L		
3. Describe the process for determining if the system's capacity is adequate to provide water service to requests for new service. The process must include the determination of sufficient water rights.	L		
4. Describe any conditions of a non-technical nature that may impact the ability to provide new water service (e.g., annexation procedures, water rights issues, local ordinances, etc.).	L		
5. Describe the procedures for granting or requesting extensions of time during a project. Describe the procedures for handling disputes and appeals when requests are denied.	L		
6. Describe policies for extensions of water service outside of boundaries. Describe how the policies are consistent with the local and county comprehensive (land use) plan, and development regulations.	L		
Activity 6 – Water Source and Quality			
1. Copy of water rights permits, certificates and other related information for all sources.	M		
2. Copy of any recent reports and studies for the sources of supply (including the Wellhead Protection Plan, Watershed Control Plan and regional water supply studies).	M		
3. Copy of DOH Susceptibility Study.	M		
4. Copy of past lead and copper monitoring results (2007 through 2013).	M		
5. Copy of asbestos monitoring results (2007 through 2013).	M		
6. Copy of source water quality monitoring results (2007 through 2013) for volatile organic chemicals, synthetic organic chemicals, inorganic chemical and physical substances, and radionuclides.	M		

Scope of Work/Information Needed	Priority	Notes	Status/ Delivered
7. Summarize the results of past (2007 through 2013) coliform monitoring. Indicate if monitoring results indicated levels above the regulatory limits. For each situation where the regulatory requirements were not met, describe the source of the problem and the follow up procedures that corrected the problem.	M		
8. Summarize the results of past (2007 through 2013) disinfectant concentration monitoring. Indicate if monitoring results did not meet the regulatory requirements. For each situation where the regulatory requirements were not met, describe the source of the problem and the follow up procedures that corrected the problem.	M		
9. Summarize the results of past (2007 through 2013) disinfectants and disinfection by-product monitoring and Initial Distribution System Evaluation.	M		
10. Summarize the method of disinfection and initial dosage at each source (2007 through 2013).	M		
11. Provide the initial dosage of fluoride at each source.	M		
12. Copy of Coliform Monitoring Plan.	M		
13. List of dirty water complaints (2007 through 2013), including date and location of each complaint.	M		
14. Copy of the most recent Consumer Confidence Report (CCR).	M		
15. Copy of 2007 through 2013 Water Quality Monitoring Reports (WQMR) from DOH that lists the specific monitoring requirements for the City's system.	M		
Activity 7 – Pump Condition and Energy Efficiency Evaluation			
1. Electric rate schedules for each pumping facility.	H		
Activity 8 – Hydraulic Model Update and Calibration			
1. Copy of GIS file showing location of existing gate valves, check valves, and hydrants in the system.	H		
2. As-builts for recent water system improvements not contained in the existing hydraulic model.	H		

Scope of Work/Information Needed	Priority	Notes	Status/ Delivered
Activity 9 – Water Supply Operational Strategy			
1. Copy of Sunnyside feasibility study that includes estimated costs of producing water from each of the City-owned sources.	H		
2. Reports documenting the Sunnyside Well Treatment project and Highway 9 Well project including source blending recommendations.	H		
Activity 10 – Unidirectional Flushing Program			
1. Copy of existing unidirectional flushing program.	M		
Activity 11 – Water System Analyses			
1. List of known low or high water pressures areas. Provide address and recorded pressure for each.	M		
2. List of known water system deficiencies and unsuitable pipe materials.	M		
3. List of past (2007 through 2013) water main breaks. Provide address and date that each occurred.	L		
4. List of facilities that have emergency power supply connections or stand-by emergency generator sets.	L		
5. Normal operating range of each reservoir (water elevation that well, intertie or control valve is called to fill reservoir or the normal drawdown in each reservoir).	H		
Activity 12 – Operations and Maintenance			
1. Personnel organization chart.	L		
2. Brief description of the major responsibilities for any new staff positions shown on the organizational chart.	L		
3. Updated list of all operators and their certifications.	L		
4. Provide a list of all major equipment, supplies and chemicals used by the water system. Provide a list of the service representatives for major water system components and chemical suppliers.	L		
5. Provide a list of safety and first aid equipment owned by the system and identify safety training the personnel have and are required to have.	L		
6. Maintenance schedules for each facility.	L		
7. Staffing time for preventive maintenance of facilities and equipment.	L		
8. Staffing time for operation tasks.	L		

Scope of Work/Information Needed	Priority	Notes	Status/ Delivered
9. Identify procedures for keeping and compiling records and reports; provide a list of records that are on file; and identify where the records are filed.	L		
10. Procedures for testing the accuracy of water meters and identifying the frequency of tests. Indicate most recent calibration of source and customer meters.	L		
11. Indicate approximate age of source and customer meters.	L		
12. List of the Utilities Division safety program activities and recent Labor and Industries' inspection reports.	L		
Activity 13 - Capital Improvement Program (CIP)			
1. List of desired water system improvements not contained in previous CIP.	M		
2. List of projects completed since the last WSP. List can be descriptive or map based.	M		
3. Copy of the City's most recent six-year Capital Facilities Plan. If not available, provide a list of all road and utility improvements currently planned by the City for the next six years to assist in coordinating the timing of water improvements with other capital improvements.	M		
Activity 14 - Cross-Connection Control Plan			
1. Copy of existing cross-connection control ordinance/resolution.	L		
2. List of known backflow assemblies installed in the system.	L		
3. Copy of latest cross-connection control program summary report that is submitted annually to DOH.	L		
Activity 15 - Water Quality Monitoring Plan			
1. Copy of existing Coliform Monitoring Program.	M		
2. Sampling rotation schedule for coliform monitoring, if not contained in coliform monitoring program.	M		
3. List of water source sampling sites. Indicate source of sample.	M		
4. Copy of monitoring waivers and related DOH correspondence.	M		

Scope of Work/Information Needed	Priority	Notes	Status/ Delivered
Activity 16 – Water Use Efficiency Program			
1. Copy of Water Use Efficiency Program.	H		
2. Has leak detection been performed in the distribution system in the past? If so, indicate date, description of areas tested and findings. Provide a copy of the leak detection report.	M		
3. List of current water use efficiency goals.	H		
4. Describe what, if any, previous water use efficiency efforts will be discontinued. Identify why continuation of these efforts would be ineffective or describe that the program had a prescribed end date or savings level.	M		
5. Describe any available or potential sources of reclaimed water. Identify opportunities for the use of reclaimed water (i.e. irrigation for parks or schools, construction purposes or street cleaning) and an estimated annual volume for each use.	M		
6. Amount budgeted for each individual water use efficiency measure that is part of the water use efficiency program.	M		
Activity 15 – Watershed Control and Wellhead Protection Plan			
1. Summarize the City's past efforts towards protection of its water sources.	L		
2. List of known and potential water contaminant sources located within the watershed/wellhead protection areas.	L		
3. Identify present and past land uses (last 10 to 20 years) and proposed land uses that might pose a threat to the water sources.	L		
Activity 17 – Financial Analysis			
1. Copy of Financial Analysis chapter for inclusion in the WSP.	L	To be provided at a later date.	
Activity 20 – Appendices			
1. SEPA Checklist (to be provided upon completion of final draft WSP).	L	To be provided at a later date.	
2. Copy of current service area agreement. This was likely prepared during the development of the County's <i>Coordinated Water System Plan</i> .	L		
3. Copy of water resolutions or ordinances not specifically identified under other activities above.	L		

Scope of Work/Information Needed	Priority	Notes	Status/ Delivered
4. Copy of most recent Water Facilities Inventory (WFI) form.	H		
5. Copy of standard maintenance logs and forms used.	L		
6. Copy of intertie agreements.	M		
7. Copy of the City's construction standards.	L		

EXHIBIT C

**City of Marysville
Water System Plan Update
Estimate of Time and Expense**

Task 1	Data Collection and DOH Coordination	\$ 4,038
Task 2	Introduction and Existing Water System Description	\$ 13,612
Task 3	Land Use and Population	\$ 6,464
Task 4	Water Demands	\$ 12,457
Task 5	Policies and Design Criteria	\$ 2,748
Task 6	Water Source and Quality	\$ 12,925
Task 7	Pump Condition and Energy Efficiency Evaluation	\$ 18,393
Task 8	Hydraulic Model Update and Calibration	\$ 32,432
Task 9	Water Supply Operational Strategy	\$ 20,531
Task 10	Unidirectional Flushing Program	\$ 10,337
Task 11	Water System Analyses	\$ 27,708
Task 12	Operations and Maintenance	\$ 4,914
Task 13	Capital Improvement Program	\$ 15,617
Task 14	Cross-connection Control Plan	\$ 2,034
Task 15	Water Quality Monitoring Plan	\$ 4,702
Task 16	Water Use Efficiency Program	\$ 3,488
Task 17	Watershed Control and Wellhead Protection Plan	\$ 976
Task 18	Financial Analysis	\$ 3,342
Task 19	Executive Summary	\$ 1,920
Task 20	Appendices	\$ 1,637
Task 21	Finalize, Print and Present Draft WSP	\$ 12,546
Project Total		\$ 218,217

**EXHIBIT D
RH2 ENGINEERING, INC.
SCHEDULE OF RATES AND CHARGES**

2014 HOURLY RATES

CLASSIFICATION		RATE	CLASSIFICATION		RATE
Professional	IX	\$209.00	Technician	IV	\$135.00
Professional	VIII	\$209.00	Technician	III	\$127.00
Professional	VII	\$201.00	Technician	II	\$95.00
			Technician	I	\$90.00
Professional	VI	\$186.00			
Professional	V	\$177.00	Administrative	V	\$126.00
Professional	IV	\$167.00	Administrative	IV	\$105.00
			Administrative	III	\$91.00
Professional	III	\$157.00	Administrative	II	\$75.00
Professional	II	\$147.00	Administrative	I	\$63.00
Professional	I	\$135.00			

IN-HOUSE SERVICES

In-house copies (each)	8.5" X 11"	\$0.09	CAD Plots	Large	\$25.00
In-house copies (each)	8.5" X 14"	\$0.14	CAD Plots	Full Size	\$10.00
In-house copies (each)	11" X 17"	\$0.20	CAD Plots	Half Size	\$2.50
In-house copies (color) (each)	8.5" X 11"	\$0.90	CAD System	Per Hour	\$27.50
In-house copies (color) (each)	8.5" X 14"	\$1.20	GIS System	Per Hour	\$27.50
In-house copies (color) (each)	11 X 17"	\$2.00	Technology Charge	2.5% of Direct Labor	
			Mileage	Current IRS Rate	

OUTSIDE SERVICES

Outside direct costs for permit fees, reports, maps, data, reprographics, couriers, postage, and non-mileage related travel expenses that are necessary for the execution of the project and are not specifically identified elsewhere in the contract will be invoiced at cost.

All Subconsultant services are billed at cost plus 15%.

CHANGES IN RATES

Rates listed here are adjusted annually. The current schedule of rates and charges is used for billing purposes. Payment for work accomplished shall be based on the hourly rates and expenses in effect at the time of billing as stated in this Exhibit.