

DRAFT SCOPE OF WORK

Task 1 – Project Management

The proposal shall identify the Project Manager (PM) who shall be the main point of contact on the project and manage the project team including any consultants. The PM shall manage and coordinate all components of the project and keep all tasks on schedule and on budget to ensure timely completion of the project. The PM shall give notice to ACWWA before performing work outside of the scope of the contract and contract budget.

The PM shall ensure full coordination with ACWWA staff and be responsive to any communications and discussion. The PM shall attend all meetings outlined in the scope of the project. The PM shall contact ACWWA frequently enough to ensure timely review of deliverables.

The PM shall organize a kickoff meeting with ACWWA staff to define project goals, outline project management approach, identify roles and responsibilities, and confirm the project's scope and schedule. The PM shall prepare all project related agendas and meeting minutes and distribute them prior to the meetings.

The PM shall submit a summary report of work completed by sub- tasks for the invoice period with each invoice. The time that each individual spent on each sub- task shall be indicated. ACWWA shall be alerted if there are any issues or concerns that may affect the progress or cost of the project.

Task 1A – Scoping Task

ACWWA will hold one meeting with the selected consultant to refine and finalize the Scope of Work to ensure that the modeling scenarios and analysis required for the water and wastewater systems are adequately captured in the final scope of work.

Task 2- Resource Documents and Data Review

Consultant shall review all sections of the 2011 Master Plan and 2013 Non-Potable Water Master Plan Update as well as the 2019 Raw Water Supply Master Plan. Consultant shall review all water resources documents including GIS data and mapping, water supply information, hydraulic models, water supply and distribution information, and any other relevant data and documents provided by ACWWA.

*Note for proposers, during the proposal phase, consultants will be provided the Tables of Contents of the 2011 Master Plan, the 2013 Non-Potable Water Master Plan Update, and the 2019 Raw Water Supply Master Plan. Full documents, GIS data and mapping, water supply information, hydraulic models, and any other relevant data and documents will be provided by ACWWA after the consultant is selected and approved by the ACWWA Board of Directors.

WATER

Water Task 3 - Existing System Description

The purpose of this task is to provide the relevant background information for the water system analysis and planning. The proposer will update the water system description to include any updates in:

- Current water service area description and boundary definitions, possible future additions to the water service area
- Existing and future pressure zones and boundaries
- Catalog the existing facilities including treatment plants, lift stations, pump stations, water rights, transmission and distribution piping, wells, reservoirs, etc.
- Condition and performance of the existing systems

Water Task 4 - Review Population and Water Demand Estimates and Forecast

The proposer shall review the population and water demands occurring at the buildout of ACWWA's service area from the 2019 Raw Water Supply Master Plan. These demands will be updated with any recent development that has occurred since the RWSMP demands using the land use plan with what's been constructed and what's still undeveloped.

Water Task 5 - Update and Calibrate Water System Hydraulic Model

The Proposer will utilize InfoWater for the hydraulic modeling task. A similar modeling software may be proposed, so long as it is fully compatible and integrable with ACWWA's Esri ArcGIS environment. Ultimate acceptance of proposed software rests with ACWWA staff. Once the consultant is selected, ACWWA will provide a working hydraulic model of the existing system in InfoWater (2011) and the latest GIS shapefiles of the potable and non-potable systems to perform an update or develop a new hydraulic model (in consultation with ACWWA, consultant and ACWWA to determine if update or new model). There have been several additions to the system since the 2011 Master Plan was completed, including several miles of pipelines and new ground water wells. The Consultant will update and calibrate the InfoWater, or similar software, model to encompass the changes and additions. Sufficient detail should be added to identify hydraulic constants and predict pipe flows, fire flow, system pressures, and storage water levels. Model verification and calibration shall be performed for summer and winter scenarios. This will include review and verification of current demands, water system operational conditions, and calibration of the model under steady state conditions using measured flow and residual pressures measured during fire hydrant testing. Model testing and calibration will be done in accordance with the American Water Works Association M32 manual. Further detail and specific model capabilities will be developed between the consultant and ACWWA once the contract has been awarded. Following calibration and validation of the hydraulic model, one day of training, or more as needed, will be administered to ACWWA staff so that sufficient understanding of model parameters, assumptions, outputs, etc. is achieved.

Water Task 6 – Water Distribution System Analysis

Proposer will develop a series of system performance criteria to analyze existing and future water system infrastructure. The proposer will complete an analysis of the water distribution system using the hydraulic model in InfoWater and the criteria developed in this task. The

analysis will include an evaluation of the system under existing and future conditions. Analysis will include:

- Potable water distribution System
- Non- potable distribution system
- Reclaimed water distribution system
- Pressure Zones
- Water age/ water quality analysis
 - o Effects on water quality and age throughout the distribution system due to water source and seasonal variation in demands
- Water Storage
- Pump stations
- Assessment of Interconnections

Specific scenarios of analysis will be defined during the scoping exercise (assume up to 8 modelling scenarios).

Water Task 7 – Vulnerability Assessment

Proposer will conduct a vulnerability assessment of ACWWA's potable and non-potable water systems. The project team will work with ACWWA staff to define critical pieces of infrastructure and determine the consequences of their failure. This assessment should be of content and format so that it may be used to satisfy a portion of the Risk and Resilience Assessment mandated under America's Water Infrastructure Act Section 2013. Future capital projects will be suggested to help mitigate these risks and vulnerabilities. The assessment and improvements will also include consideration of desired Level of Service.

WASTEWATER

Wastewater Task 3 - Existing System Description

The purpose of this task is to provide the relevant background information for the resultant wastewater system analysis and planning. The proposer will update the wastewater system description to include any updates in:

- Current wastewater service area description and boundary definitions, possible future additions to the wastewater service area
- Existing wastewater collection basins
- Catalog the existing facilities including treatment plants, lift stations, collection and interceptor piping, etc.
- Condition and performance of the existing systems

Wastewater Task 4 - Wastewater Flow Estimates and Forecast

The proposer shall prepare a forecast of the wastewater flows occurring at the buildout of ACWWA's service area. These values will be used to estimate the loads for a 20-year planning horizon. Three scenarios (average, peak dry weather, and peak wet weather conditions) will be used to evaluate the future loads. This forecast will be prepared by evaluating:

- Existing wastewater flows
- Water balance for the entire system

Wastewater Task 5 - Update and Calibrate Wastewater System Hydraulic Model

The Proposer will utilize InfoSewer for the hydraulic modeling task. Other analysis software may be proposed, but ultimate acceptance rests with ACWWA staff. ACWWA will provide the latest GIS shapefiles of the wastewater system to develop a hydraulic model. Sufficient detail should be modeled to identify hydraulic constraints and predict pipe flows, estimate pipe velocities, and d/D values. Model verification and calibration shall be performed for peak dry weather and peak wet weather scenarios. Following completion of the model, one day of training will be provided to ACWWA staff so that sufficient understanding of the model is achieved.

Wastewater Task 6- Wastewater Collection System Analysis

Proposer will develop a series of system performance criteria to analyze existing and future wastewater infrastructure. The proposer will complete an analysis of the wastewater collection system using the hydraulic model in InfoSewer, or similar analysis software, and the criteria developed in this task. The analysis will include an evaluation of the system under existing and future conditions. Analysis will include:

- Existing and Future wastewater collection system
- Lift station assessment and capacity
- Impact of future water quality regulations on treatment plant operations
- Evaluate and update treatment plant capacity analysis
- Treatment plant capacity

- Input of water quality regs and what could be coming down the pike in future years
- Will use the wastewater treatment plant capacity analysis that was done previously and CIP from that and use this to escalate costs and include in CIP for 2029 expansion.
- Assessment of Interconnections

Wastewater Task 7 – Vulnerability Assessment

Proposer will conduct a vulnerability assessment of ACWWA's wastewater collection and treatment system. The consultant will work with ACWWA staff to define critical pieces of infrastructure and determine the consequences of their failure. Future capital projects will be suggested to help mitigate these risks and vulnerabilities. The assessment and improvements will also include consideration of desired Level of Service.

Task 8- Capital Improvements Plan (CIP) Update

The proposer will prepare a prioritized, phased CIP list of water and wastewater system improvements based on the findings of the work described in the RFP. This list will include recommended updates up until ACWWA's buildout, in five year increments. Short term and long term improvements, as well as possible alternatives shall be included in the CIP update. The CIP will include system replacements, capacity expansion needs, facility needs, and system updates.

In addition to the CIP, the proposer will provide Class 5 planning level cost estimates for all improvement recommendations identified. These estimates will be included on a project summary sheet for each project. A description of the scope of each project, location of the project, and other assumptions will be included in the project summary sheet. The timing of the projects, as well as their relationship to growth and development in the service area will be identified.

Task 9- Prepare Water and Wastewater Master Plan Report

The proposer will draft a Water and Wastewater Master Plan Update report summarizing their tasks and recommendations. The draft should include all analysis, maps, models, drawings, and information gathered. Once complete, the draft will be submitted to ACWWA staff for review. After the review is completed, the draft Water and Wastewater Master Plan Update will also be presented to the ACWWA Board.

The Final Master Plan Update will incorporate any comments and additions from the Draft Master Plan Update. Color copies will be created, and any sensitive or confidential material included in the Final Master Plan will be omitted from all online and hard copy versions available to the public.

The Final Master Plan Update will include an executive summary, appendix, and table of contents. The executive summary should be short and concise and will summarize the tasks, goals, and information contained in the Final Master Plan. The executive summary may be a standalone part of the Final Master Plan.