

MEMORANDUM OF UNDERSTANDING

Arizona Water Company ("Arizona Water"), an Arizona corporation, and the City of Bisbee ("City"), an Arizona municipal corporation (each a "Party" and together the "Parties"), enter into this Memorandum of Understanding ("Memorandum") as of this 16th day of March, 2021.

RECITALS

A. Arizona Water and the City wish to obtain a study and water master plan report of Arizona Water's public utility water system to improve fire suppression in the area of the City to which the City provides fire suppression services and to decommission the City's fire suppression system.

B. The City understands and acknowledges that Arizona Water has never had any obligation to provide fire flows in the area served by the City's fire suppression system and Arizona Water's system was not designed to provide such fire flows. The City further acknowledges that Arizona Water's Bisbee water system is in compliance with all applicable legal, regulatory, and code requirements.

C. Arizona Water and the City have agreed to pay 25% and 75%, respectively, of the costs to obtain the study and water master plan.

D. On the terms set forth in this Memorandum, Arizona Water and the City wish to engage in a public-private partnership to hire and pay a consulting engineer to perform and provide the study described in Recital A and to perform all other actions set forth in this Memorandum.

AGREEMENT

Therefore, in consideration of the mutual agreements, covenants, promises, representations, and understandings contained in this Memorandum, and other good and valuable consideration, the receipt and sufficiency of which both parties acknowledge, the parties agree as follows:

1. THE ENGINEERING STUDY.

a. Hiring a Consulting Engineer. Arizona Water will select and hire a consulting engineer, licensed in the State of Arizona, to perform a study of Arizona Water's public utility water system and the City's fire suppression system and prepare a water master plan report (sometimes referred to as the "Services") that:

- i. identifies a prioritized course of action and capital improvement projects to modernize Arizona Water's public utility water system to increase fire hydrant flow, availability, and reliability and to decommission the City's fire suppression system;
- ii. provides preliminary designs and cost estimates for each capital improvement project identified in the water master plan report.

A more detailed description of the scope of the Services is shown in Attachment A.

b. City Cooperation and Participation. The City will cooperate with the consulting engineer and provide to the consulting engineer all information, data, and documents in its possession or control the consulting engineer reasonably requires to perform the Services. Arizona Water will provide to the City the opportunity to review and comment on the draft water master plan report before the consulting engineer finalizes the report.

c. Payment For the Consulting Engineer.

i. Invoices. Arizona Water will instruct the consulting engineer to present invoices and supporting documents for the Services to Arizona Water. Arizona Water will require the consulting engineer to provide line item documentation of charges in the invoice, including hourly billable rates, expenses, and overhead.

ii. Payment of Invoices. Arizona Water will pay the consulting engineer's invoices.

d. City Reimbursement of Arizona Water. The City will reimburse Arizona Water for the costs of the Services and for Arizona Water's costs associated with the Services as follows.

i. Arizona Water will track the costs it incurs associated with the Services, such as reviewing and commenting on the consulting engineer's draft water master plan report, including hourly billable rates, expenses, and overhead.

ii. Upon receipt of an invoice from the consulting engineer for the Services, Arizona Water will prepare an invoice and supporting documents to present to the City that include the costs of the Services and Arizona Water's costs associated with the Services. The invoice will contain a line item breakdown of the costs, including hourly billable rates, expenses, and overhead.

iii. The City will pay to Arizona Water 75% of the amount of an invoice within 30 days of receiving the invoice.

e. The Final Water Master Report. Upon receiving it, Arizona Water will provide the City a copy of the final water master report.

2. CONSTRUCTION GRANT.

a. Upon receiving the final water master plan report, the City will apply for a construction grant from the Federal Emergency Management Agency to fund the construction of all capital improvement projects identified in the water master plan report. Arizona Water will reasonably cooperate with and support the City's application.

b. If the City does not receive the grant, Arizona Water will have no obligation to design, permit, and/or construct any of the capital improvements identified in the water master plan report.

3. MISCELLANEOUS PROVISIONS.

a. Venue and Governing Law. All disputes, claims, and controversies between the Parties arising out of or related to this Memorandum, other than those matters which are subject to the Commission's jurisdiction, may only be brought in a court of competent jurisdiction in Cochise County,

Arizona. This Memorandum will be governed by and construed in accordance with the laws of the State of Arizona, without regard to the choice of laws' provisions thereof.

b. Attorneys' Fees and Costs. In the event any claim, controversy, or legal action, including arbitration, arises under this Memorandum, the prevailing Party or Parties will be entitled to recover from the non-prevailing Party or Parties reasonable attorneys' fees, costs, and expenses.

c. Provisions Required by Arizona State Law. This Memorandum is subject to the cancellation provisions for conflicts of interest pursuant to A.R.S. §38-511. Arizona Water acknowledges and agrees that it is not currently engaged in, and agrees for the duration of this Memorandum to not engage in, a boycott of Israel.

d. Time is of the Essence. Time is of the essence and each Party will diligently perform its obligations hereunder in a timely fashion in accordance with the provisions of this Memorandum.

e. Notice Provisions. Notices concerning this Memorandum and notices that this Memorandum requires must be in writing and sent by certified mail, by courier, or by hand delivery, addressed as follows:

To Arizona Water: ARIZONA WATER COMPANY
 3805 North Black Canyon Highway
 Phoenix, Arizona 85015-5351
 Attention: President

To the City: CITY OF BISBEE
 76 Erie Street #4601
 P.O. Box 4601
 Bisbee, AZ 85603-4601
 Attention: Public Works Director

Notice will be deemed received three business days after deposit into the mail, one business day after deposit with a courier, or on the same day as personal delivery. A Party may change its address by giving written notice of such change of address to the other Parties.

f. Execution in Counterparts. This Memorandum may be executed in any number of counterparts and each executed counterpart will have the same force and effect as an original instrument.

g. Complete Agreement. This Memorandum contains the entire agreement between the Parties with respect to the subject matter contained herein and no amendment or modification will be binding unless made in writing and signed by duly authorized representatives of each and every Party to this Memorandum.

h. Attachments. All attachments to this Memorandum are incorporated into this Memorandum and are binding, material parts of this Memorandum.

i. Further Instruments. The Parties will execute any further instruments and perform any further act which may become reasonably necessary to carry out the terms of this Memorandum.

j. Waiver. No waiver hereunder, expressed or implied, will imply any other waiver, at the same or subsequent time, whether of the same obligation or of any other obligation. No waiver hereunder will be deemed effective unless expressly set forth in writing.

k. Third-Party Beneficiaries. The terms and conditions of this Memorandum are for the benefit of the Parties and there are no intended third-party beneficiaries under this Memorandum.

l. Drafter. Each Party warrants that it has had full and fair opportunity to review this Memorandum and to obtain the advice of counsel. Each Party will be considered the drafter of this Memorandum and this Memorandum will not be construed against either Party as the drafter thereof.

IN WITNESS WHEREOF, the Parties have caused this Memorandum to be executed by their respective officers theretofore authorized as of the date first written above.

ARIZONA WATER COMPANY, an Arizona corporation

CITY OF BISBEE, an Arizona municipal corporation

By: Andrew J. Haas
Andrew J. Haas
Its: Vice President - Engineering
DA000753

By: Ken Budge
Ken Budge
Its: Mayor, City of Bisbee

Attachment A



REQUEST FOR PROPOSAL

Bisbee Planning Area

Water Master Plan

Bisbee, Arizona

January 5, 2021

**Arizona Water Company
3805 N. Black Canyon Highway
Phoenix, Arizona 85015
(602) 240-6860**

Table of Contents

I.	PROJECT DESCRIPTION.....	3
	A. Project Summary.....	3
	B. Location	3
	C. Background.....	3
	D. Project Objectives	4
II.	PROPOSAL SUBMITTAL REQUIREMENTS.....	5
	A. General Requirements	5
	B. Proposal Requirements.....	6
	1. Consultant’s Capabilities	6
	2. Project Understanding and Approach	6
	3. Key Project Team Members	6
	4. Project Organizational Chart.....	7
	5. Relevant Experience and Qualifications	7
	6. Preliminary Schedule.....	7
	7. Fees	7
	8. Hourly Rates.....	7
	9. Task Additions and/or Deletions	8
	10. Resumes	8
	11. Agreement for Consulting Services	8
III.	SCOPE OF SERVICES	8
	A. Task Series 100 – Meetings and Project Management.....	8
	B. Task Series 200 – Research, Data Collection, and Planning Area Review.....	9
	C. Task Series 300 – Population, Land Use, Fire Flow, and Zoning Assessment	9
	D. Task Series 400 – Water Demand Analysis.....	10
	E. Task Series 500 – Hydraulic Computer Modeling	11
	F. Task Series 600 – Planning Area Analysis	12
	G. Task Series 700 – Capital Improvement Plan.....	13
	H. Task Series 800 – Master Plan Report.....	14
	Figure 1 Bisbee Planning Area.....	15

I. PROJECT DESCRIPTION

A. Project Summary

Arizona Water Company ("Company") is seeking a qualified engineering consultant ("Consultant") to develop a water master plan report and an accompanying water model ("Master Plan") for the Company's Bisbee planning area ("Planning Area"). The Master Plan will determine phasing of infrastructure necessary to provide fire flows in Old Bisbee including updated infrastructure from the Naco well field water source to Old Bisbee fire hydrants and systematic replacement of the existing Old Bisbee fire suppression system. Incorporation of the improvements necessary for the production and distribution of the Planning Area is necessary to efficiently plan for future fire flow water demands. The Master Plan will include a report, a water model and a capital improvement program. The Company will use the Master Plan as the basis to prioritize capital improvement projects, aid in preparing annual budgets, and support future rate cases.

B. Location

The Bisbee Planning Area includes the City of Bisbee and unincorporated areas in Cochise County as shown in Figure 1. The Company's Certificate of Convenience and Necessity (CCN) for the Bisbee Planning Area consists of approximately 40 square miles. Old Bisbee is the Northernmost portion of the water system.

C. Background

Arizona Water Company ("Company") is a public service corporation providing water for domestic, commercial, industrial and irrigation purposes in the State of Arizona. The Company was formed in 1955 when it purchased the water assets from Arizona Public Service Company who provided water to 10 communities in 5 counties to over 44,000 residents. Today, the Company provides water to 21 communities in 8 counties to over 250,000 residents. The Company's corporate office is located in Phoenix and provides Management, Engineering, Accounting, and Billing support for the Company.

Copper mining began in Bisbee, Arizona in the late 1800's and grew the city into a boomtown. In the early 1900's, Bisbee was the largest city between St. Louis, Missouri and San Francisco, California. Much of the water infrastructure in the town of Bisbee was first established over 100 years ago and will require updates to its infrastructure in order to better conform to current standards. Water sources near the city of Bisbee are not suited to potable drinking water demands. The sole source of potable water for Bisbee is a well field near Naco, Arizona. The Naco booster pump station currently pumps water over 6.4 miles and up 742 feet in elevation to the Tin Town tank site.

The Company's Bisbee Planning Area relies on groundwater wells from the Naco well field. Water is pumped to gravity water storage tanks. In addition, there are booster pump stations and pressure reducing stations in the Bisbee Planning Area. The infrastructure within the Bisbee Planning Area as of July 1, 2020 is presented in Table 1.

No. of Active Wells	No. of Water Storage Tanks	No. of Booster Pump Stations	Approximate Miles of Water Main (1/2"-24")
4	9	6	71

The Company's potable water system in Old Bisbee is separate from the City of Bisbee's fire suppression system. The existing Old Bisbee fire suppression system facilities include a pump house which is used to pump spring water to an old swimming pool in the nearby Mule Mountains. The old swimming pool is then used as a reservoir to gravity feed an aged network of fire hydrants. The existing fire suppression system contains unwanted biological growth, is aged, unreliable, and requires replacement.

The Company's potable water system in Old Bisbee is the portion of the water system farthest from the Naco well field water source. To replace the existing Old Bisbee fire suppression system, water must be transported in sufficient quantities and pressures to provide fire flows throughout Old Bisbee. In addition to the fire hydrants and water mains required to directly replace the fire suppression system in Old Bisbee, the Company will need to conduct infrastructure improvements from the Naco well field water source through the Company's water system to fire hydrants in Old Bisbee to provide sufficient fire flows.

D. Project Objectives

The primary objectives for the Master Plan are to:

1. Develop a Master Plan report and WaterGEMs model that reviews and analyzes the existing Old Bisbee fire suppression system, water demands, and the Company's Planning Area infrastructure.
2. Determine future water demand based on projected replacement of the Bisbee fire suppression system and perform a supply versus water demand analysis.
3. Assess the existing Company Planning Area infrastructure with respect to capacity, compliance, and efficiency.

4. Recommend improvements necessary to fully replace the Old Bisbee fire suppression system. Include infrastructure improvements to transport sufficient quantities and pressures of water from the Naco Well field to Old Bisbee fire hydrants, space plan fire hydrants along the existing potable water system, and extend the potable water system to fire suppression system areas.
5. Create a new production and distribution model for current, 5- year, and build-out simulations. Build out will include all infrastructure improvements required to fully replace the existing Old Bisbee fire suppression system, transport sufficient quantities and pressures of water from the Naco Well field to Old Bisbee fire hydrants, space plan fire hydrants along the existing potable water system, and extend the potable water system to fire suppression system areas to meet future water system demands.
6. Recommend improvements to reduce water age and disinfection by product ("DBP") formation.
7. Develop a capital improvement program necessary for implementing the recommended Planning Area improvements for the current, near term (5 years) and build out.

II. PROPOSAL SUBMITTAL REQUIREMENTS

A. General Requirements

Deliver proposals to the Company's Phoenix office (address provided below) before 2:00 P.M., Arizona Standard Time, on February 2, 2021. The Company may reject late proposals.

Arizona Water Company
Attention: Theresa Lau, E.I.T.
3805 N. Black Canyon Hwy
Phoenix, Arizona 85015

A mandatory pre-proposal phone conference is scheduled for January 19, 2021, beginning promptly at 1:00 P.M., Arizona Standard Time, at:

<https://zoom.us/j/94908741889?pwd=eFdxak42cUE5YWdSMTFkVFBCMjcVUT09>

Meeting ID: 949 0874 1889

Passcode: 841510

The pre-proposal Zoom meeting is mandatory. The Company may not accept proposals from Consultants who do not attend the meeting.

The Company may reject incomplete Proposals. The Contractor must submit questions regarding this RFP in writing by mail or email:

Arizona Water Company
Attention: Theresa Lau, E.I.T.
3805 N. Black Canyon Hwy
Phoenix, Arizona 85015
tlau@azwater.com

The Company will only respond to written questions and requires a minimum of 48 hours to provide written responses. The Company will send responses to each Consultant who is provided with an RFP package. Oral statements or instructions from the Company shall not constitute an amendment or addendum to this RFP. The Company will provide each Consultant with addendums in writing.

Company employees including division management and engineers will evaluate the proposals based on each consultants' Work History and Experience of Consultant and Project Manager, RFP/Scope Thoroughness, and Consultant Proposed Fee.

B. Proposal Requirements

Submit a proposal of no more than 12 typed pages in length (excluding resumes, project schedule, fee schedule and hourly rate schedule) and in font of no smaller than 11 point. The Consultant shall submit the following with the proposal:

1. Consultant's Capabilities

Provide a brief description of the Consultant's capabilities to provide the services required for this project. Include any sub-consultant's capabilities if they are utilized on the Consultant's project team. Describe the Consultant's approach to project management and quality control.

2. Project Understanding and Approach

Provide a narrative of the understanding and approach to the project. Identify key elements, potential roadblocks, and considerations. Discuss options for potential cost savings.

3. Key Project Team Members

Provide brief descriptions of key project team members experience and capabilities. Identify each team member's role in the project and how they would be an asset to the project.

4. Project Organizational Chart

Consultant shall provide a project team organizational chart starting with the proposed project manager, which shall include all other necessary engineering and support personnel from all necessary disciplines who are directly associated with this project. If individuals proposed for this project are employed by the Consultant's subcontractor, each such individual shall be identified in the organizational chart. Additionally, indicate the lead person employed by such subcontractor.

5. Relevant Experience and Qualifications

Provide summary descriptions of three to five similar projects the project team members have been intimately involved with within the past 5 years. Include the following information:

- a. Project Name and Location
- b. Client Name
- c. Client Contact Name and Phone Number
- d. Year Work Performed
- e. Team Members' Role

6. Preliminary Schedule

Consultant shall provide a preliminary schedule, in Gantt chart form, from the Notice to Proceed through the Company's written approval and acceptance of the completed Master Plan. Assume a two-week Company review period for each submittal.

7. Fees

Consultant shall submit a detailed fee schedule to complete the Preliminary Engineering Analysis and Report for the Company's Bisbee Master Plan and the corresponding scope of services described herein. Such fee schedule shall show estimated hours and hourly rate for each employee classification assigned for each task.

8. Hourly Rates

Provide supplemental hourly rates (with overhead) for staff members by discipline (all levels) for use in determining appropriate compensation or reimbursement for any changes in the Scope of Services.

9. Task Additions and/or Deletions

If the Consultant identifies and recommends modifications to the scope of services that would better facilitate the development of the Master Plan, Consultant shall provide a brief description and justification for such recommended modification, along with an addendum to the fee schedule. Consultant shall identify such modifications as a new sub-task under the appropriate task series.

10. Resumes

Consultant shall provide resumes and a work experience history of key individuals, including sub-consultants, identified in the project team organizational chart. Submit resumes of no more than 2 pages in length each.

11. Agreement for Consulting Services

Provide a statement in your proposal that confirms your firm is willing to comply with the provisions of the Company's attached Agreement for Consulting Services. If the Consultant cannot provide such a statement, provide the exceptions to the Agreement. Clearly state the revisions to the Agreement for Consulting Services which are required for your firm to execute such agreement. If exceptions are included with the proposal, the Company reserves the right to reflect the exceptions in the Consultant Scoring and Selection process.

III. SCOPE OF SERVICES

A. Task Series 100 – Meetings and Project Management

Task Series 110 – The Consultant will provide a detailed schedule, in Gantt chart form, and update monthly.

Task Series 120 – Schedule and coordinate meetings, including but not limited to: kick-off meeting, monthly status and update meetings, and comment review meetings.

Task Series 130 – Provide drafts of the Master Plan report and address Company comments.

Assumptions: Maximum of 36 weeks for development of the Master Plan, up to nine (9) status update meetings, one (1) kick-off meeting and up to three (3) draft review meetings.

Company Inputs: Company will review the Consultant's schedule and approve any subsequent updates. Company will review draft submissions of the Master Plan and provide comments.

Deliverables: The Consultant will provide detailed schedules, prepare meeting agendas, conduct meetings and provide meeting minutes with action items. Consultant will provide up to four (4) (30%, 60%, 90%, 100%) draft Master Plan reports for review prior to publishing final Master Plan report.

B. Task Series 200 – Research, Data Collection, and Planning Area Review

Task 210—Compile, evaluate, and establish design criteria including but not limited to: well supply, storage, booster pump station design, topography, required fire flows, distribution system, and pressure requirements.

Task 220—Obtain and review Company provided water system data, including but not limited to meter read records, production records, maps, plans, and as-builts. Identify data deficiencies and develop requests for additional supporting documentation.

Task 230—Obtain and review Old Bisbee fire suppression system data, including but not limited to production records, maps and plans.

Task 240—Conduct a review of the water system operations plan, current and planned capital improvement projects, and ongoing and pending construction projects, including developer projects.

Company Inputs: Company will provide historical water consumption and production, current 5-year capital improvement program, current development plans, operational settings for tanks, wells, booster pumps, control valves and pressure reducing stations. Conduct fire hydrant flow testing as identified in Consultant's request for additional data and provide information. Company will review and approve proposed design criteria.

Deliverables: The Consultant will provide Company with proposed design criteria for review. Consultant will provide Company with formal request for additional supporting documentation and information.

C. Task Series 300 – Fire Suppression, Population, Land Use and Zoning Assessment

Task 310 – Analyze the Old Bisbee fire suppression system fire flow availability and fire hydrant placement within the Company's Planning area

Task 320 – Analyze population growth trends within Company's Planning Area.

Task 330 – Analyze land use and current Cochise County zoning ordinances within Company's Planning Area.

Assumptions: The Consultant shall project existing Old Bisbee fire flow availability and identify locations along the Company's water system in need of fire hydrant placement and water main extension to provide adequate coverage for replacement of the existing Old Bisbee fire suppression system. The Consultant shall use all available resources to project population growth in the Company's Planning Area, including but not limited to: United States Census, Cochise County general plan and City of Bisbee general plans. The Consultant shall confirm the land use and zoning categories within Company's CCN to assisting with projection of future demands. Consultant will identify land uses with potential high water demands.

Company inputs: Company will review and comment on Consultant's identified high water demand land use conclusions.

Deliverables: Consultant will include a summary of the research and conclusions in Master Plan report.

D. Task Series 400 – Water Demand Analysis

Task 410 – Analyze historical and existing system demands based on billing, consumption, production, and water loss data provided by Company to identify Average Day Demand (ADD), Maximum Day Demand (MDD), Peak Hour Demand (PHD), and develop peak factors.

Task 420 – Develop water duty factors for each land use type.

Task 430 – Project future water demands based on growth trends developed in Task 300 and peaking factors developed in Tasks 410 and 420.

Task 440 – Determine fire flow availability from the existing Old Bisbee fire suppression system. Project fire flow at Company fire hydrants and add MDD to determine total Fire Flow Demand (FFD)

Assumptions: Consultant will review actual production and consumption information provided in Task Series 200 to develop the ADD, MDD, PHD, and associated peaking factors to describe the relationships between these demand conditions. Consultant will also identify the 20 highest users, by volume, and their location. Consultant will review actual production and consumption information provided in Task Series 200 to develop water duty factors for each land use type within Company's CCN. Consultant will determine fire flow from the existing Old Bisbee fire suppression system and project FFD on fire hydrants in the Company's water system. Consultant will develop future system demands for 5-year, and build-out based on trends identified in Task Series 300 and demands and peaking factors developed in Task Series 400.

Company Inputs: Review and comment on the demands and peaking factors, and build-out projections.

Deliverables: Consultant will include a summary of the demands and projected demand scenarios in the Master Plan report.

E. Task Series 500 – Hydraulic Computer Modeling

Task 510 – Construct hydraulic computer model of the Bisbee Planning Area in Bentley WaterGEMS V8i format.

Task 520 – Allocate water demand to their corresponding junction nodes and pressure zones.

Task 530 – Perform a static (steady state) calibration on the hydraulic computer model.

Task 540 – Perform static hydraulic simulations on calibrated hydraulic computer model.

Task 550 – Perform dynamic (Extended Period Simulation) calibration on hydraulic computer model developed in Task Series 510.

Task 560 – Develop diurnal curves for each demand condition identified in Task 510 of Task Series 500.

Task 570 – Perform dynamic hydraulic simulation of available fire flow in the Bisbee Planning area

Assumptions: Consultant is responsible for importing the complete Planning Area infrastructure including but not limited to: wells, water storage tanks, booster pump stations, pipeline and pressure reducing stations. Consultant is responsible for importing the water system infrastructure at appropriate elevations. Consultant shall import all current and recently completed Company and developer projects, including 2020 Company budgeted construction projects. Consultant shall conduct computer simulations and calibrate the hydraulic computer model by comparing predicted flows, pressures and water storage tank levels with actual field collected data. Consultant shall develop and analyze steady state simulations for Average Day Demand, Peak Hour Demand and Maximum Day Demand plus Fire Flow with the existing, 5-year, and build-out system demands.

Company Inputs: Company will provide GIS information for the Bisbee Planning Area infrastructure, 2020 capital budget projects, current system operational set points, booster pump manufacturer information, and provide results of water system test for comparison.

Deliverables: Consultant shall provide a CD/DVD/thumb drive electronic version of the fully functioning and calibrated hydraulic computer model in Bentley WaterGEMS V8i format. Include summary of development and calibration methods for hydraulic computer model in Master Plan report.

F. Task Series 600 – Planning Area Analysis

Task 610 – Consultant shall analyze and evaluate the existing, 5-year, and build-out Planning Area water system for impacts related to replacement of the Old Bisbee fire suppression system. Consultant shall use the calibrated hydraulic computer model developed in Task Series 500 and run the following demand scenarios: (1) Average Day Demand, (2) Maximum Day Demand plus Fire Flow and (3) Peak Hour Demand.

Task 620 – Consultant shall analyze and evaluate the capacity and reliability of the water supply facilities for the existing, 5-year, and build-out system demands in the Bisbee Planning Area. Consultant shall quantify additional sources of supply necessary within the Planning Area to satisfy existing and build-out system demands.

Task 630 – Consultant shall analyze the water storage and pumping requirements to satisfy fire flow, emergency, and operational water storage design criteria established in Task 210 of Task Series 200. Consultant shall quantify additional storage necessary within the planning area to satisfy existing and future system demands.

Task 640 – Consultant shall analyze and evaluate the existing and build-out Planning Area distribution system for pressure deficiencies. Consultant shall use the calibrated hydraulic computer model developed in Task Series 500 and run the following demand scenarios: (1) Average Day Demand, (2) Maximum Day Demand plus Fire Flow and (3) Peak Hour Demand.

Task 650 – Consultant shall analyze and evaluate the existing Bisbee water distribution and transmission systems (including but not limited to: transmission mains, distribution mains, pressure reducing stations, booster pump stations) to improve the efficiency of delivering drinking water and fire flows throughout the system. Consultant shall use the calibrated hydraulic model developed in Task Series 500. Contractor shall identify distribution system infrastructure improvements required to fully replace the Old Bisbee fire suppression system. Include infrastructure improvements to transport sufficient quantities and pressures of water from the Naco Well field to Old Bisbee fire hydrants.

Task 660 – Perform chemical calibration, chlorine residual analysis, and water age analysis on hydraulic computer model developed in Task Series 500. Consultant shall analyze water age and chlorine residuals and develop water system and operational modifications to improve water quality by reducing water age and DBPs and maintaining chlorine residual.

Task 670 – Perform dynamic hydraulic computer model simulations of the Bisbee Planning Area, using existing Maximum Day Demand and build-out Maximum Day Demand scenarios for emergency refill, operational optimization, and water age analysis. Consultant will develop set points for booster pump stations and water storage tanks to minimize cycling and achieve storage turnover.

Company Inputs: Company will review and comment on Consultant's conclusions for each of the Tasks identified in Task Series 600.

Deliverables: Consultant will include a summary of the Task Series 600 analyses, evaluation, and conclusions in Master Plan report.

G. Task Series 700 – Capital Improvement Plan

Task 710 – Consultant will evaluate Company's existing 5-year budget (Capital Improvement Plan) and determine the need and impact of planned projects. Consultant will adopt, adapt, or reject and incorporate pending projects into a new Capital Improvement Plan.

Task 720 – Develop Capital Improvement Plan. Consultant will propose operational modifications and capital improvement projects to the existing Bisbee Planning Area to replace the existing Old Bisbee fire suppression system and provide a more reliable drinking water supply and distribution system.

Task 730 – Prepare justifications, cost estimates, and a summary of each project as an appendix to the Master Plan report.

Assumptions: Consultant will develop needed projects to meet design criteria established in Task Series 200 for existing, 5-year and build out demands. Consultant will develop projects to meet the current and future system needs established in the analysis of the hydraulic computer model from Task Series 500. Consultant will develop a capital improvement project table for short-term (5-year) and build out projects. The table headings include but not limited to, description, costs, priorities, phasing, completion dates and justification. Consultant will meet with Company engineers and operators prior to finalizing Capital Improvement Program.

Company Inputs: Company will provide examples of previous project justification language and review and provide comments on Capital Improvement Plan. Company will provide current 5-year Capital Project list.

Deliverables: Preliminary Capital Improvement Program for review. Consultant will include Task Series 700 Capital Improvement Plan in Master Plan report.

H. Task Series 800 – Master Plan Report

Task 810 – Prepare Water Master Plan report in the following format:

Executive Summary

Chapter One – Introduction

Chapter Two – Population, Land Use and Fire Flow

Chapter Three – Water Demand Analysis

Chapter Four – Existing Planning Area Overview

Chapter Five – Computer Modeling and Calibration

Chapter Six – Design and Planning Criteria

Chapter Seven – Planning Area Analysis

Chapter Eight – Capital Improvement Plan

Assumptions: Consultant will use information developed and obtained in Task Series 100-700 to develop the Master Plan Report. At minimum include the following sub-sections: List of Figures, Goals and Objectives, Water System Background and Overview, Modeling Parameters, Scenarios, Analysis and Results, Recommended Policies and Practices.

Company Inputs: Review and comment of Master Plan Report Drafts.

Deliverables: Consultant shall provide draft Master Plan Report in electronic PDF format (e-mail, FTP, Drop box, etc.) for Company to reproduce and distribute for review. Consultant shall provide four (4) hard copies of the final Master Plan Report and one (1) CD containing electronic versions of the final Master Plan Report in PDF and Microsoft Word document format. Consultant shall provide a CD/DVD/thumb drive electronic version of the fully functioning and calibrated hydraulic computer model in Bentley WaterGEMS V8i format.

Table 1: Water Use Data Sheet

WATER USE DATA SHEET

NAME OF COMPANY _____ →	ARIZONA WATER CO - CC - Bisbee
ADEQ Public Water System No. _____ →	02-001

MONTH/YEAR (LAST 13 MONTHS)	NUMBER OF CUSTOMERS	GALLONS SOLD (Thousands)	GALLONS PUMPED	GALLONS PURCHASED
September-20	3,425	24,367	27,058	0
August-20	3,426	18,732	29,671	0
July-20	3,425	23,594	29,311	0
June-20	3,412	25,545	33,960	0
May-20	3,407	21,607	28,493	0
April-20	3,407	14,830	22,900	0
March-20	3,410	13,968	20,424	0
February-20	3,407	13,259	17,860	0
January-20	3,414	14,811	19,224	0
December-19	3,414	13,209	20,045	0
November-19	3,406	309	17,440	0
October-19	3,423	18,079	22,753	0
September-19	3,409	17,307	24,505	0

STORAGE TANK CAPACITY (Gallons)	NUMBER OF EACH	ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER	WELL PRODUCTION (Gallons per Minute)
Naco - 100,000	1	55-616586 - Naco #2	80
Warehouse - 600,000	1	55-616585 - Naco #3	670
Tin Town #3 - 1,000,000	1	55-616584 - Naco #4	800
Tombstone Canyon - 450,000	1	55-590620 - Naco #5	440
Mountain Rch Ests #1 - 10,000	1		
Mountain Rch Ests #2 - 10,000	1		
Spring Canyon - 100,000	1		
Spring Canyon - 11,000	1		
Warren - 100,000	1		

Other Water Sources in Gallons per Minute _____ →	GPM 0
Fire Hydrants on System _____ →	(YES) NO
Total Water Pumped Last 13 Months (Gallons in Thousands) _____ →	313,644

Figure 1: Bisbee Planning Area Certificate of Convenience and Necessity Boundary.

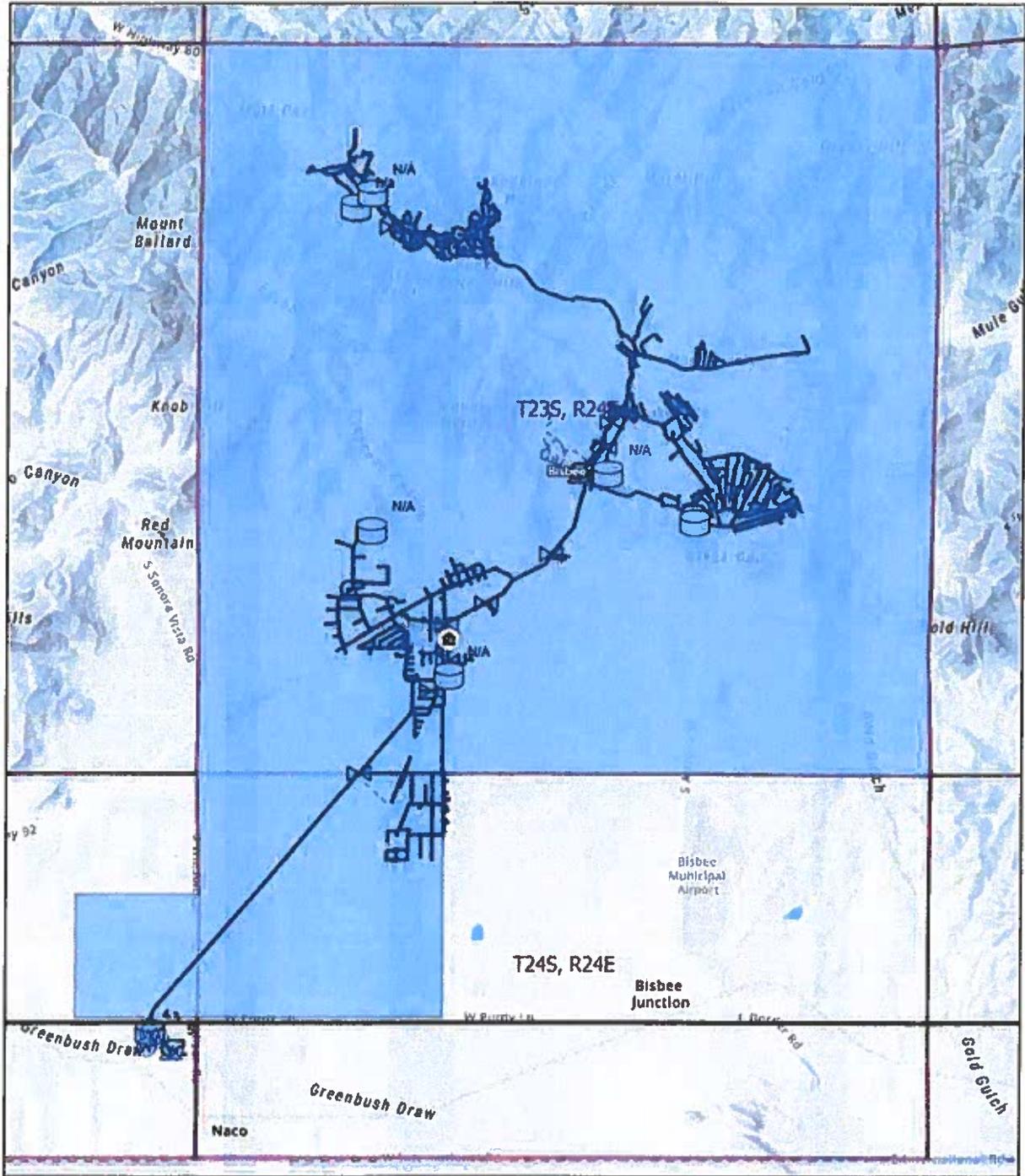


Figure 2: Bisbee Planning Area Infrastructure.

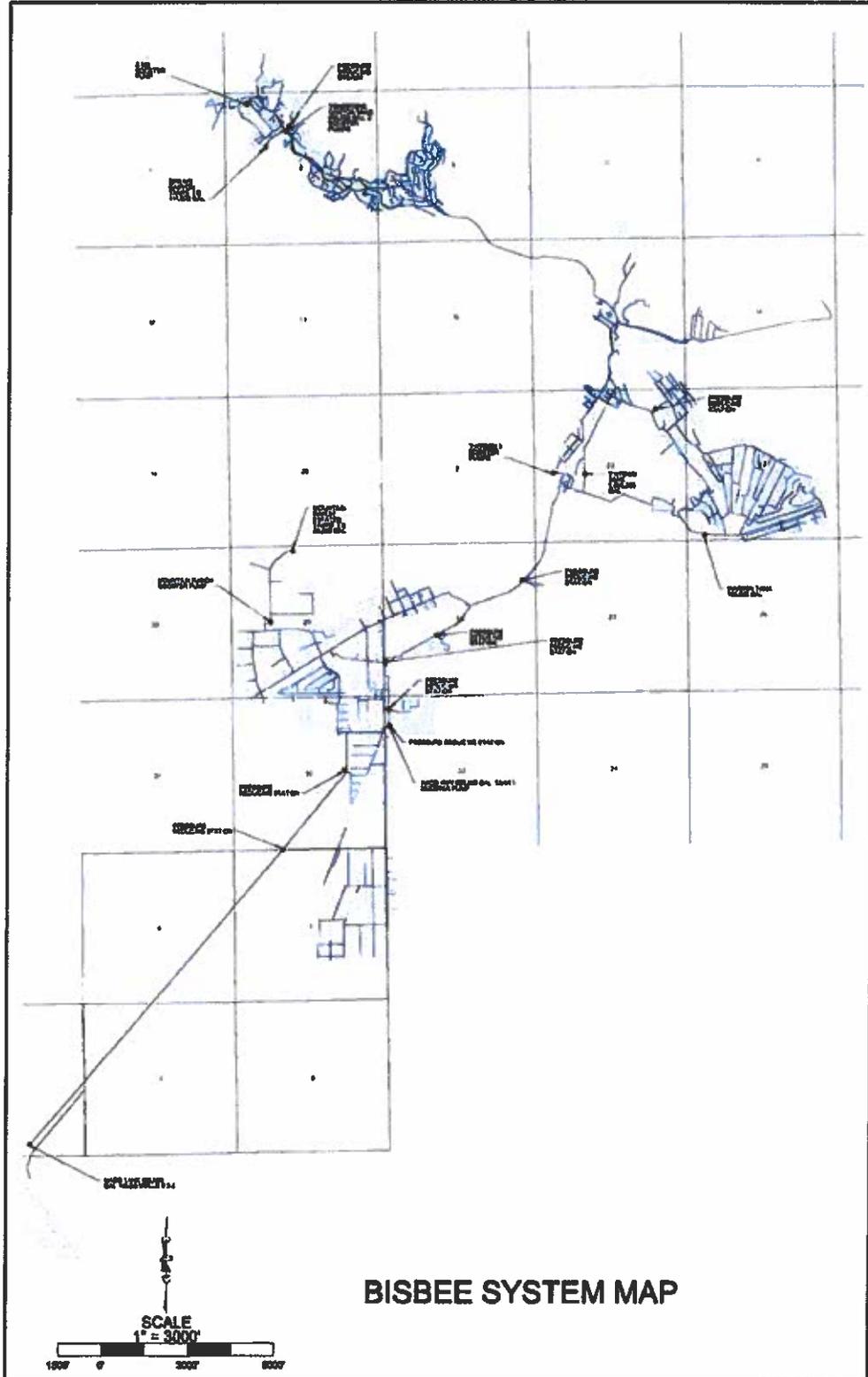


Figure 3: Old Bisbee Fire Suppression System Infrastructure

Figure 4: Bisbee Pressure Zones

Figure 5: Bisbee System Schematic

ARIZONA WATER COMPANY BISBEE WATER SYSTEM SCHEMATIC

