

**HIGHLINE WATER DISTRICT  
King County, Washington**

**RESOLUTION 14-6-18A**

**RESOLUTION AUTHORIZING CONSULTANT AGREEMENT FOR SERVICES  
(CONTRACT #14-50-06) WITH CAROLLO ENGINEERS, INC., FOR  
PROJECT 14-1 2015 COMPREHENSIVE WATER SYSTEM PLAN UPDATE**

**WHEREAS**, per RCW 57.16.010, the Board of Commissioners of Highline Water District shall adopt a general comprehensive plan for the type or types of facilities the district proposes to provide; and

**WHEREAS**, on March 12, 2014, the District requested proposals from four (4) firms on the Municipal Research and Services Center (MRSC) Consultant Roster to provide the consulting services to update the District's 2015 Comprehensive Water System Plan; and

**WHEREAS**, District management and key staff reviewed the proposals and interviewed the consultants and selected Carollo Engineers, Inc. as the most qualified firm.

**NOW, THEREFORE, BE IT RESOLVED:** The Board of Commissioners authorizes the General Manager or designee to enter into a contract with Carollo Engineers, Inc. to update the District's 2015 Comprehensive Water System Plan for a not-to-exceed amount of \$227,194.00.

**ADOPTED BY THE BOARD OF COMMISSIONERS** of Highline Water District, King County, Washington, at an open public meeting held this **18th** day of **June 2014**.

**BOARD OF COMMISSIONERS**

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**Kathleen Quong-Vermeire, President**

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**Gerald R. Guite, Commissioner**

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**Vince Koester, Commissioner**

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**George Landon, Secretary**

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**Daniel Johnson, Commissioner**

## HIGHLINE WATER DISTRICT AGREEMENT FOR CONSULTING SERVICES

THIS AGREEMENT is entered into between **HIGHLINE WATER DISTRICT**, King County, Washington, a municipal corporation and special purpose district organized and existing under the laws of the State of Washington (hereafter referred to as "the District"), and **CAROLLO ENGINEERS, INC.**, (hereafter referred to as "the Consultant") in consideration of the mutual benefits, terms and conditions hereinafter specified.

1. Scope of Consulting Services. Consultant shall provide consulting services to the District under the terms of this Agreement for the following Project: 14-1 2015 Comprehensive Water System Plan Update ("Project"). The scope of services is more fully described on **Exhibit A** attached hereto and incorporated herein by this reference.
  
2. Compensation and Payment. District shall pay Consultant for the time and materials devoted to the Project as consideration for the performance of the services set forth on **Exhibit A**, not to exceed the amount of Two Hundred Twenty Seven Thousand One Hundred Ninety Four and 00/100 Dollars (\$ 227,194.00). Such compensation shall be payable in the following manner:
  - a. Consultant shall submit a detailed monthly billing for all services provided describing in reasonable and understandable detail the services rendered, fees charged and expenses incurred by Consultant during the previous month in accordance with a schedule of rates and charges set forth on **Exhibit B**, including fees and expenses for additional services authorized by District as provided herein. District shall pay the invoice within sixty (60) days of receipt, except as to any disputed amounts.
  
  - b. Upon District's failure to pay within sixty (60) days of receipt the undisputed amount set forth in any monthly billing submitted to District by Consultant, such unpaid balance will bear interest at the rate of 1% per month until the amount of such unpaid balance, plus interest thereon shall be paid in full.
  
  - c. Consultant shall maintain accounts and records of fees billed and expenses incurred as described in this Section 2 in accordance with generally accepted accounting principles, and agrees to make such accounts, records and supporting documentation available to the District and its authorized representatives for inspection at mutually convenient times, both during the Project work and for three (3) years following the final payment for services rendered or termination of the Consultant's services under this Agreement.
  
3. Schedule of Work. Consultant shall commence the performance of its services under this Agreement upon receipt of notice to proceed from the District to do so and shall provide the services in accordance with the schedule on **Exhibit A**, subject to delays for causes beyond the reasonable control of Consultant or as otherwise agreed to by District.
  
4. Subcontractors. Consultant shall not subcontract or assign any portion of the work covered by this Agreement without the prior written approval of the District, such consent to be given in District's sole discretion. Subject to the provisions of the preceding sentence, this

Agreement shall be binding upon and inure to the benefit of the respective successors and assigns of the parties hereto.

5. Independent Contractor. Consultant is an independent contractor and not an employee of the District. Consultant shall be responsible in full for payment of its employees, including insurance and deductions, and for payment to any subcontractors. No personnel employed by Consultant shall acquire any rights or status regarding the District. All of the services required hereunder shall be performed by Consultant or under its direction, and all personnel engaged therein shall be fully qualified under applicable state, federal and local laws to undertake the work performed by them.
6. Changes in Scope of Services. The District may require changes or modifications in the scope of services to be performed under this Agreement. Any such changes or modifications shall be in writing and signed by the parties to this Agreement. The compensation for the changes or modifications, whether a decrease or increase, shall be on the same terms and conditions as set forth in Paragraph 2 above or in a manner otherwise mutually agreed to by the parties.
7. Insurance. Consultant shall maintain throughout the performance of this Agreement the following types and amounts of insurance.
  - a. Comprehensive vehicle liability insurance covering personal injury and property damage claims arising from the use of motor vehicles with combined single limits of Two Million Dollars (\$2,000,000).
  - b. Commercial General Liability Insurance written on an occurrence basis with limits no less than Two Million Dollars (\$2,000,000) combined single limit per occurrence and Two Million Dollars (\$2,000,000) aggregate for personal injury, bodily injury and property damage. Coverage shall include, but not be limited to: blanket contractual; products/completed operations; broad form property damage; explosion, collapse and underground (XCU) if applicable; and employer's liability; and
  - c. Professional liability insurance (Errors and Omissions insurance) with limits no less than Two Million Dollars (\$2,000,000).

The insurance policies shall: (1) state that coverage shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability; (2) be primary to any insurance maintained by the District, except as respects losses attributable to the sole negligence of the District; and (3) shall state that the District will be given 45 days prior written notice of any cancellation, suspension, non-renewal or reduction in coverage.

The District shall be named as an additional insured on the Commercial General Liability Insurance policy with regard to work and services performed by or on behalf of the Consultant and a copy of the endorsement naming the District as an additional insured shall be attached to the Certificate of Insurance.

Before commencing work and services, Consultant shall provide to the District a Certificate of Insurance and required endorsements evidencing the insurance described above. The District reserves the right to request and receive a certified copy of all required insurance policies.

The above insurance limits do not constitute a limit on Consultant's liability to the District. Any payment of deductible or self-insurance retention shall be the sole responsibility of Consultant.

Consultant shall be solely responsible for the safety of its employees and subcontractors at the Project work site, and shall comply with all applicable federal, state and local statutes, regulations and ordinances regarding safety.

8. Indemnification. Consultant shall defend, indemnify and hold harmless the District, its elected and appointed officers, employees and agents and volunteers from and against all claims, injuries, damages, liabilities, losses of suits, including attorneys' fees and costs, arising out of or relating to Consultant's performance under this Agreement, except for injuries or damages caused by the sole negligence of the District. For the purposes of this indemnification, Consultant specifically and expressly waives any immunity granted under the Washington Industrial Insurance Act, Title 51 RCW. This waiver has been mutually negotiated and agreed to by the parties. If a court of competent jurisdiction determines that this contract is subject to RCW 4.24.115, Consultant's obligation to defend, indemnify and hold harmless the District, its officers, employees, agents and volunteers shall be limited to the extent of Consultant's negligence. The provisions of this Section shall survive the expiration of termination of this Agreement.
9. Ownership of Documents. Consultant agrees to return to District upon termination of this Agreement all documents, logs, drawings, photographs and other written or graphic material, however produced, received from District and used by Consultant in performance of its services hereunder. All documents, logs, drawings, specifications, designs, mylars, surveys, survey data, reports and other work product (collectively referred to as "Work Product") produced by Consultant in connection with the services rendered under this Agreement shall be owned by District. District shall own all copyrights to such Work Product and Consultant agrees to assign all ownership rights to such Work Product to the District. Reuse of any such Work Product by the District for other than a specific project or modification in use by the District of any of the Work Product without the Consultant's prior written approval shall be at the District's sole risk.
10. Standard of Care. Consultant warrants that its services shall be performed with the level of care, skill and competence of the consulting profession in accordance with the standard for professional services at the time the services are rendered.
11. Right of Entry. District shall provide for the right of entry of Consultant and its subcontractors and all necessary equipment in order to complete the services under this Agreement.
12. Compliance with Codes and Standards. Consultant's Professional Services shall be consistent with the standard of care and shall incorporate those publicly known federal, state and local laws, regulations, codes and standards that are applicable at the time Consultant renders its services.
13. Discovery of Hazardous Materials. The Parties recognize that unanticipated hazardous materials or suspected hazardous materials may be discovered on District's property or on property included as part of the site of work but not owned by District. The discovery of

unanticipated hazardous materials may delay the Consultant's provision of the services required herein. In that event, the parties may extend the Contract Completion Date by mutual agreement.

14. Termination. This Agreement may be terminated by either Party upon five (5) days written notice for any reason. In the event of termination, Consultant shall be entitled to compensation for all services performed and costs incurred through and including the date of termination, except as to any disputed amounts.

15. General Provisions.

a. Notices. Any notice or demand desired or required to be given under this Agreement shall be in writing and deemed given when personally delivered, sent by facsimile machine, or deposited in the United States Mail (or with an express courier), postage prepaid, sent certified or registered mail, and addressed to the parties as set forth below or to such other address as either Party shall have previously designated by such a notice:

<p><u>To the District:</u></p> <p>Highline Water District          23828 30th Ave. S.          Kent, WA 98032</p> <p>Attn: Jeremy S. DelMar, PE          Engineering/Operations Manager</p>	<p><u>To the Consultant:</u></p> <p>Carollo Engineers, Inc.          1218 Third Ave, Suite 1600          Seattle, WA 98101</p> <p>Attn: Lara Kammereck, PE, PMP          Project Manager</p>
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b. Entire Agreement. This Agreement and its exhibit attachments contain the entire understanding between the District and Consultant relating to the consulting services which are the subject of this Agreement. This Agreement merges all prior discussions, negotiations, letters of understanding or other promises whether oral or in writing. Subsequent modification or amendment of this Agreement shall be in writing and signed by the parties to this Agreement.

c. Waiver. Waiver of any breach or default hereunder shall not constitute a continuing waiver or a waiver of any subsequent breach either of the same or of another provision of this Agreement.

d. No Third Party Rights. This Agreement is made only for the benefit of the District and Consultant and successors in interest and no third party or person shall have any rights hereunder whether by agency, as a third party beneficiary, or otherwise.

e. Jurisdiction/Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Washington. Any suit to enforce or relating to this Agreement shall be brought in King County Superior Court, King County, Washington.

f. Severability. If any term, covenant or condition of this Agreement is held by a court of competent jurisdiction to be invalid, the remainder of this Agreement shall remain in effect.

- g. Effective Date. The effective date of this Agreement shall be the date that this Agreement has been signed by authorized representatives of both Parties hereto ("Effective Date").

**CAROLLO ENGINEERS, INC.**  
("CONSULTANT")

By \_\_\_\_\_  
Typed Name \_\_\_\_\_  
Its \_\_\_\_\_  
Dated \_\_\_\_\_

By \_\_\_\_\_  
Typed Name \_\_\_\_\_  
Its \_\_\_\_\_  
Dated \_\_\_\_\_

**HIGHLINE WATER DISTRICT**  
("DISTRICT")

By \_\_\_\_\_  
Typed Name Matt Everett  
Its General Manager  
Dated \_\_\_\_\_

# **EXHIBIT A**

## **HIGHLINE WATER DISTRICT WATER SYSTEM PLAN UPDATE SCOPE OF SERVICES**

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### **SCOPE OF SERVICES**

The following Scope of Services has been developed to assist the Highline Water District (District) with the update of its Water System Plan (Plan). The objective of this project is to update and/or provide technical assistance and review of all elements of the Highline Water District Comprehensive Water System Plan document, in accordance with WAC 246-290-100. The following tasks under this Scope of Services have been prepared based on Carollo Engineers' (Consultant) current understanding of the proposed project and on discussions with District staff.

### **PROJECT BACKGROUND**

The District operates and maintains a water supply, treatment, and distribution system, serving customers in its water service area. Currently, the District delivers water to its customers from local wells, interties with Seattle Public Utilities, booster pump stations, and storage tanks. The District's last Comprehensive Water System Plan was completed in 2008. The 2008 Plan and will be reviewed and relevant elements incorporated into the 2015 Plan.

### **PROJECT ASSUMPTIONS**

- Carollo Engineers, Inc. will be referred to as "Consultant" in this document.
- The Highline Water District and its staff will be referred to as "District" in this document.
- All meetings will be held at District offices.
- Draft Chapters will be provided in electronic copy (PDF and/or Microsoft Word) transmitted via email or secure file transfer.
- Meeting notes and related materials will be transmitted electronically in MS Word and PDF formats via email.
- The District will print and produce additional copies of all documents as necessary for its use.
- The District will provide available information related to the project and as requested by the Consultant in a timely manner. The District shall furnish Consultant available studies, reports, and other data pertinent to Consultant's services; obtain, or authorize Consultant to obtain, or provide additional reports and data as required; furnish to Consultant services of others required for the performance of Consultant's services hereunder, and Consultant shall be entitled to use and rely upon all such information and services provided by the District or others in performing Consultant's services under this Agreement.

<b>Chapter / Appendix</b>	
Chapter 1:	Introduction
Chapter 2:	Planning Data and Water Demands
Chapter 3:	Description of Water System
Chapter 4:	Water System Analysis
Chapter 5:	Water Resource Analysis
Chapter 6:	Operations and Maintenance Program
Chapter 7:	Improvement Program
Chapter 8:	Financial Program
Appendix A:	Adopting Resolution and Ordinance
Appendix B:	Agency/Adjacent Purveyor Comments and Approval
Appendix C:	SEPA Checklist and Determination of Non-Significance
Appendix D:	Interlocal Agreements
Appendix E:	Minimum Design Criteria
Appendix F:	Water Resource Management Plan
Appendix G:	Cross Connection Control Program
Appendix H:	Water Quality Data
Appendix I:	Certificates of Water Rights
Appendix J:	Wellhead Protection Program
Appendix K:	Water Use Efficiency Plan
Appendix L:	Highline Water Shortage Contingency Plan
Appendix M:	Compliant Procedure
Appendix N:	Water Facilities Inventory Form
Appendix O:	Operation and Maintenance Procedures
Appendix P:	Standard Construction Specifications and Details
Appendix Q:	Asset Management Plan

## **TASKS**

To meet the objectives of this scope of services, the Consultant shall complete the tasks as summarized in the table below and discussed in detail in the text that follows.



<b>Task</b>	<b>Title</b>
Task 100	Project Management
Task 200	Planning Data and Water Demands
Task 300	Description of Water System
Task 400	Water System Analysis
Task 500	Water Resource Analysis
Task 600	Operations and Maintenance Program
Task 700	Improvement Program
Task 800	Financial Program
Task 900	Plan Integration

## **TASK 100 – PROJECT MANAGEMENT**

The purpose of this task is to direct all activities within the Plan as assigned by the District and maintain the project within the contracted scope, schedule, and budget from the notice to proceed to closeout. This includes project administration, monthly invoicing, client and team coordination and assurance/quality control review necessary to successfully complete the assigned sections of the Plan to the District's expectations. Specific tasks for this effort are as follows:

### **Task 100 Subtasks**

101. *Monthly Progress Reports and Invoices.* This subtask includes preparing and submitting the work-in-progress reports and monthly invoices showing current project scope, budget and schedule status and identifying key issues or elements of the project that will need to be addressed in the proceeding weeks. An electronic version of the monthly progress reports and invoices will be sent to the District for review and approval.
102. *Project Management Plan.* Prepare a Project Management Plan (PMP) that describes project roles and responsibilities, lists contact information for the project team, describes communications protocols and the quality management plan, and includes the scope of services, budget, and project schedule.
103. *Meeting No. 1 – DOH Kick-off meeting.* Attend the Department of Health (DOH) kick-off meeting with the District. The consultant will summarize the Plan outline and discuss Plan schedule and timeline.
104. *Project Administration.*
  - Manage the consultant project team to track time and budget, work elements accomplished, work items planned for the next period, manpower, scope changes, time and budget needed to complete the project.

- Create and maintain a working project schedule based on the schedule in the PMP.
- Review project status, including scope, budget, and schedule.
- Prepare administer subcontracts with Consultant team members.
- QA/QC review of Draft Plan to meet WAC 246-290-100 Water System Plan Requirements.

#### Assumptions

- The PMP will be updated with full incorporation of review comments once after District review of the draft PMP.
- Assume project length is 12 months.

#### District Deliverables

- Team member contact information.
- PMP review for completeness.
- Receive, review, and process Consultant invoices in a timely manner.

#### Consultant Deliverables

- Draft and Final PMP.
- Monthly progress reports and invoices.
- Meeting Agendas and Minutes.

#### Meetings

- Meeting No. 1 – DOH Kick-off meeting.

### **Task 200 – PLANNING DATA AND WATER DEMANDS**

The purpose of Task 200 is to develop both Chapter 1 – Introduction and Chapter 2 – Planning Data and Water Demands. Chapter 1 describes the District's water system background and history, including ownership and management. Chapter 2 includes a demographic analysis based on land use and Puget Sound Regional Council (PSRC) Transportation Analysis Zone (TAZ) household and employment projections. Water demand projections for each planning year are also included in Chapter 2. The planning years to be evaluated will include 2015-2024, and 2034.

#### Task 200 Subtasks:

201. *Data Request/Review.* Consultant shall request information on historical water sales and production data for the past ten (10) years. The following data is anticipated to be required from the District:

- Historical water production data for the past six (6) years.
- Historical sales data by customer category for the past six (6) years.
- Existing customer connections by customer category and location.
- Water Use Efficiency (WUE) Goals.
- Potential new WUE measures.

202. *Demographics Analysis.*

- Consultant to use existing and future land use maps from each jurisdiction served by the District to estimate existing and build-out household and employment numbers within the RWSA.
- Use PSRC TAZ household and employment data for each jurisdiction to develop household and employment growth rates.
- Grow existing number of households and employees in each jurisdiction using growth rates developed from PSRC data, not to exceed build-out conditions.
- Develop unique household and employment growth rates for each jurisdiction within the RWSA for the 6-, 10-, and 20-year planning periods. Use growth rates to estimate future number of accounts.

203. *Demand Projections.*

- Develop the current average day demands (ADD) and maximum day demands (MDD), the accounted-for revenue water uses, estimated water loss and leakage planning values, and establish equivalent residential unit (ERU) values for the different customer classes.
- Estimate the future ADD and MDD water demand for each pressure zone based on the demographic projections and historical ERU demand. Demands for the District's five largest customers will be projected separately.

204. *Water Use Efficiency Program.* Summarize the existing conservation program. Estimate conservation volumes and review existing measures for effectiveness. Develop conservation goals for the next six years in accordance with state and local guidelines.

205. *Meeting No. 2 – Demographic Analysis and Demand Projections.* Meet with the District to review demographic analysis results and water demand projections.

206. *Draft and Final Chapter 1 – Introduction.*

207. *Draft and Final Chapter 2 – Planning Data and Water Demands.*

Assumptions

- The District can provide all elements listed under District Deliverables below.
- Current pressure zones are correctly delineated and do not require updating.
- Chapter 1 will only require minor updates from the 2008 Plan.

District Deliverables

- Items listed in Task 201.
- Comments to Consultant deliverables.

Consultant Deliverables

- Meeting Agenda and Minutes.
- Draft and Final Chapter 1 – Introduction.
- Draft and Final Chapter 2 – Planning Data and Water Demands.

### Meetings

- Meeting No. 2 – Demographic Analysis and Demand Projections.

## **TASK 300 – DESCRIPTION OF WATER SYSTEM**

The purpose of Task 300 is to update Chapter 3 – Description of Water System, which includes a summary of all existing facilities as well as water system policies and criteria.

### Task 300 Subtasks

301. *Data Request/Review.* The following data is anticipated to be required from the District for Task 300:
- Current retail water service area (RWSA) boundary in GIS.
  - GIS Map Data: streets, city limits, planned annexation areas, taxlots, water bodies, facility locations, pressure zones, water service connections.
  - Data to update tables summarizing existing infrastructure including pipes, pump stations, production sources, storage reservoirs, interties and valves, including all physical and operational parameters.
  - Updates to water system policies and criteria.
302. *Hydraulic Profile and Map Development.* Consultant to develop new hydraulic profile and maps of the water system to be incorporated into Chapter 3.
303. *Policies and Criteria Review.* Consultant to review District's policies and criteria to ensure compliance with DOH standards and to confirm criteria related to sources, storage, pumping, and transmission against which the water system will be evaluated.
304. *Meeting No. 3 – Existing System Review.* Meet with the District to review the existing system.
305. *Draft and Final Chapter 3 – Description of Water System.*

### Assumptions

- District can provide all elements listed under Task 301.
- Chapter 3 will only require minor updates from 2008 Plan.

### District Deliverables

- Items listed in Task 301.
- Comments to Consultant deliverables.

### Consultant Deliverables

- Draft and Final Chapter 3 – Description of Water System.

### Meetings

- Meeting No. 3 – Existing System Review.

## **TASK 400 – SYSTEM ANALYSIS**

The purpose of this task is to update the District's H<sub>2</sub>ONET<sup>®</sup> water system hydraulic model, evaluate the system against established evaluation criteria, and develop Chapter 4 – Water System Analysis. Using desktop calculations and the updated hydraulic model, the Consultant will identify deficiencies in supply, pipeline, storage, auxiliary power, and pumping capacity considering the demand changes for the planning year scenarios. The Consultant will review the various water system deficiencies including reliability and redundancy concerns. A list of recommended improvement projects will be developed and evaluated in the hydraulic model and summarized in the Improvement Program.

### **Task 400 Activities**

401. *Data Request/Review.* The following data is anticipated to be required from the District for Task 400:
  - Most recent water quality monitoring data.
  - SCADA Data: Historic well-field and booster pump flows; historic reservoir levels.
  - Current hydraulic model.
  - Recent as-built drawings or other data indicating changes to the model since it was last updated.
402. *Water Quality Analysis.* Update section 4.2 to reflect the current system and the District's most recent water quality monitoring data.
403. *Water Supply Analysis.* Evaluate the District's ability to provide water supply in accordance with the District's confirmed reliability and supply criteria for the 6-, 10-, and 20-year projected demands within the RWSA and each pressure zone. Complete DOH Table 4 for future water rights and demands.
404. *Pumping Capacity Analysis.* Identify future pumping capacity requirements to supply each pressure zone per the evaluation criteria. Provide recommendations for new facilities, or operational changes.
405. *Storage Analysis.* Identify storage volume requirements for each pressure zone based on the storage criteria for equalizing, fire flow, operational and standby volumes. The storage analysis will be performed for the 6-, 10-, and 20-year demands to identify storage deficiencies.
406. *Model Troubleshooting.* Review District's current hydraulic model and make any necessary model modifications to meet current operating conditions.
407. *Model Update.*
  - Confirm operational data such as PRV and well settings and pump call on/off setpoints. Incorporate new piping and infrastructure projects since the last model update.

- Apply the estimated existing and future demands to nodes in the model using GIS geocoding. Scale demands per pressure zone such that the total demand per pressure zone matches the demand assumptions.
  - Review diurnal curves and modify to AWWA Standard if needed.
408. *Model Calibration.* Prepare a calibration plan that describes what SCADA and field data needs to be collected to calibrate the updated hydraulic model. Identify up to twelve (12) locations for fire hydrant flow tests and provide a map and list of locations within the calibration plan. Calibrate the hydraulic model within standard modeling accuracy of +/- 10%.
409. *Fire and System Pressure Analysis.* Using the hydraulic model, perform steady state analysis of the system evaluating fire flow and system pressures per DOH regulations and guidelines based on the District's water system criteria. The Consultant will identify improvements to address deficiencies under the MDD + fire flow simulations and the peak hour simulations for the 6-year, 10-year and 20-year scenarios. Fire flow requirements (FFR) will be assigned to the model nodes based on land use classification. The model will also be used to identify minimum system pressures during peak-hour demands. The hydraulic analysis will focus on distribution capacity deficiencies for pressure, velocity and flow.
410. *Identification of Improvement Projects.* Identify improvements to address identified supply, storage, treatment, water quality, auxiliary power and transmission/distribution deficiencies. Improvements will be sized to meet 20-year demand conditions. Prepare figures showing results of pressure and fire flow after implementing recommended improvements.
411. *Meeting No. 4 – System Analysis and Identified Improvements.* Discuss the deficiencies identified during the fire flow and system pressure analysis. Review identified system deficiencies and proposed improvements to be included in the CIP.
412. *Draft and Final Chapter 4 – Water System Analysis.*
413. *Additional Supply Scenario Evaluations.* Two additional supply scenarios will be evaluated for supply, pumping, storage, fire and pressure deficiencies. Supply Scenario 2 includes Seattle Public Utilities (SPU) supply, District supply, along with 2.0 mgd Lakehaven Utility District (LUD) supply in the 560 Zone. Supply Scenario 3 includes SPU supply, District supply, along with 2.0 mgd LUD supply split between the 560 and 490 zones.

#### Assumptions

- District can provide elements listed under Task 401, and the following:
  - Policies and criteria related to sources, storage, pumping, and transmission.
  - Information needed for model calibration (e.g., water demand information and SCADA data during the time when tests were performed).
- District will perform fire hydrant flow tests and provide results to Consultant.
- Any needed pump station or storage improvements will be identified by capacity and zone; specific sites will not be identified, unless provided by the District.

### District Deliverables

- Items listed in Task 401.
- Comments to Consultant deliverables.

### Consultant Deliverables

- Draft and Final Chapter 4 – Water System Analysis.
- Meeting Agenda and Minutes.

### Meetings

- Meeting No. 4 – System Analysis and Identified Improvements.

## **TASK 500 – WATER RESOURCE ANALYSIS**

The purpose of this task is to update Chapter 5 – Water Resource Analysis. Chapter 5 includes an overview of the District's water supplies, water rights, and water system reliability.

### Task 500 Activities

501. *Data Request/Review.* The following data is anticipated to be required from the District for Task 500:

- Changes to existing water rights and pending water rights applications since 2008 Plan.
- Changes to sources of supply since 2008 Plan.
- Updates to District supply strategy since 2008 Plan.
- Updates to Water Shortage Contingency Plan since 2008 Plan.
- Updates to Wellhead Protection Program since 2008 Plan.

502. *Water Rights Assessment.* Summarize water right primary and supplemental permits, claims, certificates, and pending water right applications and change applications. Complete DOH Table 3 for existing water rights and demand.

503. *Draft and Final Chapter 5 – Water Resource Analysis.* Update District's groundwater strategy. Summarize water system reliability results from Chapter 4, update interties table, update watershed control and reclaimed water evaluation sections.

### Assumptions

- District can provide all elements listed under Task 501.
- Chapter 5 will only require minor updates from the 2008 Plan.

### District Deliverables

- Items listed in Task 501.
- Comments to Consultant Deliverables.

### Consultant Deliverables

- Draft and Final Chapter 5 – Water Resource Analysis.

### Meetings

- No Meeting will be held under this task.

## **TASK 600 – OPERATIONS AND MAINTENANCE PROGRAM**

The purpose of this task is to update Chapter 6 – Operations and Maintenance Program. Chapter 6 includes a summary of the operations and maintenance of the entire water system including an overview of water system management and personnel, operator certification, system operation and control, the District's emergency response program, safety procedures, cross connection control program, customer complaint response program, and record keeping and reporting protocol.

### **Task 600 Activities**

601. *Data Request/Review.* The following data is anticipated to be required from the District for Task 600.

- Staffing Organizational Chart.
- Employee Certifications.
- Updates to system operation and control since 2008 Plan.
- Current Emergency Response Plan.
- Current Cross Connection Control Program.
- Updates to Customer Service Program since 2008 Plan.
- Update to recordkeeping and reporting protocol since 2008 Plan.

602. *Draft and Final Chapter 6 – Operations and Maintenance Program.* Update text describing operation and maintenance of the water system.

### **Assumptions**

- District can provide all elements listed under Task 601.
- This scope does not include an evaluation of labor and staffing requirements.
- Chapter 6 will only require minor updates from the 2008 Plan.

### **District Deliverables**

- Items listed in Task 601.
- Comments on the Consultant deliverables.

### **Consultant Deliverables**

- Draft and Final Chapter 6 – Operations and Maintenance Program.

### **Meetings**

- No Meeting will be held under this task.

## **TASK 700 – IMPROVEMENT PROGRAM**

The purpose of this task is to develop Chapter 7 Improvement Program. Chapter 7 will summarize the recommended improvements for sources of supply, water treatment, storage, pumping and the distribution system as identified in previous chapters.



### Task 700 Activities

701. *Cost Estimates.* Develop opinions of project cost for well rehabilitation, pipe replacement, pump station, reservoir, treatment, and other improvement projects identified by District.
702. *Project Prioritization.* Obtain project prioritization criteria from District. Prioritize all projects into 6-year, 10-year and 20 year schedules based on evaluation during the Plan. Projects not identified in the Plan will be incorporated by the District into the Plan and prioritized during this task.
703. *Meeting No. 5 – Capital Improvement Program.* Review the Improvement Program and final cost estimates.
704. *Draft and Final Chapter 7 – Improvement Program.*

### Assumptions

- District to provide bid costs of recent projects, if available.

### District Deliverables

- Comments on the Consultant deliverables.

### Consultant Deliverables

- CIP Model Spreadsheet.
- Draft and Final Chapter 7 – Improvement Program.
- Meeting Agenda and Minutes.

### Meetings

- Meeting No. 5 – Capital Improvement Program.

## **TASK 800 – FINANCIAL PROGRAM**

### Task 800 Activities

801. *Historical Financial Performance Review.* Review and document the financial operations (revenue and expenses) and financial condition (assets and liabilities) of the water utility for the previous 6-year period. Noteworthy financial trends will be summarized.
802. *Fiscal Policy Review.* Review the District's current fiscal policies for operating and capital reserves, system reinvestment funding, debt management, and debt service coverage.
803. *Capital Financing Plan.* Evaluate capital funding options, and develop a capital financing plan for the 6-year and 20-year Capital Improvement Program (CIP). The analysis will include a forecast of capital funding needs, borrowing requirements, and associated cash flows and cash balances over the study period. Evaluate and recommend an appropriate balance of funding from cash, connection fees, bonds, low interest loans and/or other available revenue sources. Depending upon preliminary results of customer impacts, Consultant will work with the District to perform sensitivity analyses for alternative scheduling of capital projects in order to smooth customer rate impacts. The budget provides for up to three (3) scenarios.

804. *Operating Forecast.* The District's current water operating budgets will be used as the baseline for forecasting ongoing operating and maintenance (O&M) costs, debt service, and other financial obligations of the water utility over the 6-year study period. Incorporate engineering planning growth forecasts and establish economic factors for cost escalation. Integrate additional O&M expenses, if any, resulting from the CIP and any other known changes in operational requirements.
805. *Revenue Needs Assessment.* Integrate fiscal policies, capital financing impacts and the operating forecast, and develop an operating cash flow projection over the 6-year study period. Compare forecasted financial requirements against forecasted revenue under existing rates to determine an annual and cumulative rate strategy to ensure financial sustainability over time.
806. *Cost of Service Analysis.* This evaluation will provide a defensible basis for assigning "cost shares" and establishing "equity" for system customers with the development of a series of allocations that will be based on customer data and engineering/planning criteria in order to assign utility cost recovery to customers in proportion to their actual demands and facility requirements. Major subtasks of the cost of service analysis include:
- Evaluate customer billing statistics to develop customer profiles of usage characteristics.
  - Determine the appropriate grouping of customers or level of service to review. The intent of the service distinction is to evaluate any potential cost differences that may exist in serving different customer classes (single family, multifamily, standby fire) or if new service groupings are warranted (irrigation).
  - Functionalize, classify, and allocate costs to customer classes. The analysis will review existing and planned infrastructure along with annual costs to determine how best to assign cost pools. In general, industry standard cost pools for water utilities include:
    - Meters & Services
    - Base
    - Peak
    - Fire Protection
    - Customer – accounts
  - The cost of service summary will distribute each functional cost pool to each of the existing customer class/service group based on the class/group specific demands and facility requirements. The results will identify any warranted shifts in cost burden from the existing rate structure that could improve equity.
  - Provide the unit cost for each major utility service function (volume and strength). Unit costs will serve as the building block for rate design.
807. *Rate Forecast & Affordability Test.* Develop a rate forecast for the 6-year period. Existing rate structures will be reviewed and up to two alternative rate structures developed. The

rate alternatives will be developed to be consistent with the District's fiscal policies, generate sufficient revenue to meet the revenue requirement forecast and begin to address any inequities identified in the cost of service findings.

Perform an affordability test as an indication of a residential customer's ability to pay the existing and forecasted rates. This includes a median household income index analysis and comparison of the water system's existing and forecasted average residential bills to 1.5% of the median household income. This test will be conducted for the 6-year and 20-year study periods.

808. *General Facility Charge Update.* Update the current water general facility charge study completed in 2013 with the latest Capital Improvement Program. Following industry guidelines and legal precedence, conduct the technical analysis to incorporate current system assets, eligible capital projects (or portions thereof) from the Capital Improvement Programs, and system capacity estimates provided in the Water System Plan. Work closely with Carollo to determine the appropriate allocation of each capital project to the categories of (a) repair & replacements and (b) upgrades and expansions. Calculate the maximum allowable connection fee per customer equivalent and develop a schedule of fees.

809. *Meeting No. 6 – Financial Program Review.*

810. *Meeting No. 7 – Financial Program Final.*

811. *Draft and Final Chapter 8 - Financial Program.*

#### Assumptions

- District to provide financial, budgeting, rate and customer information.

#### District Deliverables

- Comments on the Consultant deliverables.

#### Consultant Deliverables

- Draft and Final Chapter 8 - Financial Program.
- Meeting Agenda and Minutes.

#### Meetings

- Meeting No. 6 – Financial Program Review.
- Meeting No. 7 – Financial Program Final.

### **TASK 900 – PLAN INTEGRATION**

The purpose of this task is to integrate all chapters and appendices into the full Plan for review and adoption by the District. This task includes review of all chapters for consistency with DOH's requirements for a Comprehensive Water System Plan per WAC 206-290-100.

### Task 900 Activities

901. *District Draft Plan.* Prepare Cover Sheet, Table of Contents, and Executive Summary. Compile Chapters and develop Appendices. Prepare review draft document for District Staff in two (2) notebook binder copies and one PDF copy.
902. *Meeting No. 8 - District Draft Plan.* Meet with District to discuss comments of draft document. Incorporate comments to be included into Agency Draft Plan.
903. *Additional Meetings.* Up to two additional meetings for Plan review as determined by District staff.
904. *Agency Draft Plan.* Incorporate District comments into an Agency Draft plan to be submitted for agency review. Two notebook binders, one camera-ready, and one PDF will be developed for District reproduction and distribution of Plan to Agencies and Adjacent Purveyors.
905. *Final Plan.* Consultant will review agency review letters for incorporation into the Final Plan. Delivery of the Final Plan will include two PE-stamped notebook binders, one PE-stamped camera-ready, one PDF, and all electronic files.

### Assumptions

- District provides required documents for appendices.
- All additional Plan copies during the review process will be produced by the District.
- It is anticipated that District will distribute the Plan to DOH and County agencies for approval. The District will collect public and agency review comments and deliver to Consultant. District will develop written responses to comments received during Agency Review process.

### Meetings

- Meeting No. 8 - District Draft Plan.

### District Deliverables

- All appendices to the Plan.
- Comments to the Consultant deliverables.

### Consultant Deliverables

- Executive Summary.
- District Draft Plan.
- Agency Draft Plan.
- Final Plan.

## **SUMMARY**

The following tables provide a summary of the meetings and deliverables anticipated for this scope of services.

<b>Meetings</b>	<b>Title</b>
Meeting No. 1	Project Kick-off Meeting
Meeting No. 2	Demographic Analysis and Demand Projections
Meeting No. 3	Existing System Review
Meeting No. 4	System Analysis and Identified Improvements
Meeting No. 5	Capital Improvement Program
Meeting No. 6	Financial Program Review
Meeting No. 7	Financial Program Final
Meeting No. 8	District Draft Plan Review

<b>Deliverables</b>
Project Management Plan
All Meeting Agendas & Minutes
Monthly Progress Reports (with invoices)
Data Request Spreadsheets
Executive Summary
Draft & Final Chapter 1 – Introduction
Draft & Final Chapter 2 – Planning Data and Water Demands
Demand Projection Model Spreadsheet
Draft & Final Chapter 3 – Description of Water System
Draft & Final Chapter 4 – Water System Analysis
Draft and Final Chapter 5 – Water Resource Analysis
Draft and Final Chapter 6 – Operations and Maintenance Program
Draft and Final Chapter 7 – Improvement Program
CIP Model Spreadsheet
Draft & Final Chapter 8 – Financial Program
District Draft Plan
Agency Draft Plan
Final Plan & All Electronic Files



## EXHIBIT B

### CAROLLO ENGINEERS, INC. FEE SCHEDULE

As of January 1, 2014

	<u>Hourly Rate</u>
<b>Engineers/Scientists</b>	
Assistant Professional	\$138.00
Professional	152.00
Project Professional	168.00
Lead Project Professional	200.00
Senior Professional	232.00
<b>Technicians</b>	
Technicians	138.00
<b>Support Staff</b>	
Document Processing / Clerical	90.00
<b>Project Equipment Communication Expense (PECE) Per DL Hour</b>	<b>11.70</b>
<b>Other Direct Expenses</b>	
Travel and Subsistence	at cost
Mileage at IRS Reimbursement Rate Effective January 1, 2014	\$.56 per mile
Subconsultant	cost + 10%

This fee schedule is subject to annual revisions due to labor adjustments.

Agenda Item No.: 5.1

Agenda Date: 6/18/2014

Reviewed By: BD / M.E.

Re: Authorize Consultant Agreement for Services (Contract #14-50-06) with Carollo Engineers, Inc.  
(Project 14-1 2015 Comprehensive Water System Plan Update)

CATEGORY	
Executive	<input type="checkbox"/>
Administrative	<input checked="" type="checkbox"/>
Engineering/Operations	<input type="checkbox"/>

FINANCIAL			
Expenditures?	Yes	<input checked="" type="checkbox"/>	No <input type="checkbox"/> N/A <input type="checkbox"/>
Budgeted?	Yes	<input checked="" type="checkbox"/>	No <input type="checkbox"/> N/A <input type="checkbox"/>
Amount:		\$	<u>227,194.00</u>

- Attachments:
1. Resolution 14-6-18A
  2. Consultant Agreement for Services #14-50-06

**COMMENTS:**

On March 12, 2014, the District requested proposals from four (4) firms on the MRSC Consultant Roster to provide the consulting services to update the District's Comprehensive Water System Plan.

District management and key staff reviewed the proposals and interviewed the consultants and selected Carollo Engineers, Inc. as the most qualified firm