

RESOLUTION NO. 1559

A RESOLUTION ADOPTING FINDINGS, AUTHORIZING AN EXEMPTION FROM COMPETITIVE BIDDING AND AWARDING A CONTRACT TO BROWN AND CALDWELL FOR AN UPDATE TO THE CITY WATER MASTER PLAN

Recitals:

- A. Brown and Caldwell completed the City's last water master plan in 2008 and retains the most up to date hydraulic model of the City's water system in collaboration with the Medford Water Commission.
- B. Brown and Caldwell has completed two updates to the model since the original 2008 study to look at expansion of the Urban Growth Boundary (Tolo Area) and has analyzed the city's need for additional water reservoir locations.
- C. Brown and Caldwell is a qualified consultant and has personnel resources ready to complete the master plan within the next 9-12 months.
- D. Attached hereto as Exhibit A hereto, the City finds that an exemption from competitive bidding to award a contract to Brown and Caldwell meetings the requirements of ORS 279B.085 for special procurements.

The City of Central Point resolves as follows:

Section 1. The findings attached hereto as Exhibit A are hereby adopted and an exemption from competitive bidding is authorized.

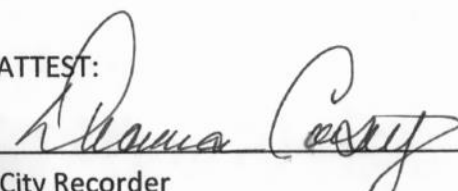
Section 2. A contract in the form attached hereto as Exhibit B is hereby awarded to Brown and Caldwell for up to \$174,000 for the water master plan update, split into two phases. Phase 1 in the 18/19 FY budget and Phase 2 in the 19/21 FY Budget.

Section 3. This exemption is granted under the provisions of Oregon Revised Statutes 279B.085.

Passed by the Council and signed by me in authentication of its passage this 8th day of November, 2018.


Mayor Hank Williams

ATTEST:


City Recorder

RESOLUTION NO. ____ - EXHIBIT A

FINDINGS

Pursuant to ORS 279B.085 – Special Procurements, the following facts support an exemption from competitive solicitation for Updating the City Water Master Plan:

- Exempting this project is unlikely to encourage favoritism in the awarding of public contracts or to substantially diminish competition for public contracts:
 - a) Brown and Caldwell (“Brown”) has the specialized technical skills, expertise and resources to provide the City with a cost-effective update to the City Water Master Plan (“Plan”).
 - b) Brown is uniquely qualified with in-depth knowledge of the City’s existing Plan.
 - c) Brown was under contract with City and completed the Plan in 2008 as well as two updates to the model for the Tolo Area since the original Plan and has previously analyzed the City’s need for additional water reservoir locations.
 - d) The Plan is in need of further updates to be completed in 2 phases over the 18/19 FY budget and the 19/21 budget.
 - e) Brown is a qualified consultant and has the personnel resources available to ensure completion of the master plan within the next 9-12 months.
- Exempting this project is reasonably expected to result in substantial cost savings to the contracting agency or to the public:
 - a) Brown’s familiarity with the City’s Plan and water reservoir location needs enables it to efficiently provide Plan updates that will result in significant cost savings for the City.
 - b) Cost savings are achieved through the continuity of using the same team which has familiarity with the Plan, the updates and the future needs of the City.
 - c) Any change of contractor to update the Plan would require a substantial effort by the contractor to learn the existing Plan and prior analysis that resulted in such plan.
- Public notice of the approval of a special procurement must be given:
 - a) Public notice of the exemption from competitive solicitation was published on City’s website beginning ____

AGREEMENT FOR CONSULTING SERVICES
BETWEEN the City of Central Point
AND BROWN AND CALDWELL
FOR Water System Master Plan Update Phase 1

THIS AGREEMENT is made and entered into on this _____ day of _____, 20__ by and between City of Central Point, hereinafter referred to as "Client," and Brown and Caldwell, a California corporation, its affiliates and subsidiaries, hereinafter referred to as "Consultant."

RECITALS:

WHEREAS, Client is authorized to and desires to retain Consultant to update the water system hydraulic model;

WHEREAS, Consultant has available and offers to provide personnel and facilities necessary to perform the desired services within the required time; and

WHEREAS, Client desires to retain Consultant to perform the services in the manner, at the time, and for the compensation set forth herein;

NOW, THEREFORE, Client and Consultant agree as follows:

I. DESCRIPTION OF PROJECT

Client and Consultant agree that Project is as described in Exhibit A, entitled "Scope of Work." If, during the course of Project, Client and Consultant agree to changes in Project, such changes shall be incorporated in this Agreement by written amendment.

II. SCOPE OF CONSULTANT SERVICES

Consultant agrees to perform those services described hereafter. Unless modified in writing by both parties, duties of Consultant shall not be construed to exceed those services specifically set forth herein.

A. Basic Services

Consultant agrees to perform those basic services described in Exhibit A entitled "Scope of Work" (the "Services"). Any tasks not specifically described in Exhibit A are Additional Services.

B. Additional Services

Client shall pay Consultant all fees and costs incurred in performing Additional Services provided the services were either (a) authorized by Client, or (b) required to be performed due to emergency conditions at the project site. Client will be deemed to have authorized the Additional Services if Consultant provides Client with notification that the Additional Services will be performed and Client does not object within five (5) working days after notification. Unless otherwise agreed in writing, Additional Services shall be performed

in accordance with Consultant's standard billing rates at the time the Additional Services are performed.

C. Litigation Assistance

Unless specifically stated therein, the Scope of Services does not include assistance to support, prepare, document, bring, defend, or assist in litigation undertaken or defended by Client. All such services required or requested of the Consultant by Client or any third party (except claims between Client and Consultant) will be reimbursed at Consultant's applicable rates for such litigation services.

D. Document Productions

In the event Brown and Caldwell is requested pursuant to subpoena or other legal process to produce its documents or any other information relating to Brown and Caldwell's services under this agreement in judicial or administrative proceedings to which Brown and Caldwell is not a party, Client shall reimburse Brown and Caldwell at standard billing rates for its time and expenses incurred in responding to such requests.

III. RESPONSIBILITIES OF CLIENT

In addition to payment for the Services performed under this Agreement, Client shall:

1. Assist and cooperate with Consultant in any manner necessary and within its ability to facilitate Consultant's performance under this Agreement.
2. Designate in writing a person to act as Client's representative with respect to this Agreement. Such person shall have complete authority to transmit instructions, receive information, interpret and define Client's policies, make decisions and execute documents on Client's behalf.
3. Furnish Consultant with all technical data in Client's possession including, but not limited to, maps, surveys, drawings, soils or geotechnical reports, and any other information required by, or useful to, Consultant in performance of its Services under this Agreement. Consultant shall be entitled to rely upon the information supplied by Client.
4. Notify Consultant of any known or potential health or safety hazards existing at or near the project site.
5. Provide access to and/or obtain permission for Consultant to enter upon all property, whether or not owned by Client, as required to perform and complete the Services.
6. If Consultant's scope of work includes services during construction, Client will require the construction contractor to indemnify and hold harmless Consultant, its officers, employees, agents, and consultants against claims, suits, demands, liabilities, losses, damages, and costs, including reasonable attorneys' fees and all other costs of defense, arising out of the performance of the work of the contractor, breach of contract, or willful misconduct of the contractor or its subcontractors, employees, and agents.

Client will require the contractor to name Consultant, its directors, officers and employees as additional insureds on the contractor's general liability insurance and/or Owner's and

Contractor's Protective policy (OCP), and any builder's risk, or other property insurance purchased by Client or the contractor to protect work in progress or any materials, supplies, or equipment purchased for installation therein.

Client will furnish contractor's certificates of insurance evidencing that Consultant, its officers, employees, agents, and consultants are named as additional insureds on contractor's general liability and property insurance applicable to the Project. Contractor's policies shall be primary and any such insurance carried by the Consultant shall be excess and noncontributory. The certificates shall provide that Consultant be given 30 days' written notice prior to any cancellation thereof.

IV. AMERICANS WITH DISABILITIES ACT

Any other provision of this Agreement to the contrary notwithstanding, unless otherwise specified in the Scope of Services, Client shall have sole responsibility as between Client and Consultant for compliance with the Americans With Disabilities Act ("ADA") 42 U.S.C. 12101 et. Seq. and the related regulations.

V. AUTHORIZATION AND COMPLETION

In signing this Agreement, Client grants Consultant specific authorization to proceed with work specified in Exhibit A. The estimated time for completion is by December 31, 2019. Consultant shall use its best efforts to perform the work specified in Exhibit A within the estimated time.

VI. COMPENSATION

A. Amount

For the Services described in Exhibit A, Client agrees to pay, and Consultant agrees to accept compensation in accordance with Exhibit B. Where Consultant has provided Client with a breakdown of the total compensation into subtasks, such breakdowns are estimates only. Consultant may reallocate compensation between tasks, provided total compensation is not exceeded without the approval of Client.

B. Payment

As long as Consultant has not defaulted under this Agreement, Client shall pay Consultant within 30 days of the date of Consultant's invoices for services performed and reimbursable expenses incurred under this Agreement. If Client has reason to question or contest any portion of any such invoice, amounts questioned or contested shall be identified and notice given to Consultant, within 15 days of the date of the invoice. Any portion of any invoice not contested shall be deemed to be accepted and approved for payment and shall be paid to Consultant within 30 days of the date of the invoice. Client agrees to cooperate with Consultant in a mutual effort to resolve promptly any contested portions of Consultant's invoices.

In the event any uncontested portions of any invoice are not paid within 30 days of the date of Consultant's invoice, interest on the unpaid balance shall accrue beginning with the 31st day at the maximum interest rate permitted by law, and Consultant shall have the right to suspend work per Article XV, Suspension of Work.

VII. RESPONSIBILITY OF CONSULTANT

A. Standard of Care—Professional Services

Subject to the express provisions of the agreed scope of work as to the degree of care, amount of time and expenses to be incurred, and subject to any other limitations contained in this Agreement, Consultant shall perform its Services in accordance with generally accepted standards and practices customarily utilized by competent engineering firms in effect at the time Consultant's Services are rendered. Consultant does not expressly or impliedly warrant or guarantee its Services.

B. Reliance upon Information Provided by Others

If Consultant's performance of services hereunder requires Consultant to rely on information provided by other parties (excepting Consultant's subcontractors), Consultant shall not independently verify the validity, completeness, or accuracy of such information unless otherwise expressly engaged to do so in writing by Client.

C. Consultant's Opinion of Probable Costs (Cost Estimate)

Client acknowledges that construction cost estimates, financial analyses and feasibility projections are subject to many influences including, but not limited to, price of labor and materials, unknown or latent conditions of existing equipment or structures, and time or quality of performance by third parties. Client acknowledges that such influences may not be precisely forecasted and are beyond the control of Consultant and that actual costs incurred may vary substantially from the estimates prepared by Consultant. Consultant does not warrant or guarantee the accuracy of construction or development cost estimates.

D. Construction Phase Services

1. Consultant's Activities at Construction Site. The presence of Consultant's personnel at a construction site, whether as on-site representative, resident engineer, construction manager, or otherwise, does not make Consultant responsible for those duties that belong to Client and/or construction contractors or others, and does not relieve construction contractors or others of their obligations, duties, and responsibilities, including, but not limited to, construction methods, means, techniques, sequences, and procedures necessary for completing all portions of the construction work in accordance with the contract documents, any health or safety programs and precautions required by such construction work, and any compliance with applicable laws and regulations. Any inspection or observation of the contractor's work is solely for the purpose of determining that the work is generally proceeding in conformance with the intent of the project specifications and contract documents. Consultant makes no warranty or guarantee with respect to the performance of a contractor. Consultant has no authority to exercise control over any construction contractor in connection with their work or health or safety programs and precautions. Except to protect Consultant's own personnel and except as may be expressly required elsewhere in the scope of services, Consultant has no duty to inspect, observe, correct, or report on health or safety deficiencies of the construction contractor.
2. Shop Drawing and Submittal Review. If required by Consultant's Scope of Services, Consultant shall review shop drawings or other contractor submittals for general conformance with the intent of the contract documents. Consultant shall not be

required to verify dimensions, to engineer contractor's shop drawings or submittals, nor to coordinate shop drawings or other submittals with other shop drawings or submittals provided by contractor.

3. Record Drawings. Record drawings, if required, will be prepared, in part, on the basis of information compiled and furnished by others, and may not always represent the exact location, type of various components, or exact manner in which the Project was finally constructed. Consultant is not responsible for any errors or omissions in the information from others that are incorporated into the record drawings.

VIII. ASSIGNMENT OF TASKS TO AFFILIATES

- A. If the authorized scope of work includes construction activities or the oversight of construction, Consultant may, at its discretion and upon notice to Client, assign all of its contractual rights and obligations with respect to such activities or services to Brown and Caldwell Constructors, its wholly owned affiliate.
- B. If the authorized scope of work requires professional services to be performed in a jurisdiction in which Consultant renders professional services solely through a locally registered engineering affiliate for purposes of compliance with professional licensing requirements in that jurisdiction, Consultant may, in its discretion, upon notice to Client, assign its contractual rights and obligations with respect to such activities or services to such locally registered engineering affiliate.

IX. ASBESTOS/HAZARDOUS MATERIALS

Consultant and Consultant's subcontractors shall have no responsibility for the discovery, handling, removal, or disposal of or exposure of persons to asbestos or hazardous or toxic materials that are present in any form at the Project site. Professional services related to or in any way connected with the investigation, detection, abatement, replacement, use, specification, or removal of products, materials, or processes containing asbestos or hazardous or toxic materials are beyond the scope of this Agreement. Client shall be solely responsible for notifying all appropriate governmental agencies, including the potentially effected public, of the existence of any hazardous or toxic materials located on or in the project site at any time.

In the event Consultant encounters asbestos or hazardous materials at the jobsite, Consultant may, at its option and without liability for damages, suspend the performance of services on the Project until such time as Client and Consultant mutually agree on an amendment to this Agreement to address the issue, or Client retains another specialist consultant or contractor to identify, classify, abate and/or remove the asbestos and/or hazardous materials.

X. CONSULTANT'S WORK PRODUCT

A. Scope

Consultant's work product which is prepared solely for the purposes of this Agreement, including, but not limited to, drawings, test results, recommendations and technical specifications, whether in hard copy or electronic form, shall become the property of Client when Consultant has been fully compensated as set forth herein. Consultant may keep copies of all work product for its records.

Consultant and Client recognize that Consultant's work product submitted in performance of this Agreement is intended only for the project described in this Agreement. Client's alteration of Consultant's work product or its use by Client for any other purpose shall be at Client's sole risk, and Client shall hold harmless and indemnify Consultant against all losses, damages, costs and expense, including attorneys' fees, arising out of or related to any such alteration or unauthorized use.

B. Electronic Copies

If requested, solely as an aid and accommodation to Client, Consultant may provide copies of its work product documents in computer-readable media ("electronic copies," "CADD"). These documents will duplicate the documents provided as work product, but will not bear the signature and professional seals of the registered professionals responsible for the work. Client is cautioned that the accuracy of electronic copies and CADD documents may be compromised by electronic media degradation, errors in format translation, file corruption, printing errors and incompatibilities, operator inexperience and file modification. Consultant will maintain the original copy, which shall serve as the official, archived record of the electronic and CADD documents. Client agrees to hold harmless, indemnify and defend Consultant from any claims arising out of or relating to any unauthorized change or alteration of electronic copies and CADD documents.

XI. INDEMNIFICATION

A. Indemnification of Client

Consultant agrees to indemnify and hold Client harmless from and against any liability to the extent arising out of the negligent errors or negligent omissions of Consultant, its agents, employees, or representatives, in the performance of Consultant's duties under this Agreement.

B. Consequential Damages

Regardless of any other term of this Agreement, in no event shall either party be responsible or liable to the other for any incidental, consequential, or other indirect damages.

XII. CONSULTANT'S INSURANCE

Consultant shall procure and maintain the following minimum insurance:

1. Commercial general liability insurance, including personal injury liability, blanket contractual liability and broad-form property damage liability coverage. The combined single limit for bodily injury and property damage shall be not less than \$1,000,000.
2. Automobile bodily injury and property damage liability insurance covering owned, non-owned, rented, and hired cars. The combined single limit for bodily injury and property damage shall be not less than \$1,000,000.
3. Statutory workers' compensation and employer's liability insurance as required by state law.
4. Professional liability insurance. The policy limit shall be not less than \$1,000,000.

Client shall be named as additional insured on policies 1 and 2 above. Upon request, a certificate of insurance will be provided to Client with a 30-day written notice in the event the above policies are cancelled.

XIII. CONFIDENTIALITY

Consultant agrees it will maintain the confidentiality of material it receives from Client which Client has clearly identified as "Confidential" and will not disclose, distribute, or publish to any third party such confidential information without the prior permission of Client. Notwithstanding the foregoing, Consultant shall have no confidentiality obligation with respect to information that:

- 1) becomes generally available to the public other than as a result of disclosure by Consultant or its agents or employees;
- 2) was available to Consultant on a non-confidential basis prior to its disclosure by Client;
- 3) becomes available to Consultant from a third party who is not, to the knowledge of Consultant, bound to retain such information in confidence.

In the event Consultant is compelled by subpoena, court order, or administrative order to disclose any confidential information, Consultant shall promptly notify Client and shall cooperate with Client prior to disclosure so that Client may take necessary actions to protect such confidential information from disclosure.

XIV. SUBCONTRACTS

Consultant shall be entitled, to the extent determined appropriate by Consultant, to subcontract any portion of the services to be performed under this Agreement.

XV. SUSPENSION OF WORK

Work under this Agreement may be suspended as follows:

1. By Client. By written notice to Consultant, Client may suspend all or a portion of the Work under this Agreement if unforeseen circumstances beyond Client's control make normal progress of the Work impracticable. Consultant shall be compensated for its reasonable expenses resulting from such suspension including mobilization and demobilization. If suspension is greater than 30 days, then Consultant shall have the right to terminate this Agreement in accordance with Article XVI, Termination of Work.
2. By Consultant. By written notice to Client, Consultant may suspend the Work if Consultant reasonably determines that working conditions at the Site (outside Consultant's control) are unsafe, or in violation of applicable laws, or in the event Client has not made timely payment in accordance with Article VI, Compensation, or for other circumstances not caused by Consultant that are interfering with the normal progress of the Work. Consultant's suspension of Work hereunder shall be without prejudice to any other remedy of Consultant at law or equity.

XVI. TERMINATION OF WORK

- A. This Agreement may be terminated by Client as follows: (1) for its convenience on 30 days' notice to Consultant, or (2) for cause, if Consultant materially breaches this

Agreement through no fault of Client and Consultant neither cures such material breach nor makes reasonable progress toward cure within 15 days after Client has given written notice of the alleged breach to Consultant.

B. This Agreement may be terminated by Consultant as follows: (1) for cause, if Client materially breaches this Agreement through no fault of Consultant and Client neither cures such material breach nor makes reasonable progress toward cure within 15 days after Consultant has given written notice of the alleged breach to Client, or (2) upon five days' notice if work under this Agreement has been suspended by either Client or Consultant for more than 30 days in the aggregate.

C. Payment upon Termination

In the event of termination, Consultant shall perform such additional work as is reasonably necessary for the orderly closing of the Work. Consultant shall be compensated for all work performed prior to the effective date of termination, plus work required for the orderly closing of the Work, including: (1) authorized work performed up to the termination date plus termination expenses, including all labor and expenses, at Consultant's standard billing rates, directly attributable to termination; (2) all efforts necessary to document the work completed or in progress; and (3) any termination reports requested by Client.

Except for termination of Consultant by Client for cause, Consultant shall also receive a termination fee equal to 15 percent of the total compensation yet to be earned under existing authorizations at the time of termination to account for Consultant's rescheduling adjustments, reassignment of personnel, and related costs incurred due to termination.

XVII. ASSIGNMENT

This Agreement is binding on the heirs, successors, and assigns of the parties hereto. Except as otherwise set forth under Article VIII, Assignment of Tasks to Affiliates, this Agreement may not be assigned by Client or Consultant without prior, written consent of the other.

XVIII. NO BENEFIT FOR THIRD PARTIES

The services to be performed by Consultant are intended solely for the benefit of Client, and no benefit is conferred on, nor contractual relationship established with any person or entity not a party to this Agreement. No such person or entity shall be entitled to rely on Consultant's services, opinions, recommendations, plans, or specifications without the express written consent of Consultant. No right to assert a claim against the Consultant, its officers, employees, agents, or consultants shall accrue to the construction Contractor or to any subcontractor, supplier, manufacturer, lender, insurer, surety, or any other third party as a result of this Agreement or the performance or nonperformance of the Consultant's services hereunder.

XIX. FORCE MAJEURE

Consultant shall not be responsible for delays caused by circumstances beyond its reasonable control, including, but not limited to (1) strikes, lockouts, work slowdowns or stoppages, or accidents, (2) acts of God, (3) failure of Client to furnish timely information or to approve or disapprove Consultant's instruments of service promptly, and (4) faulty performance or nonperformance by Client, Client's independent consultants or contractors, or governmental agencies. Consultant shall not be liable for damages arising out of any such delay, nor shall the Consultant be deemed to be in breach of this Agreement as a result thereof.

XX. INTEGRATION

This Agreement represents the entire understanding of Client and Consultant as to those matters contained herein. No prior oral or written understanding shall be of any force or effect with respect to those matters covered herein. This Agreement may not be modified or altered except in writing signed by both parties. Any purchase order issued by Client, whether or not signed by Consultant, and any terms and conditions contained in such purchase order which are inconsistent with this Agreement shall be of no force and effect.

XXI. SEVERABILITY

If any part of this Agreement is found unenforceable under applicable laws, such part shall be inoperative, null, and void insofar as it conflicts with said laws, but the remainder of this Agreement shall be in full force and effect.

XXII. CHOICE OF LAW/JURISDICTION

This Agreement shall be administered and interpreted under the laws of the state in which the BC office responsible for the project is located. Jurisdiction of litigation arising from the Agreement shall be in that state.

XXIII. ATTORNEYS' FEES

In the event either party commences legal proceedings against the other, then the prevailing party shall, in addition to any other recovery, be entitled to recover its reasonable attorneys' fees and all other costs of such proceeding.

XXIV. NOTICES

All notices required under this Agreement shall be delivered by facsimile, personal delivery or mail and shall be addressed to the following persons:

Jacob Young
Project Manager
Brown and Caldwell
6975 Union Park Center Suite 490
Midvale, UT 84047
Fax: 801-565-7330

Matt Samitore
Parks and Public Works Director
City of Central Point
140 South Third Street
Central Point, OR 97502
Fax: 541-664-6384

Notice shall be effective upon delivery to the above addresses. Either party may notify the other that a new person has been designated by it to receive notices, or that the address or Fax number for the delivery of such notices has been changed, provided that, until such time as the other party receives such notice in the manner provided for herein, any notice addressed to the previously-designated person and/or delivered to the previously-designated address or Fax number shall be effective.

XXV AUTHORIZATION

The persons executing this Agreement on behalf of the parties hereto represent and warrant that the parties have all legal authority and authorization necessary to enter into this Agreement, and that such persons have been duly authorized to execute this Agreement on their behalf.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first above written.

Brown and Caldwell

City of Central Point

Signature



Signature

Printed Name Jacob Young

Printed Name

Title Project Manager

Title

Federal Tax ID number: 94-1446346

Exhibit A - Phase 1 - Scope of Work

Introduction

This project is the first phase to update the Water System Master Plan (WSMP) for the City of Central Point, Oregon (City). Brown and Caldwell (BC) will update the water system hydraulic model developed for the previous master plan and use it to determine if previously identified projects are still appropriate and develop new projects. BC will also update demands, perform a water quality assessment, and summarize the City's water rights assessment into the master plan report. BC will perform a business case evaluation to develop a long-range capital program for the City's water system. A written report will reflect the results of this project, and a formal presentation of those results will be made to the City. The following scope of work lists the portion of this effort that will be performed in this phase.

Task 1 Project Management

Task 1.1 Administer Project and Schedule

BC will provide a Project Management Plan and will direct, coordinate, and monitor the activities of the project with respect to budget, schedule, and contractual obligations.

Task 1.2 Project Kickoff Meeting

BC will initiate the project with a kickoff meeting via web conference. BC will prepare an agenda for the kickoff meeting, collect water system data, and discuss the project schedule.

Task 1.3 Provide Project Coordination

BC will conduct regular progress conference calls or meetings with City personnel to review project progress, issues to be resolved, early study results, etc. Because master plan studies evolve over the course of the project, BC will work to ensure that the City personnel and BC team members remain "on the same page" regarding study direction, objectives, and deliverables.

Task 1.4 Conduct Quality Assurance/Quality Control (QA/QC) Reviews

BC will conduct internal QA/QC meetings and follow-up with technical experts as necessary during the project. All deliverables will receive internal QA/QC checking or peer review.

Task 2 Update Water System Demands and Storage Analysis

Task 2.1 Calculate existing demands and allocate

BC will use customer billing data provided by the City to determine the per capita use rate and unit use rate. BC will use data provided by the City from the pump station flows, tank levels, and MWC master meters to calculate maximum day demand, average day demand, and updated diurnal demand patterns.

Demand allocation includes the assignment of existing system demands to the appropriate locations in the model. The flow recorded at each customer meter will be assigned to the closest node in the model and scaled so that the total system demand matches the estimated total supply from MWC.

Fire flow demands will be based on the fire flow rates established for each land use type in the existing master plan. It is assumed that updated GIS data of existing and future land use is available to update the fire flow allocation to each hydrant in the system.

Task 2.2 Calculate future demands and allocate

Future demands will be calculated using population projections provided by the City and per capita use rates calculated for Task 1.3.1. Future demands will be added to the model in areas where growth is expected to occur.

Task 2.3 Storage Analysis

Perform a storage analysis to determine the amount of available storage compared with the required storage and how the system will be affected by the demolition of the Shops tank and addition of Taylor-West development.

Assumptions

- The City will provide monthly customer billing data and updated future demand projections.
- The City will provide hourly or shorter duration SCADA data required for diurnal pattern development.
- The City will provide 5-year, 20-year, and buildout population projections for calculating future demand.

Task 3 Field Testing and Facility Update

Task 3.1 Update water model with new facilities/controls

BC will verify the accuracy of facility location, sizing, and controls in the model. It is anticipated that only minor model revisions will be needed. BC's lead modeler will spend up to 24 hours updating and verifying the model facilities and controls. The City will provide GIS data of water mains, valves, pumps, and tanks that are not represented in the model, including planned near-term projects. BC will add all missing projects to the model from the GIS data provided. Pump curves will also be provided by the City for BC to verify that the appropriate curves are included in the model.

BC will summarize the control valve settings, isolation valve closures, tank level controls, and pump On/Off settings from the existing model for review by the distribution system operations manager. City operators will provide corrections to the controls to reflect the current control strategy for each demand condition. A model scenario will be created for each demand condition and the documented control strategies will be added to the appropriate scenario.

Task 3.2 Field testing plan

BC will submit a calibration field testing plan to the City for review. The plan will specify the testing locations and procedures, SCADA data that must be provided for the calibration efforts, and the equipment that will be required to perform the testing. City staff will review the plan to determine if testing locations or procedures need to be modified to prevent property damage, health and safety risks, or service disruptions. BC will revise the plan based on City comments and oversee the field testing activities to capture the information required to calibrate the model.

Task 3.3 Perform field testing

The testing will include up to 4 hydrant tests, as well as testing at each master meter (3) and pump station (2). A City vehicle and two City staff to operate the system facilities will be required for the testing. Two days of effort from distribution system operators will be required to perform the field tests. A BC employee will accompany the distribution system operators and supervise the testing.

Task 4 High-Priority Evaluations

Task 4.1 Shops PS Location Analysis

Task 4.1.1 Discuss Shops PS Relocation Options

Discuss options with the City for an alternate Shops PS location. Will include a web conference to discuss preliminary options and limitations. BC will investigate the feasibility of the alternatives and select up to 5 alternatives to investigate using the hydraulic model.

Task 4.1.2 Model Analysis

Model analysis of up to 5 PS location alternatives. For each alternative, BC will use the model to investigate the system performance with respect to pressure, operational controls, and additional facilities required.

Task 4.1.3 Document Results

Preliminary result for the analysis will be provided to the City via a web conference. BC will prepare a technical memorandum to fully document the results.

Task 4.2 Taylor-West Expansion Analysis

Task 4.2.1 Add model scenario

BC's lead modeler will spend up to 8 hours updating and verifying the piping and demands associated with this project. The City will provide GIS data of water mains, valves, pumps, and tanks that are not represented in the model, including planned near-term projects.

Task 4.2.2 Model analysis

BC will evaluate the distribution system using the hydraulic model to determine its capacity to deliver water to the Taylor-West area under peak demand and under fire flow conditions, both for existing demands and buildout demands. Any deficiencies discovered in the distribution system that are not addressed by the existing CIP will be identified.

Task 4.2.3 Document Results

Preliminary result for the analysis will be provided to the City via a web conference. BC will prepare a technical memorandum to fully document the results.

Assumptions

- Evaluation will be considered preliminary and subject to change with the completion of the Task 5 and 6 evaluations
- City will evaluate source capacity and associated water rights, BC will only evaluate delivery capacity to the development

- Criteria developed for the previous master plan will be used for evaluation
- Buildout evaluation will be based on the CIP from the previous master plan