CITY OF MARYSVILLE AGENDA BILL

EXECUTIVE SUMMARY FOR ACTION

CITY COUNCIL MEETING DATE: October 13, 2014

AGENDA ITEM: Supplemental Professional Services Agreement with Murray, Smith & Associates for Professional Engineering Services	
PREPARED BY: Patrick Gruenhagen, Project Manager DEPARTMENT: Engineering	DIRECTOR APPROVAL:
ATTACHMENTS: • Professional Services Agreement Supplement No. 3	
BUDGET CODE: 40220594.563000 W1302	AMOUNT: $47,301.00

SUMMARY:

The City contracted with Murray, Smith & Associates (MSA) in the spring of 2013 to initiate preliminary design and permitting for the Sunnyside Water Treatment Plant Project. The City executed Supplement 1 to its agreement with MSA in December 2013 and followed with Supplement 2 in April of this year — for final design of the project and pilot testing/blending analysis of the Highway 9 source, respectively.

Supplement 3 to the original agreement, as attached, is intended to establish the framework for certain refinements which will add value to the treatment plant design. The first involves a change to the building's layout that would bring about the need for further architectural, mechanical, and electrical design — to support use of the second story for storage and/or temporary occupied use. This, along with the incorporation of a "multipurpose room" (already complete), will help to maximize possible "dual use" options for the facility – maintaining flexibility to utilize these spaces for training, conferences, or satellite emergency operations.

By contrast, the second significant design revision focuses on the technical operation of the Plant, specifically its ability to introduce a finely-tuned "blend" of JOA (Everett) and treated well water into the City's water distribution system. This will be accomplished through retrofit of Sunnyside Well 2 with what is known as a "variable frequency drive" (VFD) – a device that will allow the City to more precisely (and efficiently) control delivery of well water to the Plant. In light of the anticipated composition of "straight" treated well water, and potential aesthetic concerns relating to water hardness, the added flexibility afforded by a VFD will prove beneficial to the long-term operation of the Plant.

Presently, design for the new treatment plant is approaching 90% completion. The City is actively coordinating with the Department of Health to seek and obtain its approval to move forward with construction, which is scheduled to begin this coming January.

RECOMMENDED ACTION: Staff recommends that Council Authorize the Mayor to sign and execute Professional Services Agreement Supplement No. 3 in the amount of $47,301.00 with Murray, Smith & Associates, Inc.

SUPPLEMENTAL AGREEMENT NO. 3
TO
PROFESSIONAL SERVICES AGREEMENT
BETWEEN CITY OF MARYSVILLE
AND
MURRAY, SMITH & ASSOCIATES, INC.

This Supplemental Agreement No. 3 is made and entered into on the ____ day of October, 2014, between the City of Marysville, hereinafter called the "City" and Murray, Smith & Associates, Inc., hereinafter called the "Consultant."

WITNESSETH THAT:

WHEREAS, the parties hereto have previously entered into an Agreement for the Sunnyside Well Filtration Project, hereinafter called the "Project," said Agreement being dated April 8, 2013; and

WHEREAS, both parties desire to supplement said Agreement, by expanding the Scope of Services to provide for additional design services for a new water treatment plant and a related disinfection investigation, and to amend the total amount payable for this Agreement,

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

Each and every provision of the Original Agreement for Professional Services dated April 8, 2013 shall remain in full force and effect, except as modified in the following sections:

1. Article II of the Original Agreement, "SCOPE OF SERVICES", shall be supplemented to include the Scope of Services as described in Exhibit A3, attached hereto and by this reference made part of this Supplemental Agreement No. 3.

2. Article IV of the Original Agreement, "OBLIGATIONS OF THE CITY", Paragraph IV.1 Payments, Section (a), the second sentence is amended to include the additional Consultant fee of $47,301.00 and shall read as follows: "....shall total payment under this agreement exceed $695,664.00."

The Total Amount payable to the Consultant is summarized as follows:

Original Agreement	$353,338.00
Supplemental Agreement No.1	$258,833.00
Supplemental Agreement No.2	$36,192.00
Supplemental Agreement No.3	$47,301.00
Grand Total	$695,664.00

3. Article III, Section III.3 of the Original Agreement, Term is amended to add that the parties agree to extend the term of the agreement to terminate at midnight February 28, 2015.

IN WITNESS WHEREOF, the parties hereto have executed this SUPPLEMENTAL AGREEMENT NO. 3 as of the day and year first above written.

CITY OF MARYSVILLE

By:_____
Jon Nehring, Mayor

MURRAY, SMITH & ASSOCIATES

By:_____
Its Principal Engineer
Thomas C. Lindberg

ATTEST/AUTHENTICATED:

_____
City Clerk

APPROVED AS TO FORM:

_____
City Attorney

MSA

EXHIBIT A-3

ENGINEERING SERVICES
FOR
ADDITIONAL FINAL DESIGN ELEMENTS
HIGHWAY 9 WELL DISINFECTION EVALUATION
FOR
SUNNYSIDE WELLS TREATMENT FACILITIES PROJECT
CITY OF MARYSVILLE, WA

BACKGROUND

Murray, Smith & Associates, Inc. (MSA) has developed the following modifications to the original scope of work and fee estimate for engineering design for the City of Marysville Sunnyside Well Treatment Facility at the request of the City. These additional tasks include:

- Task 1 – Additional Design Elements for Sunnyside Well Treatment Facility
- Task 2 – Highway 9 Well Disinfection Evaluation

SCOPE OF WORK

Task 1 – Additional Design Elements

The City and MSA entered into Agreement for preliminary design of the Sunnyside Well Treatment Facility on April 8, 2013. Subsequent to this, the parties executed Supplement No. 1 on December 9, 2013, for the purposes of carrying the design forward to 100% completion. Additional design elements, outside the original scope of work, are required to support the project as it has developed over the past few months. These additional tasks include:

- Additional project management to reflect the extension of final design timeline of the project;
- Design of Well 2 pump variable frequency drive;
- Design of Treatment Facility building 2nd floor as an occupied space;
- Design of Treatment Facility building fire sprinkler and alarm systems

1.1- *Additional Project Management – Final Design*

Work under this subtask includes additional project management services required due to the extension of length of the design phase of the project to accommodate additional design elements of the project. Bid ready documents were originally scheduled to be prepared by July 2014. The most current schedule shows that bid ready documents will be prepared by November 2014.

1.2 –*Design of Well 2 Pump Variable Frequency Drive*

Following the completion of pilot study and blending evaluation studies for the Sunnyside Wells, completed during the design phase, it became apparent that the City would benefit from a broad

range of control capabilities for the blending of groundwater and surface water sources at the new treatment facility. Toward this end, additional design will be undertaken to equip the existing Sunnyside Well 2 pump with a variable frequency drive (VFD), to be located within the existing well house. Specific design elements include the following:

- Design plans and specifications for one (1) new VFD suitable for installation with the Well 2 pump.
- Design plans and specifications for new Well 2 pump motor that will be compatible with the proposed VFD.
- Design plans and specifications of HVAC improvements to ensure adequate air flow to/from the VFD and a proper environment is maintained within the room housing the VFD.
- Design and specification of architectural and structural improvements to the existing Well House in order to accommodate the new VFD and proposed HVAC improvements.
- Updating the well supply hydraulic system and pump curves to ensure proper operation of the two well pumps in parallel.
- Integration of the VFD into the new Sunnyside Well Treatment Facility control system description and P&ID.

1.3 – *Design of Treatment Facility Building 2nd Floor as Business Class Occupancy*

During the design process, the City determined that it would be desirable to utilize space located above the proposed multi-purpose room in the Treatment Facility building — originally designed and classified as an unoccupied space — for storage and temporary occupied use. This change of use requires additional architectural, mechanical and electrical design to ensure adequate lighting, as well as HVAC design considerations to ensure consistency with the proposed occupancy requirements.

1.4 – *Design of Treatment Facility Building Fire Sprinkler and Alarm Systems*

In accordance with comments received from the Fire Marshall during design review, the City has chosen to move forward with design and installation of an automatic fire sprinkler and alarm system for the Treatment Facility building. MSA and subconsultant Casne Engineering will prepare performance-based designs and specifications for these systems.

Task 2 – Highway 9 Well Disinfection Evaluation

Background:

In summer 2013, MSA's team completed well capacity pump testing and a raw water blending evaluation of the Highway 9 Well water with the Sunnyside Well sources to develop the pilot-testing protocol for the Sunnyside Well source. Bench scale testing at the time indicated that treatment of the Highway 9 Well water may be feasible with similar treatment technology to that being pursued for the Sunnyside Wells.

At the same time, MSA also evaluated three production alternatives for Highway 9 Well source which included a) the construction of a dedicated treatment facility at the Highway 9 Well site,

b) conveyance of Highway 9 Well water to the treatment facility planned at the Sunnyside Wells site, and c) pursuit of approval for a change in the point of withdrawal of the Highway 9 Well water right (from its existing location at Highway 9 to the Sunnyside site). The evaluation concluded that on-site treatment at the Highway 9 Well site was the most preferable and cost-effective of the three alternatives. The first step toward pursuing treatment at Highway 9, as with Sunnyside, involved completion of a treatment pilot study for the existing well source.

Accordingly, a pilot study at the Highway 9 Well site was completed in June 2014, with positive results confirming that treatment was feasible with similar treatment technology being pursued for the Sunnyside Wells.

In order to further evaluate the viability of the Highway 9 well as a potential source for drinking water, the City must now assess the degree to which disinfection contact time can be met prior to the first customer connection in the distribution system. This is the next step in determining the feasibility of providing treatment for the Highway 9 Well. The subtasks below outline the work that must be undertaken to evaluate contact time requirements for the Highway 9 Well.

2.1 - *Data Request*

Prepare a list of data needed for the project, submit to the City, and coordinate with the City during the data collection process. This includes preparing additional lists of data needed for the project, as necessary.

2.2 - *Review Data and Information*

Review data and information provided by the City and extract relevant information for the project. This will include:

- Gather and review existing mapping, design drawings, record drawings, engineering reports and other data related to the Highway 9 Reservoir and Well site, facilities and adjacent distribution system.
- Review of existing water distribution piping, valving and reservoir operation, including available SCADA data.
- Review proposed future reservoir plans.
- Review of existing site access, security provisions, and easements.

2.3 - *Desktop CT Calculations*

Because a positive bacteriological sample was observed several years ago at the Highway 9 Well, the Department of Health (DOH) requires 4-log virus disinfection (CT = 6 mg/L-min for groundwater) be achieved prior to the City's first customer. MSA will perform spreadsheet-based calculations to determine the CT that could likely be achieved in the future Highway 9 treatment plant, considering contact time within pipelines downstream of the point of chlorination, filter vessel, finished water piping, existing and future Highway 9 reservoirs (with modifications), and distribution system piping prior to the City's first customer.

MSA will also evaluate and determine a disinfection CT that could be achieved with modifications to the Highway 9 Well so that it could be used as an emergency source prior to implementing treatment improvements for the well.

Assumptions:

Conservative estimates of the contact time and chlorine residuals within the future Highway 9 treatment plant and associated pipes will be developed based on a similar configuration of the treatment facilities at the Sunnyside Well Treatment Facility.

City Responsibilities:

1. Provide all available record drawings for City's facilities, available SCADA data, and other requested data.
2. Provide Highway 9 site plan of current facilities in AutoCAD format.

MSA Deliverables:

1. Electronic copy of formal "Request for Information"
2. Results of Desktop CT Calculations analysis (spreadsheet format).

EXHIBIT B-3
SUNNYSIDE WELLS TREATMENT FACILITIES
CITY OF MARYSVILLE
PROPOSED FEE ESTIMATE

TASK	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Admin [illegible]	Total Hours	ESTIMATED FEES MSA Labor	Sub	MSA Expenses	Total
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	DKB					
Task 1 - Additional Design Elements												
1.1 Project Management - Final Design Schedule Extension (3 months)	1		9	3			1	**14**	$ 2,000	$ 1,531	$ 14	$ 3,545
1.2 Design of Well No. 2 VFD	1	2	4	32	4	8		51	$ 6,910	$ 9,610	$ 180	$ 16,699
1.3 Design Arch/Mech/Elect elements for 2nd Floor of Treatment Facility	2		14	28	24	12		**80**	$ 10,312	$ 3,661	$ 273	$ 14,246
1.4 Design Fire Sprinkler/Alarm systems	1	4	4	12	4	4		29	$ 3,974	$ 3,661	$ 343	$ 7,978
Task Subtotal	**5**	**6**	**31**	**75**	**32**	**24**	**1**	**174**	**$ 23,196**	**$ 18,462**	**$ 810**	**$ 42,468**
Task 2 - Highway 9 Treatment Disinfection Evaluation												
2.1 Data Request			1	1				**2**	$ 284	$ -	$ 2	$ 286
2.2 Review Data and Information			1	2	4			7	$ 846	$ -	$ 7	$ 853
2.3 Desktop CT Calculations		8	8	8			2	26	$ 3,668	$ -	$ 26	$ 3,694
Task Subtotal	**0**	**8**	**10**	**11**	**4**	**0**	**2**	**35**	**$ 4,798**	**$ -**	**$ 35**	**$ 4,833**
TOTAL	**5**	**14**	**41**	**86**	**36**	**24**	**3**	**209**	**$ 27,994**	**$ 18,462**	**$ 845**	**$ 47,301**