RESOLUTION NO. 2015-3210

A RESOLUTION TO AUTHORIZE THE CITY MANAGER PRO TEM TO ENTER INTO A PROFESSIONAL SERVICES AGREEMENT WITH MURRAY SMITH AND ASSOCIATES TO COMPLETE THE UPDATE TO THE WATER MASTER PLAN IN THE AMOUNT OF $296,343.00.

RECITALS:

1. The City of Newberg's existing Water Master Plan is over ten years old. The Master Plan should be updated every ten years.

2. The Master Plan will help staff determine the needs of the City's water system for the next 20 years.

3. The City advertised the project in the Daily Journal of Commerce and received four qualified proposals through the Request for Proposals process.

4. Murray Smith and Associates was selected as the most qualified consultant per ORS. 279C.110.

5. Murray Smith and Associates submitted a detailed proposal outlining the scope of work with a reasonable cost breakdown included in Exhibit "A" and by this reference incorporated.

THE CITY OF NEWBERG RESOLVES AS FOLLOWS:

1. The City Council, acting as contract review board for the City, does hereby authorize the City Manager Pro Tem to enter into a Professional Services Agreement with Murray Smith and Associates to complete the update to the Water Master Plan in the amount of $296,343.00.

2. The City Manager Pro Tem is authorized to amend the Professional Services Agreement up to ten (10) percent of the original contract amount.

- **EFFECTIVE DATE** of this resolution is the day after the adoption date, which is: August 18, 2015.

ADOPTED by the City Council of the City of Newberg, Oregon, this 17th day of August, 2015.

Sue Ryan, City Recorder

ATTEST by the Mayor this 19th day of August, 2015.

Bob Andrews, Mayor

Scope of Work - Engineering Services for:

City of Newberg
Water Master Plan

This scope of work details services to be provided to the City of Newberg for the Water Master Plan by consultants Murray, Smith and Associates, Inc. (MSA) with sub-consultants GSI Water Solutions, Inc. (GSI) and Galardi Rothstein Group. Unless specifically noted under each task, all deliverables shall be provided in electronic format.

Task 1 - Project Management

Provide overall management and coordination for the project, including:

- Project meetings - schedule, prepare for and conduct project kick-off meeting and up to one additional meetings, as required, with City staff.
    - For estimating purposes, it is assumed that one meeting will be in Newberg and one meetings will be at MSA's Portland office. Two MSA project staff are assumed to be present at each meeting.
- Project schedule and budget management
- Quality control/quality assurance (QA/QC) of deliverables
- Project team communication and progress reporting
- Preparing and submitting monthly invoices

Task 2 – Stakeholder Involvement

Subtask 2.1 – Stakeholder Involvement Plan

MSA will assist City in identifying key components of the water master planning process to be presented to Technical Advisory and Citizen Advisory Committees to be established by the City. The stakeholder involvement plan will include these key components and related reporting milestones, overall project goals and objectives and a list of stakeholders.

It is assumed that the City will facilitate or otherwise lead the stakeholder involvement process, with support from MSA. The City will provide meeting rooms and advertisement for stakeholder involvement workshops.

Subtask 2.2 – Technical Advisory Committee Meetings

It is understood that the City will establish a Technical Advisory Committee, consisting primarily of City staff. This committee will provide input at critical decision points in the

plan development process and review of major milestone deliverables. For budgeting purposes, it is assumed that MSA will attend meetings and prepare agendas, presentation materials, and meeting minutes for three committee meetings.

Subtask 2.3 – Citizen Advisory Committee Meetings

It is understood that the City will establish a Citizen Advisory Committee made up of interested residents of the City, similar to the standing Rate Review Committee currently in place. This committee will provide review and input for key milestone deliverables in the plan. For budgeting purposes, it is assumed that MSA will attend meetings and prepare agendas, presentation materials, and meeting minutes for three committee meetings.

Subtask 2.4 – Stakeholder Involvement Contingency

As the Stakeholder Involvement Plan is developed, and as the Plan progresses, the City may request that additional committee meetings be scheduled to gather additional input, review, or comment. This subtask includes a contingency budget of $7,500 for the purpose of conducting additional meetings, if requested.

Task 3 – Data Collection and Review

Provide the City with a written data request, review items provided and request clarification of relevant details. Items requested are anticipated to include:

- Documentation of existing water facility locations, functions and key hydraulic parameters such as overflow elevations and level set points
- Current hydraulic model
- GIS-based water facility inventory (piping, pumps, reservoirs, well locations, etc.)
- GIS-based parcel, topographic, road, stream and other basemapping data
- GIS-based zoning and land use data
- Existing planning documents related to water system facilities or anticipated growth within the utility service area, including, previous water master plan, TP Facilities Plan, and Springbrook Master Plan
- Water production and customer billing data
- Overview of current operating procedures and routine maintenance schedule

Task 4 – Water System Description

This task is intended to set the context for the subsequent water system analysis. The water system description is anticipated to include, at a minimum:

- System background
- Current and future water service area description and boundary definition
- Existing pressure zone characterization and boundary definition
- Inventory of existing facilities (source and treatment, reservoirs, pump stations, pressure reducing valves, transmission and distribution piping)

Task 5 – Water Requirements

Summarize current water capacity requirements based on available water production and customer billing data. Forecast future water requirements based on available land use information and current water use by customer type. Review projected future water requirements for consistency with other City planning documents and anticipated development timelines.

Task 6 – Analysis Criteria

Develop capacity and performance criteria for evaluating source and distribution facilities including:

- Source capacity, redundancy and quality
- Storage capacity
- Booster pumping capacity and redundancy
- Service pressure ranges under normal and emergency conditions
- Required fire flow capacity

Task 7 – Water Supply Analysis

This tasks includes evaluation of the City's existing sources, future source alternatives, transmission facilities between source and treatment and treatment location and capacity. It is understood that the City will need to develop additional source and treatment capacity to meet future water demands. Future source capacity may need to be sited outside of the City's existing well field property.

It is assumed that the springs system has been fully divested from the City's water system and is not included in this analysis.

Subtask 7.1 – Water Rights Assessment

Refine strategies for protecting and securing the City's existing water rights. It is assumed that this subtask will build on prior work completed for the City by GSI. Work under this subtask includes:

- Review the status of Newberg's water rights, including compliance with permit conditions and assessment of how authorized rates on water rights align with the capacities of existing wells
- Provide recommendations for modifications to the City's existing water rights based on current supply usage and near-term plans for expanding source capacity. Strategies for acquiring new water rights to accommodate future growth will be developed as part of subtask 7.3 source expansion assessment

Subtask 7.2 – Source Condition Assessment

Assess and describe the status of the City's current groundwater supply system, including well capacities, overall source capacity, vulnerabilities and how to maximize and maintain current source capacity. As part of this task, an assessment of the risks, operating conditions and continued reliability of maintaining a wellfield within the floodplain will be assessed. Work under this subtask includes:

- Meet with the City to review current well operations, staff observations and maintenance histories
- Review City-provided operations data to evaluate well pumping capacities
- Collect manual static and pumping water level measurements during limited cycling of wells with City staff support
- Review current well performance and compare to baseline well performance data to identify any changes in performance. Based on this information, limited well testing may be needed to evaluate interference outside of the scope of this task. GSI will work with the City to identify opportunities for staff to complete testing.
- Summarize maximum and firm source capacities during summer (low water) and "typical" winter (high water) conditions.
- Develop recommendations for operating and managing the City's existing well sources to optimize capacity, reliability and design life.

Subtask 7.3 – Source Expansion Assessment

Identify and preliminarily evaluate alternatives for expanding the City's future groundwater supply source capacity, including:

- Review previous work and Well 9 drilling and testing results to refine understanding of the aquifer and identify data gaps.
- Identify potential locations and preliminary yield estimates for future wells
- Evaluate the potential to develop an aquifer storage and recovery (ASR) system
- Develop work plan and planning level costs for assessing buildout capacity of the existing well field property
- Meet with City staff to identify potential well source development areas and constraints
- Complete a field reconnaissance of identified potential well source locations
- Evaluate the potential to develop a new well source in each area of interest on the basis of hydrogeology, land use and ownership, regulatory and permitting requirements.
- Develop and evaluate a set of well source capacity expansion alternatives in collaboration with the City
- Document each identified source alternative including benefits, risks, key unknowns and planning levels costs for evaluating feasibility, permitting and development.
- Present the source expansion evaluation. It is assumed this information will be presented in two meetings, one with City staff and one for policy makers and the public.

Based on prior work with the City, this assessment will focus on the following locations:

1. the City-owned parcel hosting the existing well field
2. areas on the south side of the Willamette River that are nearby the existing well field
3. areas on the north side of the Willamette River between Newberg and Dundee

Subtask 7.4 – Transmission Evaluation

Currently, the City's groundwater source is transmitted from the existing wellfield across the Willamette River to the Water Treatment Plant (WTP) through two transmission mains. This subtask is intended to evaluate the existing transmission capacity and potential vulnerability of these facilities. In addition, transmission needs between future source and treatment facility alternatives will be evaluated based on subtasks 7.3 and 7.5

Subtask 7.5 – Water Treatment Evaluation

Evaluate capacity and siting of future treatment facilities based on the water source alternatives identified in subtask 7.3. This evaluation will include transmission and pressure control facilities, as required, to integrate source alternatives and future treatment facilities into the existing water system. It is assumed that future facilities will mirror conventional treatment processes currently used at the City's WTP. A comprehensive review of alternative water treatment methods is outside the scope of this evaluation. Siting analyses will consider expansion of the existing WTP site or development of a site near to the City's wastewater treatment plant.

Task 8 – Hydraulic Model Update and Calibration

Update Newberg water system hydraulic model including storage, pumping and distribution piping facilities. The model will be calibrated to fire hydrant flow test results in order to more accurately approximate observed operating conditions.

Subtask 8.1 –Model Update

Review and update existing City water system hydraulic model, including:

- perform database updates for compatibility with latest modeling software
- add water facilities constructed since the last model update
- verify physical water facility parameters, such as, pipe sizes and reservoir dimensions
- verify average operating parameters and seasonal variations, such as, reservoir level set points for pump stations and PRV pressure settings

Subtask 8.2 – Water Demand and Fire Flow Assignment

Develop existing and projected future water demand geographic distributions in the hydraulic model based on existing City billing data and identified large water users.

Assign geographic fire flow demand distributions in the hydraulic model based on land use consistent with criteria developed in Task 6.

Subtask 8.3 - Fire Hydrant Flow Testing

Provide support, oversight and flow testing equipment to conduct fire hydrant flow testing at approximately 12 locations throughout the Newberg distribution system. Work under this task includes:

- Identify optimal locations for model calibration flow testing and verify available drainage capacity with City staff

- Develop mapping and field data sheets
- Provide two MSA staff and one field vehicle for flow testing
- Take measurements during flow testing and compile results

It is assumed that the City will provide:

- Input on flow testing location selection and potential drainage issues
- Communication and notification of emergency responders, critical facilities and customers at the City's discretion
- One field vehicle and two City staff members with appropriate tools to operate hydrants
- Water system operating parameters within +/- five minutes of the time of each flow test including reservoir levels and WTP flow rate

Subtask 8.4 – Model Calibration

Perform model calibration using field measurements gathered in subtask 8.3 to confirm accurate simulation of actual water system conditions to the extent possible with available operating data. Develop and document criteria for evaluating calibration confidence levels.

Task 9 – Distribution System Analysis

Apply analysis criteria established in Task 6 and water requirements developed in Task 5 to evaluate water system performance. The water system will be evaluated under existing, projected 20-year and build-out water demand conditions. A preliminary assessment of the City's Supervisory Control and Data Acquisition (SCADA) system will be conducted under this task to identify if future study is needed, or if system improvements are recommended to upgrade the system to industry accepted hardware, software and communications.

Subtask 9.1 – Distribution Hydraulics

The existing water distribution piping will be analyzed using steady-state hydraulics under peak demand and fire flow conditions. Each demand condition will be evaluated against the pressure and velocity criteria developed in Task 6 using the calibrated hydraulic model developed in Task 8 to identify system deficiencies.

Subtask 9.2 – Storage and Pumping Capacity

Evaluate finished water storage and booster pumping capacity based on criteria established in Task 6 and water requirements developed in Task 5.

Subtask 9.3 – Water Quality

Review and summarize water quality regulatory requirements and City compliance within the distribution system. Identify areas of concern, if any, for water quality compliance in the distribution system and describe conceptual-level improvement alternatives.

Task 10 – Operation & Maintenance (O&M) Evaluation

Evaluate current water distribution system operating and routine maintenance procedures based on AWWA standards and practices of similar water providers in the region. Recommend additional scheduled maintenance as indicated and recommend staffing levels needed accomplish recommended maintenance. The following items will be documented in this section of the Plan:

- Distribution system management and personnel
- Operator certification
- System operation and control
- Operations & maintenance needs and improvements

Task 11 – Non-Potable Water Re-Use Evaluation

Newberg is currently providing adequate tertiary treatment to allow non-potable re-use of effluent from the City's Wastewater Treatment Plant (WWTP). The City has installed a non-potable "purple pipe" distribution system alongside water system piping in a portion of the water service area. This task is intended to evaluate conceptual-level benefits of non-potable effluent re-use including estimated costs to expand the non-potable distribution system and identification of potential large-capacity non-potable customers.

Work completed as part of this task will be summarized in a stand-alone technical memorandum. The memorandum will be included as an appendix to the water master plan document to support modifications to peak season demands and potential capital improvements, if requested by the City.

Task 12 – Develop Capital Improvement Plan (CIP)

Develop prioritized list of capital improvement projects to address deficiencies identified in analysis Tasks 7 and 9. The CIP will include estimated cost for each project, suggested timeframe for construction and allocation of project costs allocation to existing and future customers. CIP projects will be illustrated on a water system map.

Task 13 – Financial Evaluation

The goal of the financial evaluation is to build off of work completed as part of Newberg's Fiscal Year (FY) 2015-16 rate review, and establish a longer-term funding plan that ensures

adequate revenue to address the capital and O&M needs of the water system, as identified in the Master Plan.

The primary components of the funding plan are: 1) user rates, and 2) System Development Charges (SDCs). The SDCs will be updated based on the CIP developed in Task 12. The rate analysis will incorporate the rate adjustments for FY2016-17 and FY2017-18 adopted by the City as part of the FY2015-16 rate review, and develop preliminary projections for post-FY2018 rate increases to fund the Master Plan CIP and O&M through FY2025-26. The analysis will be documented for inclusion in the Master Plan report, and the updated financial analysis will serve as the basis for future rate reviews.

Subtask 13.1 - Financial Plan Development

Update the financial model developed for the FY2015-16 rate review with more current information from the City (budget and usage data), and expand the model to incorporate capital and O&M recommendations from the Master Plan for a 10-year planning period. Revenue requirements (including current revenue funded capital projects, debt service, O&M costs, and funding of contingencies and reserves) will be projected for the entire planning period. Miscellaneous revenues, including revenue from SDCs, interest income, etc, will be projected and deducted from total requirements to determine the amount of annual revenue required from user rates. Alternative financing and CIP phasing scenarios may be evaluated against projected rate impacts and financial performance targets.

Subtask 13.2 - SDC Methodology Review and Update

Within the framework of Oregon law, local governments have latitude in selecting specific methodological approaches related to the calculation and assessment of SDCs. The first set of options relates to the overall structure of the SDC – whether the fees are based on existing facility costs (reimbursement fee), future planned improvements (improvement fee), or a combination. Once a determination has been made as to the development fee structure, the methodology may be further refined based on a number of additional considerations, including the following:

- Capacity apportionment approach (related to both the existing facilities and planned improvements).
- Existing system valuation approach (e.g., book value, original cost, and replacement cost)
- Factors related to the time value of money (e.g. interest and inflation).
- Fee assessment units (e.g., equivalent dwelling units and meter size).

We will work with the City to evaluate alternative approaches and develop a methodology and fees consistent with the capital improvement needs.

Task 14 – Prepare Water Master Plan Report

Prepare draft and final master plan documents to include addressing interim and final review comments from City staff, stakeholder advisory committee, Planning Commission, City Council and Oregon Health Authority, Drinking Water Services (OHA-DWS).

Subtask 14.1 – Prepare Draft Plan

Combine work products and findings from previous tasks into a cohesive water master plan which meets Oregon Administrative Rule requirements for Water Master Plans. The Plan is anticipated to include the following major chapters:

1. Introduction and Existing System
2. Water Requirements
3. Analysis Criteria
4. Water System Analysis
5. Operation and Maintenance Evaluation
6. Capital Improvement Plan
7. Appendix

Draft reports will be in electronic format, except where requested by the City. In those cases where printed versions are required, no more than 5 hard copies will be produced.

Subtask 14.2 – Develop Executive Summary

Following draft review and approval by City staff, prepare concise Executive Summary as a stand-alone document to be distributed to policy makers and included in the final plan document.

Subtask 14.3 – OHA-DWS Plan Review

Coordinate delivery of draft plan to OHA-DWS for review including addressing review comments and follow-up correspondence, as required. The City will pay the OHA-DWS plan review fee.

Subtask 14.4 – Produce and Deliver Final Plan

Prepare final document that incorporates all City (staff, stakeholder advisory committee, Planning Commission and City Council) and OHA-DWS review comments and submit to City staff.

Final reports will be in electronic format, except where requested by the City and OHA-DWS. In those cases where printed versions are required, no more than 5 hard copies will be produced.

Task 15 – Policy Maker Presentations & Plan Adoption

Present water master plan work, proposed CIP and financial evaluation to Newberg Planning Commission and City Council. MSA will present and answer questions at up to two meetings each for the Planning Commission and City Council. For estimating purposes, 3 to 4 team members are assumed to attend each meeting.

PROJECT SCHEDULE

The anticipated project delivery timeline is as follows. A detailed project schedule identifying task durations and critical path tasks will be developed and provided to the City at the project kick-off meeting.

- Existing system description, water requirements and criteria – October 2015
- Distribution, storage and pumping analysis – January 2016
- Source, treatment and transmission – February 2016
- System Reliability Workshop – March 2016
- Draft CIP and Project Prioritization – April 2016
- Financial Evaluation Workshop – May 2016
- Complete Draft Plan
    - Staff review – late June 2016
    - Final Advisory Committee meetings – late June/early July 2016
    - Presentations to Planning Commission and City Council – August 2016
    - Submit for State Approval – late August 2016
- Final Plan – late September 2016

WATER SYSTEM MASTER PLAN
CITY OF NEWBERG
PROPOSED FEE ESTIMATE

		LABOR CLASSIFICATION (HOURS)								ESTIMATED FEES				
		Principal Engineer VI $218	Principal Engineer III $194	Principal Engineer I $178	Professional Engineer V $138	Engineering Designer III $122	Technician IV $125	Administrative II $82	Hours	Labor	Subconsultants		Expenses	Total
		Bowers	Stangel/Carr	Ginter	Springer						GSI	GRG		
Task 1 -	Project Management	4		72	24			12	112	$ 17,984			$ 300	$ 18,284
	Task 1 Subtotal	**4**	**0**	**72**	**24**	**0**	**0**	**12**	**112**	**$ 17,984**	**$ -**	**$ -**	**$ 300**	**$ 18,284**
Task 2 -	Stakeholder Involvement													
Subtask 2.1 -	Stakeholder Involvement Plan	1		4	4			2	11	$ 1,646			$ 25	$ 1,671
Subtask 2.2 -	Technical Advisory Committee Meetings			6	12		4	6	28	$ 3,716	$ 2,885		$ 472	$ 7,073
Subtask 2.3 -	Citizen Advisory Committee Meetings			6	12		4	6	28	$ 3,716	$ 2,885	$ 1,452	$ 472	$ 8,525
Subtask 2.4 -	Stakeholder Involvement Contingency									$ 7,500			$ -	$ 7,500
	Task 2 Subtotal	**1**	**0**	**16**	**28**	**0**	**8**	**14**	**67**	**$ 16,578**	**$ 5,770**	**$ 1,452**	**$ 969**	**$ 24,769**
Task 3 -	Data Collection and Review			1	8	10	4	2	25	$ 3,166			$ 172	$ 3,338
	Task 3 Subtotal	**0**	**0**	**1**	**8**	**10**	**4**	**2**	**25**	**$ 3,166**	**$ -**	**$ -**	**$ 172**	**$ 3,338**
Task 4 -	Water System Description			4	16		8	1	29	$ 4,002			$ 144	$ 4,146
	Task 4 Subtotal	**0**	**0**	**4**	**16**	**0**	**8**	**1**	**29**	**$ 4,002**	**$ -**	**$ -**	**$ 144**	**$ 4,146**
Task 5 -	Water Requirements			8	96	24	4	1	133	$ 18,182			$ 172	$ 18,354
	Task 5 Subtotal	**0**	**0**	**8**	**96**	**24**	**4**	**1**	**133**	**$ 18,182**	**$ -**	**$ -**	**$ 172**	**$ 18,354**
Task 6 -	Analysis Criteria			6	12			1	19	$ 2,806			$ 25	$ 2,831
	Task 6 Subtotal	**0**	**0**	**6**	**12**	**0**	**0**	**1**	**19**	**$ 2,806**	**$ -**	**$ -**	**$ 25**	**$ 2,831**
Task 7 -	Water Supply Analysis													
Subtask 7.1 -	Water Rights Assessment			1						$ 178	$ 5,560		$ 50	$ 5,788
Subtask 7.2 -	Source Condition Assessment			1						$ 178	$ 11,088		$ 50	$ 11,316
Subtask 7.3 -	Source Expansion Assessment			12	16		4	1		$ 4,926	$ 42,295		$ 72	$ 47,293
Subtask 7.4 -	Transmission Evaluation	1		14	30	8	4		57	$ 8,326			$ 72	$ 8,398
Subtask 7.5 -	Water Treatment Evaluation			12	30		4	1	47	$ 6,858			$ 72	$ 6,930
	Task 7 Subtotal	**1**	**0**	**40**	**76**	**8**	**12**	**2**	**139**	**$ 20,466**	**$ 58,943**	**$ -**	**$ 316**	**$ 79,725**
Task 8 -	Hydraulic Model Update and Calibration									$ -			$ -	$ -
Subtask 8.1 -	Model Update				10	24				$ 4,308			$ 288	$ 4,596
Subtask 8.2 -	Water Demand and Fire Flow Assignment		1		5	20				$ 3,324			$ 240	$ 3,564
Subtask 8.3 -	Fire Hydrant Flow Testing			2	32	20				$ 7,212			$ 240	$ 7,452
Subtask 8.4 -	Model Calibration		4		4	40				$ 6,208			$ 480	$ 6,688
	Task 8 Subtotal	**0**	**5**	**2**	**51**	**104**	**0**	**0**	**162**	**$ 21,052**	**$ -**	**$ -**	**$ 1,248**	**$ 22,300**

Resolution 2015-3210
Exhibit A