

PROFESSIONAL SERVICES AGREEMENT

THIS PROFESSIONAL SERVICES AGREEMENT is made and entered into, to be effective the 11 day of June, 2019, by and between the CITY OF GARDEN GROVE, a municipal corporation, hereinafter referred to as "City," and West Yost Associates, a California Corporation, hereinafter referred to as "Consultant." City and Consultant are sometimes hereinafter individually referred to as "Party" and hereinafter collectively referred to as the "Parties."

RECITALS

WHEREAS, City has determined that there is a need for Professional Engineering Services for the preparation of the City of Garden Grove's 2019 Water Master Plan Update (the "Project");

WHEREAS, City desires to retain Consultant to provide such services; and

WHEREAS, Consultant is qualified by virtue of experience, training, education, and expertise to perform the professional services required by this Agreement and has agreed to provide such services.

NOW, THEREFORE, in consideration of the promises and mutual benefits which will result to the Parties in carrying out the terms of this Agreement, it is mutually agreed as follows:

AGREEMENT

I. SCOPE OF WORK

City agrees to retain Consultant, and Consultant agrees to perform the services set forth in the Scope of Services described in Exhibit "A", attached hereto and by reference made a part of this Agreement (hereinafter the "Services"). Consultant agrees that its provision of Services under this Agreement shall be within accepted standards within the profession, and its specialized services shall be in accordance with customary and usual practices in Consultant's profession. By executing this Agreement, Consultant represents that it has carefully considered how the work should be performed and fully understands the facilities, difficulties, and restrictions attending performance of the work under this Agreement.

II. TERM

This Agreement shall be effective as of the date first set forth above. This Agreement shall commence upon the effective date of this Agreement, and shall remain and continue in effect until tasks described herein are completed unless otherwise terminated prior to this date pursuant to the provisions of this Agreement.

III. FEES

A. Accounting Records

Consultant shall keep complete, accurate, and detailed accounts of all time, costs, expenses, and expenditures pertaining in any way to this Agreement. Upon request of City, Consultant shall provide City with all records pertaining to this Agreement.

B. Total Payment

The Parties agree that Consultant shall bill for the Services provided by Consultant to City on an hourly basis and in accordance with the charges and fee schedule attached as Exhibit "B," except as otherwise set forth herein, provided compensation under this Agreement shall not exceed \$1,019,287.

C. Monthly Payment

1. City agrees to pay Consultant monthly, in accordance with the payment rates and terms and the schedule of payment, as set forth in Exhibit "B," attached hereto based upon actual time spent providing the services outlined in this Agreement. Consultant shall submit to City monthly or periodic statements requesting payment. Such requests shall be based upon the amount and value of the Services performed by Consultant under this Agreement and shall be prepared by Consultant and accompanied by such reporting data including a detailed breakdown of all costs incurred and tasks performed during the period covered by the statement, as may be required by City. City shall use reasonable efforts to make payment to Consultant within forty-five (45) days after the date of the invoice or as soon thereafter as reasonably practicable. If City determines that the approved written Scope of Work under this Agreement or any specified task hereunder is incomplete, the City Manager, or his or her designee, shall notify Consultant and may withhold the payment amount for the unfinished work accordingly.

2. Consultant shall not be compensated for any services rendered in connection with its performance of this Agreement, which are in addition to those set forth herein, unless such additional services are authorized in advance and in writing by the City Manager.

IV. TERMINATION

City may terminate this Agreement for its convenience at any time, with or without cause, in whole or in part, upon giving Consultant thirty (30) days written notice. Upon said notice, City shall pay Consultant its allowable costs incurred to date of termination and those allowable costs determined by City to be reasonably necessary to effect such termination. Upon receipt of said notice, Consultant shall immediately cease all work under this Agreement, unless the notice provides otherwise. If City terminates a portion of this Agreement, such termination shall not make void or invalidate the remainder of this Agreement. Thereafter, Consultant shall have no further claims against City under this Agreement. Upon termination of the Agreement pursuant to this Section, Consultant will submit an invoice to City pursuant to Section 3. Consultant may terminate this Agreement, with or without cause, upon thirty (30) days written notice to City.

V. DEFAULT OF CONSULTANT

A. Consultant's failure to comply with the provisions of this Agreement shall constitute a default. In the event Consultant is in default, except as provided for in Section XXI, City shall have no obligation or duty to continue compensating Consultant for any work performed after the date of default and can terminate the Agreement immediately upon written notice to Consultant.

B. If the City Manager, or his/her designee, determines that Consultant is in default in the performance of any of the terms or conditions of this Agreement, it shall notify Consultant in writing of such default. Consultant shall have ten (10) days to cure the default by rendering a satisfactory performance. In the event Consultant fails to cure its default within such period of time, City shall have the right, notwithstanding any other provision of this Agreement, to terminate this Agreement without further notice and without prejudice of any remedy to which City may be entitled at law, in equity or under this Agreement. Consultant shall be liable for any and all reasonable costs incurred by City as a result of such default including, but not limited to, procurement costs of the same or similar services defaulted by Consultant under this Agreement.

VI. LEGAL RELATIONSHIP BETWEEN THE PARTIES

A. The legal relationship between the Parties hereto is that of an independent contractor, and nothing herein shall be deemed to make Consultant a City employee. During the performance of this Agreement, Consultant and its officers, employees, and agents shall act in an independent capacity and shall not act as City officers, employees, or agents. The personnel performing the Services under this Agreement on behalf of Consultant shall at all times be under Consultant's exclusive direction and control. Neither City nor any of its officers, employees, or agents shall have control over the conduct of Consultant or any of its officers, employees, or agents, except as set

forth in this Agreement. Consultant, its officers, employees, or agents shall not maintain an office or any other type of fixed business location at City's offices.

B. Consultant shall not incur or have the power to incur any debt, obligation, or liability against City, or bind City in any manner.

C. No City benefits shall be available to Consultant, its officers, employees, or agents in connection with any performance under this Agreement. Except for fees paid to Consultant as provided for in this Agreement, City shall not pay salaries, wages, or other compensation to Consultant for the performance of Services under this Agreement. City shall not be liable for compensation or indemnification to Consultant, its officers, employees, or agents for injury or sickness arising out of performing Services hereunder. If for any reason, any court or governmental agency determines that City has financial obligations, other than pursuant to Section III herein, of any nature related to salary, taxes, or benefits of Consultant's officers, employees, servants, representatives, subcontractors, or agents, Consultant shall indemnify City for all such financial obligations.

VII. MODIFICATIONS AND AMENDMENTS TO AGREEMENT

No modification or amendment of this Agreement or any of the provisions hereof shall be effective for any purpose unless set forth in writing signed by duly authorized representatives of both Parties.

VIII. ASSIGNMENTS AND SUBCONTRACTING

The experience, knowledge, capability, and reputation of Consultant, its principals and employees were a substantial inducement for City to enter into this Agreement. Consultant may not assign the performance of this Agreement, nor any part thereof, nor any monies due hereunder, voluntarily or by operation of law, without the prior written approval of City. Except as otherwise expressly provided in the Scope of Services (Exhibit "A"), Consultant shall not contract with any other person or entity to perform the Services required without written approval of City. If Consultant is permitted to subcontract any part of this Agreement by City, Consultant shall be responsible to City for the acts and omissions of its subcontractor as it is for persons directly employed. Nothing contained in this Agreement shall create any contractual relationships between any subcontractor and City. City will deal directly with and will make all payments to Consultant as provided for in Section III.

IX. SUCCESSORS IN INTEREST

This Agreement shall be binding upon and inure to the benefit of the Parties' successors and assignees.

X. THIRD PARTY BENEFICIARY

Except as may be specifically provided for herein, nothing contained in this Agreement is intended to confer, nor shall this Agreement be construed as conferring, any rights, including, without limitation, any rights as third-party beneficiary or otherwise, upon any entity or person not a party hereto.

XI. INSURANCE

A. Insurance Required

Consultant shall procure and maintain the insurance described herein for the duration of this Agreement, or as otherwise specified herein, against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder by Consultant, its agents, representatives, or employees. Insurance required herein shall be provided by a reputable insurance company in good standing with the State of California and having a minimum A.M. Best's Guide Rating of A-, Class VII or better. City will require Consultant to substitute any insurer whose rating drops below the levels specified herein. Such substitution shall occur within twenty (20) days of written notice to Consultant by City.

Consultant shall provide to City certificates of insurance in a form acceptable to City indicating the deductible or self-retention amounts and the expiration date of the policy, and shall provide renewal certificates not less than ten (10) days prior to the expiration of each policy term. The certificates of insurance shall specifically identify this Agreement and shall contain express conditions that City is to be given at least thirty (30) days advance written notice of any material modification in or termination of insurance. Such insurance shall be primary to and not contributing with any other insurance maintained by City of Garden Grove and/or its respective councilmembers, officers, officials, employees, agents, and volunteers. The insurance shall name the City of Garden Grove and its respective councilmembers, officers, officials, employees, agents and volunteers as additional insureds by endorsement to the insurance policies. Except as expressly authorized herein, all insurance shall be on an occurrence basis.

1. Errors and Omissions Insurance

Consultant shall maintain in full force and effect throughout the term of this Agreement, standard industry form professional negligence errors and omissions insurance coverage in an amount of not less than One Million Dollars (\$1,000,000.00) per claim or per occurrence and Two Million Dollars (\$2,000,000.00) aggregate, in accordance with the provisions of this Section. If the policy of insurance is written on a "claims made" basis, the policy shall be continued in full force and effect at all times during the term of this Agreement, and for a period of three (3) years from the date of the completion of the Services provided hereunder. In the event of termination of the policy during this period, Consultant shall obtain continuing insurance coverage for the

prior acts or omissions of Consultant during the course of performing Services under the terms of this Agreement. The coverage shall be evidenced by either a new policy evidencing no gap in coverage, or by obtaining separate extended "tail" coverage with the present or new carrier.

In the event the policy of insurance is written on an "occurrence" basis, the policy shall be continued in full force and effect during the term of this Agreement, or until completion of the Services provided for in this Agreement, whichever is later. In the event of termination of the policy during this period, new coverage shall be obtained for the required period to ensure coverage for the prior acts of Consultant during the course of performing the Services under the terms of this Agreement.

2. Workers' Compensation

Consultant shall obtain and maintain, during the term of this Agreement, Workers' Compensation Employer's Liability Insurance in the statutory amount as required by state law. Such worker's compensation insurance shall be endorsed to provide for a waiver of subrogation against City of Garden Grove, its respective councilmembers, officers, officials, agents, employees, and volunteers.

B. Minimum Limits of Insurance

Consultant shall maintain limits no less than:

1. General Liability:

\$1,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit. **(claims made and modified occurrence policies are not acceptable)**; Insurance companies must be acceptable to CITY and have an AM Best's Guide Rating of A-, Class VII or better, as approved by the CITY.

2. Automobile Liability:

\$1,000,000 per accident for bodily injury combined single limit. **(claims made and modified occurrence policies are not acceptable)**; Insurance companies must be acceptable to CITY and have an AM Best's Guide Rating of A-, Class VII or better, as approved by the CITY.

3. Employer Liability:

\$1,000,000 per accident for bodily injury or disease. (claims made and modified occurrence policies are not acceptable); Insurance companies must be acceptable to CITY and have an AM Best's Guide Rating of A-, Class VII or better, as approved by the CITY.

C. Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to and approved by the Risk Manager. At the option of the Risk Manager, either the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the City of Garden Grove, and its councilmembers, officials, officers, employees, agents and volunteers, or Consultant shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses, or Consultant shall otherwise provide an alternative satisfactory to the Risk Manager.

D. Other Insurance Provisions

The general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

1. The City of Garden Grove and its respective councilmembers, officers, officials, employees, agents and volunteers are to be covered as insureds with respect to: liability arising out of activities and work performed by or on behalf of Consultant; products and completed operations of Consultant; premises owned occupied or used by Consultant; and automobiles owned, leased, hired, or borrowed by Consultant. The coverage shall contain no special limitations on the scope of protection afforded to the Garden Grove Sanitary District, the City of Garden Grove, the Garden Grove Agency for Community Development and their respective councilmembers, board members, officers, officials, employees, agents, and volunteers.

2. For any claims related to this Agreement, Consultant's coverage shall be primary insurance as respects the City and its councilmembers, officers, officials, employees, agents, and volunteers. Any insurance or self-insurance maintained by Garden Grove Sanitary District, the City of Garden Grove, and their respective councilmembers, board members, officers, officials, employees, agents, and volunteers shall be in excess of Consultant's insurance and shall not contribute with it.

3. Any failure to comply with reporting or other provisions of the policies, including breaches of warranties shall not affect coverage provided to the City of Garden Grove and its respective councilmembers, board members, officers, officials, employees, agents, and volunteers.

4. Consultant's insurance 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.

5. Each insurance policy required by this Section shall be endorsed to state that coverage shall not be suspended, voided, cancelled by either party, reduced in coverage or in limits, except after thirty (30) days prior written notice by certified mail, return receipt requested, has been provided to City.

6. Consultant agrees to ensure that subcontractors, and any other parties involved with the project who are brought onto or involved in the project by Consultant, provide the same minimum insurance coverage required of Consultant. Consultant agrees to monitor and review all such coverage and assumes all responsibility for ensuring that such coverage is provided in conformity with the requirements of this Section. Consultant agrees that upon request, all agreements with subcontractors and others engaged in the project will be submitted to City for review.

E. Verification of Coverage

Consultant shall furnish City with original endorsements effecting coverage required by this Agreement. The endorsements are to be signed by a person authorized by that insurer to bind coverage on its behalf. All endorsements are to be received and approved by City before work commences.

If CONSULTANT maintains higher insurance limits than the minimums shown above, CONSULTANT shall provide coverage for the higher insurance limits otherwise maintained by the CONSULTANT

XII. INDEMNITY

A. Indemnification

To the fullest extent permitted by law including California Civil Code 2782.8, Consultant shall indemnify, protect and hold harmless the City of Garden Grove and its respective councilmembers, officers, officials, employees, agents, and volunteers, (individually "Indemnified Party"; collectively "Indemnified Parties") against any and all liability, claims, judgments, costs, and demands (collectively, "Claims"), including Claims arising from injuries or death of persons (Consultant's employees included) and damage to property, which to the extent Claims arise out of, pertain to, or are related to the negligence, recklessness or willful misconduct of Consultant, its agents, employees, or subcontractors, or arise from Consultant's negligent, reckless performance of or failure to perform any term, provision, covenant or condition of this Agreement ("Indemnified Claims"), but Consultant's liability for Indemnified Claims shall be reduced to the extent such Claims arise from the negligence, recklessness or willful misconduct of the City of Garden Grove and its councilmembers, officers, directors, officials, employees, or agents.

Consultant's liability for indemnification hereunder is in addition to any liability Consultant may have to City for a breach by Consultant of any of the provisions

of this Agreement. Under no circumstances shall the insurance requirements and limits set forth in this Agreement be construed to limit Consultant's indemnification obligation or other liability hereunder. The terms of this Agreement are contractual and the result of negotiation between the parties hereto. Accordingly, any rule of construction of contracts (including, without limitation, California Civil Code Section 1654) that ambiguities are to be construed against the drafting party, shall not be employed in the interpretation of this Agreement.

Consultant's indemnification obligation hereunder shall survive the expiration or earlier termination of this Agreement until all actions against the Indemnified Parties for such matters indemnified hereunder are fully and finally barred by the applicable statute of limitations or, if an action is timely filed, until such action is final. This provision is intended for the benefit of third party Indemnified Parties not otherwise a party to this Agreement.

XIII. COMPLIANCE WITH LAW

A. Consultant certifies by the execution of this Agreement the following: that it pays employees not less than the minimum wage as defined by law and that it does not discriminate in its employment with regard to race, color, religion, sex, age, marital status, ancestry, or national origin; that Consultant is in compliance with all federal and state laws, local directives, and executive orders regarding non-discrimination in employment; and that Consultant agrees to demonstrate positively and aggressively the principle of equal opportunity in employment.

B. Consultant shall keep itself informed of State and Federal laws and regulations, which in any manner affect those employed by it or in any way affect the performance of its Services pursuant to this Agreement. Consultant shall at all times observe and comply with all such applicable laws and regulations. The City of Garden Grove and its respective councilmembers, officers, employees, and agents shall not be liable at law or in equity for Consultant's failure to comply with such laws and regulations.

XIV. LICENSES AND QUALIFICATIONS

Consultant represents and warrants to City that it has obtained all licenses, permits, qualifications, and approvals of whatever nature that are legally required to practice its profession. Consultant represents and warrants to City that Consultant shall, at its sole cost and expense, keep in effect at all times during the term of this Agreement, any license, permit, or approval, which is legally required for Consultant to perform Services under this Agreement.

XV. CONFIDENTIALITY AND OWNERSHIP OF DOCUMENTS

A. All information gained by Consultant in the performance of this Agreement shall be considered confidential and shall not be released by Consultant without City's prior written authorization. Consultant, its officers, employees, agents or subcontractors shall not without written authorization from the City Manager or unless requested by City's Attorney, voluntarily provide declarations, letters of support, testimony at depositions, response to interrogatories, or other information concerning the Services performed under this Agreement or relating to any project or property location within City. Response to a subpoena or court order shall not be considered "voluntary" for the purposes of this Section, provided Consultant gives City proper notice of such subpoena or court order. Consultant shall properly notify City of any summons, complaints, subpoenas, notice of deposition, request for documents, interrogatories, requests for admissions or other discovery requests received by Consultant, its officers, employees, agents or subcontractors, related to Services performed pursuant to this Agreement. City retains the right, but has no obligation, to represent Consultant and/or be present at any deposition, hearing, or similar proceeding, the cost of which shall be borne by City. Consultant agrees to cooperate fully with City and to provide City with an opportunity to review and respond to discovery requests provided by Consultant, arising out of Services performed pursuant to this Agreement. However, City's right to review any such request or response does not imply or mean City has the right to control, direct, write or rewrite said response.

B. The documents and study materials for this project shall become the property of City upon the termination or completion of the work. Consultant agrees to furnish to City copies of all memoranda, correspondence, computation, and study materials in its files pertaining to the work described in this Agreement, which is requested in writing by City.

XVI. INTERPRETED UNDER LAWS OF THE STATE OF CALIFORNIA

This Agreement and any dispute arising hereunder shall be governed and interpreted in accordance with the laws of the State of California. This Agreement shall be construed as a whole according to its fair language and common meaning to achieve the objectives and purposes of the parties hereto, and the rule of construction to the effect that ambiguities are to be resolved against the drafting party shall not be employed in interpreting this Agreement, all parties having been represented by counsel in the negotiation and preparation hereof. Venue for any litigation concerning this Agreement shall be in the Superior Court for the County of Orange, California.

XVII. ATTORNEYS' FEES

If any action at law or in equity is necessary to enforce or interpret the terms of this Agreement, the prevailing Party shall be entitled to reasonable attorneys' fees,

costs, and necessary disbursements in addition to any other relief to which they may be entitled.

XVIII. WAIVER

No waiver of any provision of this Agreement shall be effective unless in writing and signed by a duly authorized representative of the Party against whom enforcement of a waiver is sought. Any waiver by the Parties of any default or breach of any covenant, condition, or term contained in this Agreement, shall not be construed to be a waiver of any subsequent or other default or breach, nor shall failure by the Parties to require exact, full, and complete compliance with any of the covenants, conditions, or terms contained in this Agreement be construed as changing the terms of this Agreement in any manner or preventing the Parties from enforcing the full provisions hereof.

XIX. NOTICES

All notices or other communications required or permitted hereunder shall be in writing and shall be personally delivered, sent by registered or certified mail, postage prepaid, return receipt requested, or delivered or sent by electronic transmission, and shall be deemed received upon the earlier of: (i) the date of delivery to the address of the person to receive such notice if delivered personally or by messenger or overnight courier; (ii) three (3) business days after the date of posting by the United States Post Office if by mail; or (iii) when sent if given by electronic transmission. Any notice, request, demand, direction, or other communication sent by electronic transmission must be confirmed within forty-eight (48) hours by letter mailed or delivered. Notices or other communications shall be addressed as follows:

To City: City of Garden Grove
13802 Newhope Street
Garden Grove, CA 92843
Attention: Project Engineer

To Consultant: West Yost Associates _____
2185 North California Blvd., _____
Suite 315 _____
Attention: Charles Duncan _____

Either Party may, by written notice to the other, designate a different address, which shall be substituted for that specified above.

XX. ENTIRE AGREEMENT

This Agreement constitutes the entire agreement between the parties and supersedes all prior negotiations, arrangements, representations, and understandings, if

any, made by or among the parties with respect to the subject matter hereof. No amendments or other modifications of this Agreement shall be binding unless executed in writing by both parties hereto, or their respective successors, assigns, or grantees.

XXI. FORCE MAJEURE

If either party shall be delayed or prevented from the performance of any service under this Agreement by reason of acts of God, strikes, lockouts, labor troubles, restrictive governmental laws or regulations or other cause, without fault and beyond the reasonable control of the party obligated (financial inability excepted), performance of such act shall be excused for the period of delay, and the period for performance of any such act shall be extended for a period equivalent to the period of such delay.

XXII. TIME IS OF THE ESSENCE

The Parties agree that time is of the essence of this Agreement with respect to the deadlines set forth herein.

XXIII. SEVERABILITY

Whenever possible, each provision of this Agreement shall be interpreted in such a manner as to be effective and valid under applicable law, but if any provision of this Agreement shall be invalid under the applicable law, such provision shall be ineffective only to the extent of such prohibition or invalidity, without invalidating the remainder of that provision, or the remaining provisions of this Agreement.

XXIV. PROHIBITED INTERESTS

Consultant covenants that, for the term of this Agreement, no Board Member, official, officer or employee of City during his/her tenure in office/employment, or for one (1) year thereafter, shall have any interest, direct or indirect, in this Agreement or the proceeds thereof. Consultant warrants that it has not given or paid and will not give or pay any third party money or other consideration for obtaining this Agreement.

XXV. SCOPE CHANGES

In the event of a change in the scope of the proposed project, as requested by City, the Parties hereto shall execute an addendum to this Agreement, setting forth, with particularity, all terms of the new Agreement, including but not limited to any additional Consultant's fees.

XXVI. NON-LIABILITY OF CITY OFFICERS AND EMPLOYEES

No officer or employee of the City or City of Garden Grove shall be personally liable to the Consultant, or any successor in interest, in the event of any default or breach by the City or for any amount which may become due to the Consultant or its successor, or for breach of any obligation of the terms of this Agreement.

XXVII. AGREEMENT EXECUTION AUTHORIZATION

Each of the undersigned represents and warrants that he or she is duly authorized to execute and deliver this Agreement and that such execution is binding upon the entity for which he or she is executing this Agreement.

XXVIII. RECITALS

The Recitals above are hereby incorporated into this section as though fully set forth herein and each party acknowledges and agrees that such Party is bound, for purposes of this Agreement, by the same.

IN WITNESS WHEREOF, this Agreement has been executed in the name of City, by its officers thereunto duly authorized, and Consultant as of the day and year first above written.


CITY OF GARDEN GROVE

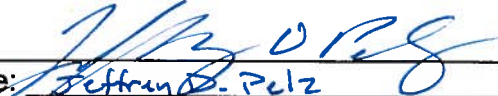
By: _____
Scott C. Stiles
City Manager

ATTEST:

By: _____
Teresa Pomeroy
City Clerk

West Yost Associates

By: 
Name: Charles Duncan
Title: President & CEO

By: 
Name: Jeffrey D. Pelz
Title: Chairman of the Board

If CONTRACTOR is a corporation, a Corporate Resolution and/or Corporate Seal is required. If a Partnership, Statement of Partnership must be submitted to CITY.

APPROVED AS TO FORM:

Woodruff, Spradlin & Smart


By: 
City of Garden Grove
City Attorney

EXHIBIT A

SCOPE OF SERVICES

Exhibit A. Scope of Work

The scope of work for the 2019 Water Master Plan Update includes the following tasks:

- Task 1. Project Management
- Task 2. Data Collection
- Task 3. Water Demand Projections
- Task 4. Water Supply and Storage
- Task 5. Update Hydraulic Model
- Task 6. System Analysis
- Task 7. CIP Development
- Task 8. Water Master Plan Report
- Task 9. Water Facilities Assessment (Optional)
- Task 10. SCADA Evaluation (Optional)
- Task 11. Asset Management Plan (Optional)
- Task 12. Risk and Resilience Assessment (Optional)

Each task includes the task objective, the work subtasks, task assumptions and task deliverables.

Task 1. Project Management

Objective: Manage staff work efforts to provide high quality work products and timely service.

Task 1.1 Project Schedule and Monthly Progress Reports

Submit an initial schedule with pertinent milestones for the major tasks involved in the Project. Update schedule monthly, or more often, as required. Submit Monthly Project Progress Reports that provide a summary of the project's progress for the most recent calendar month and include the following as a minimum: summary of work completed by task, list of proposed activities for the upcoming month, list of pending information needed to support the planned activities for the upcoming month, list of out of scope items, percent complete/budget status summary, and an updated project schedule showing work completed through the reporting period and any revisions to the overall project schedule.

Task 1.2 Project Kickoff Meeting

Coordinate and attend a Project Kick off meeting with City staff, with Project Manager, Project Engineer and other key staff. Prepare and submit an agenda one week in advance of the meeting. Use a sign-in sheet to record attendance at the meeting. Within one week after the meeting, provide Meeting Minutes to the City.

Task 1.3 Monthly Progress Meetings

Meet monthly with the City during the Project. Assign appropriate engineering specialty staff or principals or arrange for appropriate subcontractors to accompany the Project Manager, to attend meetings with the City. Prepare and submit a meeting agenda to the City at least one week in advance of the meeting. Within one week after the meeting, provide meeting minutes to the City for review.

Task 1.4 Bi-Weekly Project Updates

Provide bi-weekly updates via email that summarize work progress, list critical data collection items needed to support the ongoing work, identify items impacting the project schedule and any other relevant project issues. Review updates in bi-weekly check-in conference calls between City Project Manager, West Yost Project Manager, and Project Engineer.

Task 1.5 Quality Control

Provide internal QA/QC of all submittals prior to submitting to the City. QA/QC is budgeted in technical tasks.

Task 1.6 Project Coordination/Communication

Set up a web-based collaborative Sharepoint site for team members to access project data, project meeting agendas, minutes, and project deliverables. Conduct internal kickoff to coordinate amongst teams.

TASK 1 DELIVERABLES:

- Meeting agendas and minutes
- Monthly progress reports
- Monthly invoices and project schedules
- Workshop presentation materials
- Bi-weekly e-mail project updates and conference call check-in notes

TASK 1 ASSUMPTIONS:

- Assumed total project duration of thirteen months

Task 2. Data Collection

Objective: Collect, catalog and document data used in the Master Plan Analysis

Task 2.1 Collect and Review Data

The data collection effort will include, but not be limited to, the following:

- As-Built drawings, records, and project files
- Historical annual water production and water use, consolidated by billing class, for 2013 through 2018
- Currently planned or designed capital improvement projects
- Customer water use data by account and service address for a three- to five-year period to be determined in consultation with the City
- Usable reservoir capacities based on the City's latest production and operational records

Prepare and maintain a list of items requested, the person responsible to collect the information, when it is needed by, and when it was provided. Prioritize the Data Collection List to identify those items needed immediately versus items that will be needed later.

Task 2.2 Informational Interviews

Gather information from informational interviews, including:

- Interviewing staff - engineering, field and operational personnel to understand current system constraints/issues, areas of focus for the analysis. Staff interviews will be paired with the Project Kickoff meeting, either as part of the meeting, or a separate meeting on the same day
- Gathering information from other departments, agencies and companies (i.e. Garden Grove Fire Department for the latest fire flow requirement)

Task 2.3 Prepare Draft Chapters

Prepare draft chapter describing the existing distribution system, including pressure zones, system supplies, key facilities (pump stations, reservoirs), and pipeline statistics. Prepare draft chapter summarizing references. Update the references chapter, as information is gathered during the project.

TASK 2 DELIVERABLES

- Weekly updates of the data collection list
- Draft Existing System chapter (5 hard copies, 1 electronic copy)
- Revised Existing System chapter in tracked changes, incorporating City comments (1 electronic copy)

TASK 2 ASSUMPTIONS

- City to provide single consolidated set of comments on draft chapter

Task 3. Water Demands

Objective: Develop demand projections based on the latest General Plan and Specific Plan land use, population and employment information for the City service area and bracket the range of anticipated demand conditions for the planning horizon.

Task 3.1 Summarize Historical Water Usage

Summarize the City's historical water production and consumption. Summarize seasonal water usage patterns. Identify large water users. Derive peaking factors and 24-hour diurnal demand curves of the existing water system (diurnal curves budgeted in Task 5).

Task 3.2 Meet with City Planning Division

Meet with the City's Planning Division staff to obtain and review available growth projection information, including General Plan and Specific Plan land use plans, re-development areas, existing and forecasted population and employment for the City, and estimated timing for future development.

Task 3.3 Develop Unit Use Factors

Review the previously established water demand factors and update using historical billing data and land use planning data to allow forecasting of future water usage and modeling of the system.

Task 3.4 Prepare Water Demand Projections

Develop land use-based projections and compare and validate with population-based projections. Work with the City to select the most appropriate demand projections for integration into the Water Master Plan. Use projected water demands, as reviewed and agreed to by the City, in the hydraulic model update and development of the recommended Capital Improvement Plan. Relate projected potable water demand to growth in equivalent dwelling units.

Task 3.5 Water Demand Projection Sensitivity

Evaluate sensitivity of projected water use to different water conservation goals, including currently adopted SB x7-7 per capita water use targets, already established indoor use targets from SB 606 and AB 1668 and possible outdoor targets based on 2015 Model Water Efficient Landscape Ordinance updates.

Task 3.6 Prepare Draft Chapter

Prepare draft chapter summarizing results of the demand analysis, including tabulations of existing and future water demands and peaking factors in tabular and graphical formats.

TASK 3 DELIVERABLES

- Draft Water Demand chapter (5 hard copies, 1 electronic copy)
- Revised Water Demand chapter in tracked changes, incorporating City comments (1 electronic copy)

TASK 3 ASSUMPTIONS

- The approach relies on available information from the City Planning Division regarding timing of type of future development plans within the City service area
- The City will provide available monthly production and metered water use, consolidated by billing

class (2013 through 2018), detailed consumption records for the last three years (2016 through 2018), or other three-year period selected in consultation with the City

- City to provide single consolidated set of comments on draft chapter

Task 4. Water Supply Evaluation

Objective: Verify the adequacy of existing sources to meet current and buildout demands.

Task 4.1 Current and Future Supplies

Summarize existing supply sources, including supply capacities and reliability. Summarize normal year and dry-year supply reliability, using information from the City's and MWDOC's 2015 Urban Water Management Plans. Verify the adequacy of the existing sources to meet current system water demands as well as the build-out demands as developed in Task 3.

Task 4.2 Emergency Supply Capabilities

Summarize the City's existing emergency supply capability, including emergency power generators, emergency pumps, supply redundancy, and inter-ties with adjacent cities and water agencies. Work with City staff to define emergencies to be evaluated, such as MWD outages and duration, local power outage, etc. Prepare mass balance analysis to evaluate the adequacy of supplies to meet different emergency conditions. Identify improvements needed to meet emergency scenarios.

Task 4.3 Prepare Draft Chapter

Prepare draft chapter summarizing current and future supply capacity and reliability to meet demands during normal operations and emergencies.

TASK 4 DELIVERABLES

- Draft Water Supply chapter (5 hard copies, 1 electronic copy).
- Revised Water Supply report chapter in tracked changes, incorporating City comments (1 electronic copy).

TASK 4 ASSUMPTIONS

- City to provide up-to-date information on supply capacities and emergency supply capabilities.
- Reliability evaluation to be based on 2015 UWMP documents or more recent analysis, if available.
- City to provide single consolidated set of comments on draft chapter.

Task 5. Update Hydraulic Model

Objective: Update the hydraulic model to accurately depict system operations and use meaningful naming conventions for model queries, query sets, datasets and scenarios

Task 5.1 Model Update

Convert the existing model to the InfoWater platform. Use the data collected to update the hydraulic model to fully represent the City's water distribution system. Evaluate and suggest additional changes to the model if necessary to help better represent the City's water distribution system. The model update shall include, but not be limited to, the following:

- Update demand nodes with the latest demand projections including new peaking factors that were developed
- Identify and specify input for all large water users (7 gpm or 5,000 ccf/yr, or larger)
- Update fire flow requirements and input fire flow demands by land use, based on City, fire department, Insurance Service Office (ISO), or others if required by the City of Garden Grove Fire Department
- Update facility sites with latest pump data and controls to represent the City's normal operation. Currently, the steady state scenario that is being used by the City models the facility sites using flow control valves only

- Review facility as-builts and update facilities piping, as needed
- Remove unused data sets
- Update queries, query sets, data sets, and scenarios, as needed, with meaningful naming conventions for the ease of use by the City
- Use Facility Manager with specialized queries to select facilities to activate for each scenario based on values in several fields including Year Installed and Year Retired
- Use West Yost’s hydrant database to review/update preliminary pipeline C-values, as needed
- Update well and booster pump station pump curves, as needed, using operational data from SCADA (pump flow, suction pressure (or pumping groundwater level), and discharge pressure, and SCE pump testing data, if available.
- Develop diurnal curves for maximum day and average day scenarios

Task 5.2 Model Static Calibration

Prepare a draft calibration plan for hydrant testing and submit to the City for review. Identify the locations for fire flow necessary to accurately calibrate the model. Coordinate with the City to conduct the calibration testing.

Develop computer model simulations or scenarios for each of the fire flow calibration tests. Model results from the calibration simulations shall be compared with the field data and measured against the calibration criteria. Comparisons that fall outside the established criteria shall be identified and adjustments and/or corrections to the model shall be made until satisfactory results are obtained. Model deviation shall not be more than 5 to 10 percent, or 10 psi, than the field data.

Task 5.3 Model Extended Period Simulation Calibration

Summarize extended period simulation (EPS) calibration criteria for review with the City. Develop diurnal curves for the EPS calibration day. Perform 24-hour EPS calibration of the model, comparing modeling results to SCADA data, making adjustments, as needed to obtain satisfactory results. Budgeting includes one calibration for system operations during peak summer conditions.

Task 5.4 Prepare Model Update Report Appendix

Prepare draft writeup summarizing model update, static and extended period simulation calibrations for City review. Writeup to be prepared as a report appendix.

Task 5.5 Model Training

Provide one-day (4 to 6 hour) training of the updated model to the City.

Task 5.6 Model Technical Support

Provide technical support to the City for troubleshooting run errors, setting up new run scenarios for one year after acceptance of the final model. Budgeting assumes 8 hours per month for technical support.

TASK 5 DELIVERABLES

- Draft static calibration plan for City review and acceptance
- EPS calibration criteria for City review and acceptance
- Report appendix summarizing model setup, basis of input data, assumptions, and calibration efforts (5 hard copies, one electronic copy)
- Electronic model files
- Training handouts

TASK 5 ASSUMPTIONS

- The pipeline network will only require updating at facilities
- Hydrant testing over a two-day period, conducting approximately 16 tests
- City personnel will assist in performing the flow tests, and have overall responsibility for operating/closing valves, de-chlorinating flow, conducting traffic control during the tests and obtaining

any necessary permits

- City to provide SCADA data for static and EPS calibrations
- City to provide InfoWater license(s) for training attendees
- City to provide single consolidated set of comments on draft appendix

Task 6 System Analysis

Objective: Evaluate the existing and future system under a variety of demand scenarios to identify system deficiencies and propose system improvements.

Task 6.1 Establish Water System Performance Criteria

Develop water system performance criteria to be used to identify system deficiencies. Base criteria for determining system deficiencies and sizing improvements for the water system on the City's previous master plan. Expected criteria include maximum allowable velocities and head loss; minimum storage volumes for operational, fire and emergency storage; firm pumping capacity; and minimum and maximum pressures under different demand conditions. Summarize fire flow demands collected in Task 1.

Task 6.2 Existing System Analysis

Evaluate the distribution system under existing demand conditions. Evaluate pump station and storage requirements, comparing pump station and storage sizing with Water Master Plan criteria to verify the adequacy of existing facilities. Use the hydraulic model to assess system hydraulic performance for the following demand conditions/scenarios, comparing system performance with Water Master Plan criteria:

- Fire Flow Availability: Maximum day demand plus fire flow (static simulation) to evaluate system-wide fire flow capabilities
- Normal Operations: Maximum day demand extended period simulation to evaluate system performance
- Emergency Operations: Average day demand (or other selected demand condition) to evaluate various outage scenarios. Budgeting assumes up to six scenarios, to be developed based on review of previous master plan, and consultation with the City
- Identify deficiencies and recommended improvements based on the analysis

Task 6.3 Future System Analysis

Update the model to include future demands, as identified in Task 3, and improvements identified in Existing System Analysis. Use the hydraulic model to assess system hydraulic performance for the same scenarios as for the Existing System Analysis. Identify any additional improvements needed to meet buildout demand conditions.

Task 6.4 Prepare Draft Chapters

Prepare draft report chapters summarizing criteria to be used for the analysis, and existing and buildout system evaluations.

TASK 6 DELIVERABLES

- System Planning Criteria chapter (5 hard copies, 1 electronic copy).
- Existing and Future System Analysis chapter (5 hard copies, 1 electronic copy).
- Revised chapters in tracked changes, incorporating City comments (1 electronic copy)

TASK 6 ASSUMPTIONS

- City to provide single consolidated set of comments on draft chapters

Task 7. Capital Improvement Program

Objective: Prepare prioritized Capital Improvement Program that has flexibility for the City to adapt to available funding.

Task 7.1 CIP Cost Basis

Summarize the cost estimating methodology and conceptual-level unit costs to be used for the analysis. Identify the construction contingencies, implementation multipliers and cost basis (Engineering News Record Construction Cost Index) to be used for costs. Provide narrative writeup to be included in the Water Master Plan as an appendix.

Task 7.2 CIP Development

Establish a 5-year, 10-year, 15-year, and 20-year Water Capital Improvement Program (CIP). Include in the CIP improvements required for the City's water system to meet all of the established performance criteria. Include in the CIP pipeline replacements based on their life span.

Provide ranking, phasing, and cost estimates for all the required improvements. Include site acquisition, engineering, construction, and other contingencies in all cost estimates. Include a table listing of CIP projects by project ID, project type, pipe diameter, pipe length, unit cost, total cost, and other pertinent information in the CIP.

Task 7.3 Prepare Draft Chapter

Prepare draft report chapter that summarizes the capital improvement program, including CIP summary table, discussion of ranking procedure and criteria, and phasing requirements for improvements. Draft chapter to be submitted as part of the draft Water Master Plan Report

TASK 7 DELIVERABLES

- Draft Appendix summarizing cost estimating basis (5 hard copies, 1 electronic copy)
- Draft CIP chapter (in Draft Water Master Plan Report)

TASK 7 ASSUMPTIONS

- City to provide single consolidated set of comments on draft appendix and draft CIP chapter

Task 8. Prepare Water Master Plan Report

Objective: Document the evaluations conducted in the previous tasks and prepare a draft and final Master Plan Report.

Task 8.1 Water Master Plan Report Outline

Prepare outline of draft water master plan report.

Task 8.2 Draft Water Master Plan Report

Make any necessary updates in the tracked changes versions of individual report chapters and compile into a draft Master Plan Report. Hold review meeting with City to receive comments on the draft report.

Task 8.3 Screen Check Final Report

Prepare screen-check final report, incorporating comments from City review of the draft report.

TASK 8 DELIVERABLES

- Report Outline, 5 hard copies, one electronic copy
- Draft Water Master Plan Report, 10 hard copies
- Screen Check Final Report, one electronic copy
- Final Report, 15 hard copies and 2 electronic copies

TASK 8 ASSUMPTIONS

- City to provide single consolidated set of comments on draft report, and screen check final report

Task 9. Water Facilities Assessment (Optional)

Objective: Prepare a comprehensive evaluation of the City’s vertical assets to identify improvements required to maintain or improve the assets.

Task 9.1 Data Review and Preparation

Review available information for each facility, including site layout, geotechnical report(s), survey information, and design drawings and specifications to determine the design criteria and standards used to design each facility. Compare this information with current design standards to ascertain potential deficiencies, mostly related to seismic and building codes. Use this information to pre-populate condition evaluation forms to streamline the on-site evaluations.

Task 9.2 Workshop and Site Visits

Upon completion of the review of available information, meet with City staff, including engineering, operations, and maintenance, at City offices to review each facility. This meeting is vital to determine any ongoing operational and maintenance issues, and to determine possible improvements City staff would like to implement to improve safety, accessibility, operations, and maintenance. At the conclusion of this meeting, visit each site for an investigation. Attention will be given to the condition of the various components in each facility including, but not limited to, the items listed in the table to the right, as appropriate. As part of the site assessment and follow up research, review the consequence and likelihood of failure to establish facility criticality.

Task 9.3 Prepare Condition Assessment

Report

Prepare a Draft Report summarizing evaluation, findings and recommendations. Include all recommended improvements identified by the condition assessment. Use the results from analyses and evaluations conducted as part of other Water Master Plan tasks to prioritize the recommended rehabilitation/replacement improvements. Integrate the prioritized rehab/replacement plan into the CIP developed

The condition assessment will focus the investigations and evaluations on the well equipment and above-ground facilities as are easily visible from the surface.

MECHANICAL (ALL EQUIPMENT AND PIPING)

- Valves (air relief valves, gate valves, butterfly valves, etc.)
- Hydro-pneumatic tanks (where applicable)
- Compressors (where applicable)
- Piping
- Pump control valves
- Gauges
- Freeze protection
- Painting/protective coatings
- Venting (louvers)
- Heating and Air Conditioning

ELECTRICAL AND INSTRUMENTATION

- Motors and Engines
- VSDs
- Motorized Actuators
- Conduits
- Flow meters
- Lighting
- Generator (emergency power)
- Telemetry or SCADA
- Alarm switches

STRUCTURAL

- Roof
- Pump/piping supports and electrical pedestals
- Access hatches (equipment removal)
- Painting/protective coatings
- Motion sensors

GENERAL SITE

- Egress and ingress
- Drainage
- Pavement
- Noise audit/monitoring (if located in residential area – nuisance concern)
- Security
- Video surveillance

As a part of Task 7.

Submit the Draft Report to the City for review and meet with City staff, with Task Lead in attendance, and supporting members participating by phone, as needed, to discuss and incorporate review comments on the draft.

Upon receipt of the City's review comments, prepare and submit the Final Report.

TASK 9 DELIVERABLES

- Workshop notes
- Draft Condition Assessment forms and report (5 hard copies, 1 electronic copy)
- Final Condition Assessment forms and report, incorporating City comments, included as a Master Plan appendix

TASK 9 ASSUMPTIONS

- Assessment shall be done for each of the 13 well sites and the five pump station sites
- Evaluations do not include the below ground structures of the water supply wells or piping

Task 10. SCADA Evaluation (Optional)

Objective: Provide a practical and implementable SCADA Master Plan that incorporates industry cybersecurity best practices.

Complete a comprehensive evaluation of the City's existing SCADA system as part of this Project. It is the City's desire to modernize the SCADA system for its water facilities. The assessment and evaluation shall include a description of the City's existing SCADA system, cyber security and vulnerability, and shall provide recommendations for system upgrade.

West Yost understands that they City's water system is not fully automated at this time. While the City would like to modernize, rightsizing automation is important to being resilient to cyber attacks. West Yost will leverage Idaho National Laboratory's Consequence-Centered, Cyber-Informed Engineering (CCE) methodology on behalf of the City. The CCE methodology emphasizes traditional engineering and staffing practices compared to cybersecurity practices (e.g. password management) to improve cyber resilience.

Task 10.1 Kickoff Meeting

Conduct an on-site kickoff meeting followed by an interactive session that includes a live demonstration of the potential consequences of a cyber-attack against a water utility. During the meeting, the Consultant will facilitate a discussion with the City to update the goals, vision, and objectives for the SCADA system. There will be a high level of audience participation and interaction using West Yost's Cybersecurity Laboratory (Cyber-Lab). The Cyber-Lab demonstration, together with group discussions and presented materials, will emphasize the potential for water system vulnerabilities and approaches that water utilities can use to increase the security of their facilities, infrastructure, and supply reliability. Site visits to be conducted under Task 10.2 – Discovery will immediately follow the kickoff meeting.

Task 10.2 Discovery

Collect all relevant information required to conduct a thorough vulnerability assessment of the City's SCADA infrastructure.

SUBTASK 10.2.1 DATA COLLECTION

Conduct interviews with key City personnel, including systems administrators, network administrators, and business staff to gather information on the network, system and application elements of the SCADA system. Conduct site visits to collect configurations from firewalls, routers, or gateway appliances that form the perimeter of the network, and collect inventory of hardware devices (e.g. servers, network devices, workstations, etc.).

Connect laptops to a mirrored port on the switches at select locations, work with the local networking team to establish a span port, and then capture traffic for approximately 5 to 10 minutes, or until a minimum of 20 MB of traffic is logged. Review if the appropriate policies, procedures, roles, controls and protections are in place to properly manage system and network access. Test systems and devices that contain access controls for security hardening.

SUBTASK 10.2.2 REVIEW POLICIES AND PROCEDURES

Review the City's existing SCADA and Information Technology Security Policies. The review of the policies and procedures will be to determine if all required policies are in existence. Conduct a Policies and Procedures Review Workshop to review roles and responsibilities for IT and SCADA system personnel. Develop As-Is and To-Be Recommended Roles and Responsibilities Matrix documents and review with City staff. West Yost understands that any recommendations to policies and procedure that can change working conditions must be coordinated with existing City HR policies.

SUBTASK 10.2.3 DOCUMENT FINDINGS

Create preliminary As-Is Network Design document and As-Is System Architecture Design document based on the Discovery Phase. Conduct an As-Is Review Workshop to review the preliminary findings with the City.

MEETINGS

- Up to 5 interviews with City Staff
- Site visits over 3 days
- Policies and Procedures Review Workshop
- As-Is Review Workshop

DELIVERABLES

- Recommended Roles and Responsibilities Matrix document
- Site Visit Summary Report
- Preliminary Findings Report
- As-Is Network document

ASSUMPTIONS AND CONSTRAINTS

- Interviews with up to 5 City staff over a period of one week
- Capture data from up to 4 connection points at 3 locations
- City technical staff is available typically Monday through Thursday. City staff can be made available for multiple West Yost teams to visit sites concurrently as needed
- Collect photos and documentation as part of this task that can be used to support Task 2 and Task 10.2.1

Task 10.3 Assessment

Assess in detail the data gathered in previous tasks to provide an in-depth assessment of the current system security posture and make recommendations.

TASK 10.3.1 DATA REVIEW AND GAP ANALYSIS

Review all information gathered in interviews, meetings, and site visits to develop baseline assessments for network security, system security and application security, including policies and procedures as they relate to each area. Each baseline analysis will provide a findings summary, gap analysis and potential impact summary and preliminary recommended changes. Develop a Draft Baseline Assessment and Gap Analysis Document and provide to the City for review and comment. Conduct a Baseline Assessment and Gap Analysis Workshop to review the draft report.

Network security will include review of DMZ configuration and setup, verification of remote access design and configuration, and review of existing policies applicable to the network. System security will focus on review of access controls, credential management, controls for privileged users (administrators), system logging, auditing and monitoring, patch management, operating system hardening and roles and responsibilities, and all policies and procedures related to system security. Application security will focus on review of SCADA system software

configuration (setting and implementation), Active Directory integration and data exchange methods between SCADA and IT systems.

As part of this task, develop two key documents:

- SCADA System Communications Architecture Diagram: An “As-Is” picture of the current system will be developed documenting all communications systems used to transmit SCADA data throughout the City, based on documentation provided by the City and site visits. A “To-Be” document will be developed to demonstrate the recommended network changes will be developed for review by the City.
- SCADA Software and Hardware Architecture Diagram: An “As-Is” picture of the current SCADA software configuration and hardware components will be developed based on documentation provided by the City. The document will detail all SCADA software installations and basic configuration. A “To-Be” document will be developed based on the SCADA Vision, Goals and Objectives documents demonstrating the recommended system changes for review by the City.

Immediately following the Policies and Procedures workshop, work with City staff to evaluate current network and practices using the AWWA Cybersecurity Guidance & Tool. This workshop utilizes the AWWA tool to conduct a use-case analysis of the City’s current cybersecurity practices. The output from the tool is a prioritized list of recommended cybersecurity controls based on industry standards including the National Institute of Standards and Technology (NIST) Cybersecurity Framework. The workshop will serve to train City staff on the use of the tool to allow City staff to continue use of the tool as improvements and changes to the system are implemented. Work with the City team to compare the existing system controls with the recommended Priority 1 controls generated by the AWWA Cybersecurity Tool. Identify controls that are not in place or require improvements.

Organize and facilitate a Baseline Assessment and Gap Analysis with the City to review the Draft Baseline Assessment and Gap Analysis Document. Submit the Draft Baseline Assessment and Gap Analysis Document to the City for review and comment. As part of this workshop, work with the City to identify high priority projects for evaluation and alternative solution development. Document the high priority projects in the Baseline Assessment and Gap Analysis Document which will serve as the basis for the following task.

MEETINGS

- Baseline Assessment and Gap Analysis Workshop

DELIVERABLES

- Draft and Final Baseline Assessment and Gap Analysis Document
- SCADA System Communications Architecture Diagram
- SCADA Software and Hardware Architecture Diagram

SUBTASK 10.3.2 ALTERNATIVE EVALUATIONS AND RECOMMENDATIONS WORKSHOP

Develop a Draft Alternatives Evaluations and Recommendations Document, detailing the options available to address the gaps identified in the previous task for review with the City. The evaluations will provide a summary of the high priority issues identified and alternative solutions. Review the Draft Alternatives Evaluations and Recommendations Document with the City to receive feedback.

MEETINGS

- Alternative Evaluations and Recommendations Workshop

DELIVERABLES

- Draft and Final Alternatives Evaluations and Recommendations Document

Task 10.4 Recommendations

Use the results of previous tasks and industry standards to develop a Recommended Project List. The Recommended Project List will include the following elements for each recommended project:

- Project Name and Description
- Project Business Case: A description of the project benefits and details of how the project addresses issues identified in the Baseline Assessment and Gap Analysis
- Project Duration and Prerequisites
- Impacted Stakeholders: Identify stakeholders impacted by the proposed project
- Project Criticality Ranking
- Cost Estimate: The cost estimate will be provided as an ACE Class 5 estimate

Conduct a Project Portfolio Workshop with the City to review the Recommended Project List and validate project criticality rankings. Use feedback from the workshop to prioritize the Project List and determine the list of candidate projects that should be included in the final Project Portfolio.

MEETINGS

- Project Portfolio Workshop

DELIVERABLES

- Recommended Project List
- Project Portfolio

Task 10.5 SCADA Master Plan Update

Update the 2010 SCADA Master Plan based on the findings and recommendations developed during the previous tasks. The SCADA Master Plan will emphasize cybersecurity. It will document controls that are not in place or require improvements. Review the Draft SCADA Master Plan with the City during the workshop.

MEETINGS

- Draft SCADA Master Plan Review Meeting

DELIVERABLES

- Draft and Final SCADA Master Plan

TASK 10 ASSUMPTIONS

- City to provide single consolidated set of comments on task deliverables.
- SCADA Master Plan to be a stand-alone document. Capital improvements from the SCADA Master Plan to be incorporated into the Water Master Plan Capital Improvement Program.

Task 11 Asset Management Plan (Optional)

Objective: Develop a plan to implement an asset management program that will support risk-based decision-making and prioritization related to CIP planning, maintenance planning, operations and fiscal management.

Task 11.1 Planning

Meet with City Project Manager and asset management working group or steering committee. Identify the asset management education program attendees and discuss the current level of understanding by staff of asset management principals. Use this understanding to develop a survey (Task 11.2) that will be provided to workshop attendees ahead of the workshops to help design presentation concepts and content for maximum benefit.

Task 11.2 Discovery

Prepare a short survey designed to evaluate each attendee's current level of understanding of asset

management. The survey will be developed on a web-based survey platform providing a fast and simple polling tool and will be sent to those staff attending the workshops in Task 11.4. The survey will collect Staff's knowledge of asset management principles, benefits, systems, tools, and knowledge of the practices currently implemented at the District. Review and analyze the results and develop a profile of the current knowledge of asset management.

Task 11.3 Workshop Preparation

Review the results of the survey conducted in Task 11.2 with the City and plan for the workshops in Task 11.4. The planning effort will include confirmation of the attendees and focus on developing the workshop agenda. The agenda will provide an introduction to asset management and its drivers, benefits and elements of asset management focusing on the management of utility assets throughout the asset lifecycle, and the culture of asset management including the importance of communication and collaboration. The agenda will also include a discussion of the America's Water Infrastructure Act of 2018 (AWIA 2018) and how it overlaps with utility asset management.

Task 11.4 Workshops

Lead two one-day-long workshops with City staff identified in the planning tasks. The workshops will be a series of knowledge transfer presentations, focused breakout sessions with staff, and a report back to share staff's discussions. Presentations will be brief, focused, educational, and informative. Breakout sessions will be focused on specific topics related to exploring its applicability to the City, and staff's report back will serve as a foundation for the asset management program.

Provide the required presentation materials including PowerPoint slides, flip charts, markers, etc. for the workshop during this task. Network breaks will be included, and lunch delivered to keep staff engaged and present.

The curriculum will address the following foundational questions customized based on the Survey conducted in Task 11.2:

What are the drivers for an asset management program?

- What the Environmental Protection Agency (EPA) says
- The retiring workforce and the institutional knowledge gap
- Workplace efficiencies
- Asset life cycle decisions and optimization
- Fiscal performance
- Service
- Organizational stability

What are the benefits of asset management?

- Reduced life cycle costs
- Organizational transparency
- Improved communications
- Streamlined decision-making

What are the elements of asset management?

- The language of asset management: Risk
- Asset knowledge – Registry and Hierarchy
- Data needs
- Work management principles
- Service Level
- Inventory management

- Technologies
- Key Performance Indicators (KPI)
- Goals

What is a culture of asset management?

- Culture defined
- Collaboration
- Understanding

What's in it for me or my operating division?

- Personal benefits at all levels
- Effect on others
- Synergism

Following presentations on these potential topics, West Yost will host breakout sessions to explore with staff and develop definitions, goals, and objectives specifically for the District and identify actions and priorities for future efforts.

Task 11.5 Workshop Summary

Compile the notes developed in Workshops 1 and 2 and prepare a Technical Memorandum of the attendees' discussions, thoughts, and ideas as well as the presentation materials. The Technical Memorandum will include decisions related to asset management standards and will identify asset management related growth areas staff feels will benefit the City. These growth areas will serve as gaps that exist in asset management processes, plans, information systems, tools, business processes, data integrity, and staff collaboration and communication.

Task 11.6 Asset Management Implementation Plan

Develop a preliminary action plan, identifying specific actions within each growth area identified in Task 11.5 and for each develop a description, benefit statement, estimate of internal resources, estimate of outside costs, and priority. Meet with the City to review the Technical Memorandum produced in Task 11.5 and the preliminary action plan.

Using input from the meeting, prepare an Asset Management Implementation Plan that recommends specific tasks for advancement of the City's asset management program including planning level cost estimates and schedule. Prepare a Draft and a Final plan based on City comments.

TASK 11 DELIVERABLES

- Workshop and meeting notes
- Summary of survey results
- Draft Technical Memorandum of workshop summary (Five hard copies)
- Final Technical Memorandum of workshop summary, incorporating comments (10 hard copies, one electronic copy)
- Draft Asset Management Implementation Plan (Five hard copies)
- Final Asset Management Implementation Plan, incorporating City comments (10 hard copies, one electronic copy)

TASK 11 ASSUMPTIONS

- One meeting with City staff
- Two workshops at City offices, with lunch to be provided. City will provide facilities to host the workshops.
- City will commit sufficient resources from Management, Engineering, Operations, Maintenance, and Finance to attend and participate in the workshops
- City will provide information related to current asset management practices such as current policies and practices related to maintenance and condition assessment, asset inventory, asset management systems including commercial-off-the-shelf systems as well as ad hoc systems such as spreadsheets and

databases, decision- making policies

- City to provide single consolidated set of comments on the workshop summary technical memorandum and Asset Management Implementation Plan
- Asset Management Plan will be a stand-alone document. Recommendations from the Asset Management Plan will be incorporated into the Water Master Plan Capital Improvement Program.

Task 12 Risk and Resiliency Assessment (Optional)

Objective: Achieve AWIA 2018 compliance in coordination with the Water Master Plan Update.

Task 12.1 – Data Collection

Building on Task 2 – Data Collection and Task 10 – SCADA Evaluation, West Yost will expand data collection. This expansion will be done to collect the essential information required to develop a RRA. Data collected will focus on the industry best practices summarized in the voluntary consensus standards put forth by the American Water Works Association (AWWA). These standards generally include: G430, G440, J100, M19 AWWA Cybersecurity Guidance and Use-Case Tool, etc.

Review the City’s previous vulnerability assessment, emergency response plans and the Orange County Water & Wastewater Multi-Jurisdictional Hazard Mitigation Plan. The findings from this document will provide the foundation for the evaluation of relevant hazards to the City’s operations.

Submit a request for information to support the RRA in Task 2. Requested information will include such things as process flow diagrams, facility and asset lists, and associated service levels.

Visit representative sites and interview staff to better understand historical service disruptions and the potential impacts of future hazards.

Continuously check in with the USEPA for any compliance requirement changes and/or updates and shall utilize such updated information to complete the RRA, as appropriate.

TASK 12.1 ASSUMPTIONS:

- Representative site visits, to be coordinated with the Task 9 site visits.
- Client staff shall provide access to representative sites
- Up to 5 staff interviews will be conducted
-
- City will identify internal and external stakeholders to participate in the project include representatives from the Local Emergency Planning Committee

TASK 12.1 DELIVERABLES:

- Request for information
- Summary of information provided
- Site visit field notes
- AWWA Cybersecurity Tool Output

Task 12.2 – Risk and Resilience Assessment

Develop an RRA that satisfies the following requirements of Sec. 2013 of the AWIA, and any other subsequent updated requirements that the USEPA shall provide for conducting this assessment. These requirements include:

- The risk to the system from malevolent acts and natural hazards
- The resilience of the pipes and constructed conveyances, physical barriers, source water, water collection and intake, pretreatment, treatment, storage and distribution facilities, electronic, computer, or other automated systems (including the security of such systems) which are utilized by the system
- The monitoring practices of the system

- The financial infrastructure of the system
- The use, storage, or handling of various chemicals by the system
- The operation and maintenance of the system

Facilitate two workshops with City staff to work through the first six steps of the AWWA J100 Standard. These include:

1. **Asset Characterization** – Identify priority facilities and critical assets that must be operational for the City to meet its mission and associated service levels.
2. **Threat Characterization** – Identify and characterize the malicious threats and natural hazards that could impact the City's operations.
3. **Consequence Analysis** – Estimate the worst-reasonable consequences if a relevant threat or hazard were to impact the City's operations. Consequences may include such things as revenue loss, repair/replacement cost, and employee injuries.
4. **Vulnerability Analysis** – Determine the ability of each critical asset and its protective systems to withstand each specified threat and hazard.
5. **Threat Analysis** – Estimate the likelihood (i.e. annualized probability or frequency) that a specific threat or hazard will occur.
6. **Risk and Resilience Analysis** – Calculate the overall risk and resilience (financial and operational) of the utility based on the consequences, vulnerability, and threat likelihoods estimated in the previous steps.

Submit an RRA, to the City for review and approval. Upon City approval of the RRA, West Yost will draft the Certification Letter for submittal to the USEPA. Submit the draft RRA Certification Letter to the City for review. Submit the City approved RRA Certification Letter to the USEPA no later than March 1, 2020.

TASK 12.2 ASSUMPTIONS:

- City staff will be available for workshops to validate assumptions and support the assessment.
- City staff will provide a single set of collated comments to West Yost

TASK 12.2 DELIVERABLES:

- Workshop facilitation materials
- Draft and Final Risk and Resilience Assessment
- Draft and Final Risk and Resilience Assessment Certification Letter

EXHIBIT B

SCHEDULE OF PAYMENT

West York Assembly	PPWP \$200 Topside	PPWP \$200 Drayer	EM/SCADA \$200 SCADA/SCADA/SCADA	ETM/4 \$204 Closures	PTB \$ \$211 Curb	ETM \$ \$258 Chrt	PTB \$ \$254 Manholes/Boilers/Switchgear	PTB \$ \$249 Manholes	ASAS \$ \$254 Viability	ASAS \$ \$254 Thru	ETM \$ \$255 (Sales)	TD in \$105 Annual	ASAS \$ \$184 Submittal/Station	ESG \$ \$162	ESG \$ \$107 Meter/Control	CAD \$ \$100	ADOMY \$153	License Fee	Sub P/E	Sub W/ Markup 10%	Other Direct	Total Quote
Task 1 Project Administration																						
1.01 Project Schedule and Program Reports	0		16				0	0	16									40	\$ 10,304			\$ 10,304
1.02 Project Kickoff Meeting	4		4				0	0	0									40	\$ 10,012		\$ 2,300	\$ 12,312
1.03 Monthly Project Meetings (12 assumed)			48				4	4	48									144	\$ 33,744		\$ 8,000	\$ 41,744
1.04 Bi-Weekly Project Updates			20				2	2	20									72	\$ 17,184			\$ 17,184
1.05 Project Coordination/Communication			0				2	2	0									2	\$ 8,912			\$ 8,912
Subtotal, Task 1 (Hours)	12	2	84	0	0	14	16	14	\$ 54,944	0	0	0	0	0	0	0	2	\$ 74,168	0	\$ 18,390	\$ 92,558	
Subtotal, Task 1 (\$)	\$ 3,478	\$ 886	\$ 27,842	\$ 1,784	\$ 3,332	\$ 2,648	\$ 4,888	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 1,864	\$ 23,238	\$ 0	\$ 290	\$ 23,528	
Task 2 Data Collection																						
2.01 Data Collection			0				4	4	12									52	\$ 10,096			\$ 10,096
2.02 Informational Interviews			4				4	4	12									16	\$ 3,644			\$ 3,644
2.03 Draft Existing System Chapter			4				4	4	0									54	\$ 9,408		\$ 200	\$ 9,608
Subtotal, Task 2 (Hours)	0	2	16	0	0	0	4	4	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	122	\$ 23,148	\$ 0	\$ 200	\$ 23,348
Subtotal, Task 2 (\$)	\$ 0	\$ 886	\$ 4,892	\$ 0	\$ 0	\$ 0	\$ 8,888	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 1,864	\$ 23,238	\$ 0	\$ 290	\$ 23,528	
Task 3 Water Demand Projections																						
3.01 Summarize Historical Water Usage			2				0	0	0									34	\$ 6,334			\$ 6,334
3.02 Meet with City Planning			0				20	20	0									28	\$ 7,276		\$ 500	\$ 7,776
3.03 Develop Unit Use Factors			4				16	16	0									80	\$ 11,412			\$ 11,412
3.04 Prepare Water Demand Projections			4				16	16	0									80	\$ 11,412			\$ 11,412
3.05 Water Demand Prod. Scalability			2				0	0	0									20	\$ 3,952			\$ 3,952
3.06 Draft Demand Chapter			2				16	16	0									70	\$ 13,072			\$ 13,072
Subtotal, Task 3 (Hours)	0	2	24	0	0	0	32	32	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	272	\$ 83,484	\$ 0	\$ 0	\$ 83,484
Subtotal, Task 3 (\$)	\$ 0	\$ 886	\$ 6,892	\$ 0	\$ 0	\$ 0	\$ 20,416	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 1,864	\$ 83,484	\$ 0	\$ 0	\$ 85,348	
Task 4 Water Supply and Storage																						
4.01 Current and Future Resources/Supply			4				0	0	0									28	\$ 5,652			\$ 5,652
4.02 Emergency Supply Capabilities			4				12	12	0									44	\$ 9,052			\$ 9,052
4.03 Draft Supply Chapter			4				4	4	0									56	\$ 10,820			\$ 10,820
Subtotal, Task 4 (Hours)	0	2	16	0	0	0	12	12	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	136	\$ 26,524	\$ 0	\$ 0	\$ 26,524
Subtotal, Task 4 (\$)	\$ 0	\$ 886	\$ 4,892	\$ 0	\$ 0	\$ 0	\$ 7,888	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 1,864	\$ 26,524	\$ 0	\$ 0	\$ 28,388	
Task 5 System Analysis																						
5.01 Model Cleanup and Updates			4				0	0	16									60	\$ 12,236			\$ 12,236
5.02 Model Demand Allocation/Drains			8				24	24	48									96	\$ 19,112			\$ 19,112
5.03 Model Static Calibration			12				6	6	32									168	\$ 34,000			\$ 34,000
5.04 HRR Flow Determination			4				24	24	48									60	\$ 12,348			\$ 12,348
5.05 Model EPS Calibration - Summer			8				64	64	120									120	\$ 25,360			\$ 25,360
5.06 Draft Report Appendix			2				16	16	32									54	\$ 10,782			\$ 10,782
5.07 Model Training			8				32	32	64									56	\$ 11,596			\$ 11,596
5.08 Model Technical Support			12				68	68	128									112	\$ 23,844			\$ 23,844
Subtotal, Task 5 (Hours)	0	4	68	0	0	0	16	16	\$ 73,216	\$ 48,112	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	726	\$ 148,848	\$ 0	\$ 0	\$ 148,848
Subtotal, Task 5 (\$)	\$ 0	\$ 1,992	\$ 17,238	\$ 0	\$ 0	\$ 0	\$ 3,884	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 1,864	\$ 26,524	\$ 0	\$ 0	\$ 28,388	
Task 6 System Analysis																						
6.01 Existing Planning Criteria			2				0	0	0									14	\$ 3,014			\$ 3,014
6.02 Existing System Analysis / Fire Flow			6				16	16	32									64	\$ 13,720			\$ 13,720
6.03 Existing System Analysis / Normal Ops			2				8	8	16									18	\$ 3,902			\$ 3,902
6.04 Existing System Analysis / Poutages (8 scen)			8				24	24	48									128	\$ 26,920			\$ 26,920
6.05 Future System Analysis			12				48	48	96									72	\$ 15,756			\$ 15,756
6.06 Planning Criteria Chapter			1				4	4	8									4	\$ 1,788			\$ 1,788
6.07 Existing System Chapter			2				8	8	16									8	\$ 1,536			\$ 1,536
6.08 Future System Chapter			2				8	8	16									8	\$ 1,536			\$ 1,536
Subtotal, Task 6 (Hours)	0	6	68	0	0	0	16	16	\$ 96,736	\$ 16,624	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	483	\$ 97,880	\$ 0	\$ 0	\$ 97,880
Subtotal, Task 6 (\$)	\$ 0	\$ 1,880	\$ 14,348	\$ 0	\$ 0	\$ 0	\$ 66,736	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 1,864	\$ 97,880	\$ 0	\$ 0	\$ 99,744	

2019 Billing Rate Schedule

(Effective January 1, 2019 through December 31, 2019) *

POSITIONS	LABOR CHARGES (DOLLARS PER HR)
ENGINEERING	
Principal/Vice President	\$298
Engineering/Scientist/Geologist Manager I / II	\$274 / \$287
Principal Engineer/Scientist/Geologist I / II	\$249 / \$264
Senior Engineer/Scientist/Geologist I / II	\$223 / \$234
Associate Engineer/Scientist/Geologist I / II	\$194 / \$208
Engineer/Scientist/Geologist I / II	\$157 / \$182
Engineering Aide	\$90
Administrative I / II / III / IV	\$79 / \$100 / \$120 / \$133
ENGINEERING TECHNOLOGY	
Engineering Tech Manager I / II	\$283 / \$294
Principal Tech Specialist I / II	\$260 / \$271
Senior Tech Specialist I / II	\$238 / \$249
Senior GIS Analyst	\$217
GIS Analyst	\$205
Technical Specialist I / II / III / IV	\$151 / \$173 / \$195 / \$216
CAD Manager	\$173
CAD Designer I / II	\$134 / \$150
CONSTRUCTION MANAGEMENT	
Senior Construction Manager	\$283
Construction Manager I / II / III / IV	\$170 / \$182 / \$195 / \$246
Resident Inspector (Prevailing Wage Groups 4 / 3 / 2 / 1)	\$149 / \$166 / \$185 / \$192
Apprentice Inspector	\$135
CM Administrative I / II	\$73 / \$97
Field Services	\$192

- Hourly rates include Technology and Communication charges such as general and CAD computer, software, telephone, routine in-house copies/prints, postage, miscellaneous supplies, and other incidental project expenses.
- Outside Services such as vendor reproductions, prints, shipping, and major West Yost reproduction efforts, as well as Engineering Supplies, etc. will be billed at actual cost plus 15%.
- Mileage will be billed at the current Federal Rate and Travel will be billed at cost.
- Subconsultants will be billed at actual cost plus 10%.
- Expert witness, research, technical review, analysis, preparation and meetings billed at 150% of standard hourly rates. Expert witness testimony and depositions billed at 200% of standard hourly rates.
- A Finance Charge of 1.5% per month (an Annual Rate of 18%) on the unpaid balance will be added to invoice amounts if not paid within 45 days from the date of the invoice.

* This schedule is updated annually

2019 Billing Rate Schedule (continued)

(Effective January 1, 2019 through December 31, 2019) *

Equipment Charges

EQUIPMENT	BILLING RATES
Gas Detector	\$80/day
Hydrant Pressure Gage	\$10/day
Hydrant Pressure Recorder, Standard	\$40/day
Hydrant Pressure Recorder, Impulse (Transient)	\$55/day
Trimble GPS – Geo 7x	\$220/day
Vehicle	\$10/hour
Water Flow Probe Meter	\$20/day
Water Quality Multimeter	\$185/day
Well Sounder	\$30/day

* This schedule is updated annually