Ivins City Staff Report
City Council Meeting 6/15/17

Agenda Item: Approval of expenditure for engineering services to prepare Culinary Water Master Plan, Impact Fee Facilities Plan, and Impact Fee Analysis

Submitted by: Thomas J Jorgensen, P.E., Assistant Public Works Director

Recommended City Council Action:
Approve expenditure of $43,792 for engineering services to prepare Culinary Water Master Plan, IFFP, and IFA plus an additional $6,208 for contingency for a total of $50,000

BACKGROUND:

Ivins City last updated the Master Plan, the Impact Fee Facilities Plan, and the Impact Fee Analysis for the Culinary Water system in 2013. During 2016-2017, Ivins City has been going through the process of updating the Irrigation, Wastewater, and Storm Water Master Plans and was intending on updating the Culinary Water Master Plan once those were complete. As the council may be aware, the master plans for storm water and wastewater are complete, but the irrigation has yet to be completed. During the process of completing the Irrigation Master Plan it became apparent to staff that finalizing the irrigation plan needed to take place in conjunction with the preparation of the culinary water plan. Since these two systems are so integral to one another it was apparent that finalizing the Irrigation Master Plan without updating the Culinary Water Master Plan left a lot of questions unanswered. Additionally, once the irrigation system is brought online it is anticipated that the two systems will be operated under the same fund. Since the two are anticipated to be operated under the same fund, it became clear that both plans should be prepared simultaneously.

Since Bowen Collins & Associates (BC&A) is preparing the Irrigation Master Plan, staff requested a scope and fee proposal to prepare the Culinary Water Master Plan during which time they would finalize out the master plan for irrigation.

FINDINGS AND ANALYSIS:

The following cost proposal was submitted by BC&A for the preparation of the Culinary Water Master Plan:

Bowen Collins & Associates - $43,792

Due to the high degree of specialty required for preparing master plans and impact fees and due to the amount of correlation required between the irrigation and culinary water master plans, staff is recommending that BC&A be selected for the completion of this work. Staff is requesting a total expenditure of $50,000, which includes a contingency of $6,208 to help account for possible unforeseen expenditures during the planning process.

SUPPORT MATERIALS:

- Bowen Collins & Associates Proposal

FINANCIAL IMPACT:
The expense is impact fee eligible and impact fees will be used to pay for the study.
GL 51-42-840: $50,000

Respectfully Submitted:

Thomas J Jorgensen, P.E., Assistant Public Works Director

Content Review:

Dale Coulam, City Manager

Bowen Collins
& Associates, Inc.
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May 10, 2017

Chuck Gillette
Public Works Director/City Engineer
Ivins City
55 North Main
Ivins, Utah 84738

Subject: **Proposed Scope of Services for Ivins City Culinary Water Master Plan, Impact Fee Facilities Plan, and Impact Fee Analysis**

Dear Chuck:

In accordance with your request, this letter has been prepared for your review and consideration. Below is a scope of services and an associated fee for Bowen Collins & Associates (BC&A) to provide engineering services to evaluate and master plan the City's culinary water system in terms of redundancy, efficiency, and required projects to meet the City's goals and service potential growth. The scope of services presented herein describes the individual tasks that will be performed to accomplish these objectives. The tasks are summarized as follows:

Task	Description
Task 1	Collect, Review, and Organize Data
Task 2	Progress and Coordination Meetings
Task 3	Update and Calibrate the Hydraulic Model
Task 4	Supply/Source Analysis
Task 5	Storage Analysis
Task 6	Conveyance and Distribution System Analysis
Task 7	System Rehabilitation Evaluation/Kayenta Water System Valuation
Task 8	Develop a Water System Capital Facilities Plan
Task 9	Develop an Impact Fee Facilities Plan and Impact Fee Analysis
Task 10	Report Preparation

PROPOSED SCOPE OF SERVICES

Task 1 - Collect, Review, and Organize Data

BC&A will collect, review, and organize the data needed to perform the tasks listed in this scope of services. This will include the following information:

- Previously completed culinary water system master plans
- Water system master plan reports for surrounding entities
- Recent water resources annual reports
- Water use data from the last 4 years

- Existing water system maps and attributes in GIS format that includes pipe location, age, material, locations and sizes of existing fire hydrants, and location and sizes of water meters
- GIS information detailing locations and attributes of wells, springs, pumps, pressure reducing valves, reservoirs, and other pertinent system facilities

As part of this Task, BC&A will prepare for and attend a project kickoff meeting to review the project objectives and schedule, develop project and data coordination procedures, and discuss questions regarding information to be provided by the City.

Task 2 – Progress and Coordination Meetings

BC&A will prepare for and attend up to three (3) progress/coordination meetings with the City to review goals and findings as the master plan progresses. BC&A will also prepare and attend up to two (2) meetings with the Ivins City Council to present and discuss finding and recommendations for the master plan update.

Task 3: Update and Calibrate the Hydraulic Model

BC&A will work with Ivins City personnel to update and calibrate the steady state computer model of the existing water system that will be used to simulate system operations. This update will include changes to PRV settings, new pipelines installed, and other system modifications since the last master plan. BC&A will also work with the City to collect available fire flow test data and any other system pressure data that exists at the City. BC&A will then use this information to calibrate the existing hydraulic model to match observed system pressures.

The hydraulic computer model will include demand scenarios which simulate system operation with and without the addition of a secondary pressurized irrigation system. These scenarios will be used to compare capital improvement alternatives for the culinary water system and potential secondary pressurized irrigation system.

Task 4: Supply/Source Analysis

BC&A will meet with planning and engineering personnel as appropriate to quantify existing supply production and future supply alternatives. This will include consideration of historic source production and water rights. Based on the available supply estimated for the City, BC&A will evaluate the adequacy of the City's sources to meet projected demands on an annual basis, a seasonal basis, and a peak day basis through buildout. As part of this task, BC&A will perform the following:

- Update the population projections for the City's service area through the year 2046 (buildout) using information from the previous master plan as well as new growth related information available from local and state entities.
- Evaluate water right data as provided by the City.
- Compare water production needs for the culinary water system with and without the implementation of a pressurized secondary irrigation system.
- Identify how much of the City's irrigation needs can be met through the culinary water system for areas that may not be incorporated into the secondary irrigation system.

Task 5: Storage Analysis

BC&A will review the City's existing storage capacities and projected needs for existing and future storage (with and without the addition of a pressurized secondary irrigation system). This evaluation will include analysis on a system wide basis and will also consider each pressure zone independently. Total storage needs will consider equalization, emergency, and fire flow storage demands. BC&A will provide recommendations for storage capacities and will evaluate the potential for adding or modifying pressure zones throughout the system to optimize the use of storage. The storage evaluation will include demands for the culinary system with and without the addition of a secondary irrigation system, and will identify how much of the City's irrigation demand can be met via culinary water storage facilities for those areas that may not be included in the secondary irrigation system service area.

Task 6: Conveyance and Distribution System Analysis

Using the updated system demands, supplies, and distribution model, BC&A will evaluate the performance of existing and projected future conveyance and distribution facilities. This will include the evaluation of the following:

- Water conveyance system including evaluation of pump station, transmission and distribution pipeline capacities.
- Available pressure and fire flows in the distribution system in accordance with State requirements.
- Emergency power needs for the water system and develop a plan for meeting minimum water deliveries during major power outages.

The conveyance and distribution system will be evaluated both with and without the addition of a secondary irrigation system. These simulations will be used to compare alternatives for addressing future system deficiencies by either increasing the capacity of the culinary water system or implementing a secondary irrigation system (or a combination of both). This will help the City identify the optimal point in time for the implementation of the secondary irrigation system.

Task 7: System Rehabilitation Evaluation/Kayenta Water System Valuation

In addition to addressing any deficiencies that may be identified in the hydraulic model, the City will also need to plan and budget for projects associated with system rehabilitation. To assist in this regard, BC&A will evaluate the replacement value of existing system assets and help the City develop a budget for system rehabilitation. BC&A will also meet with City personnel to identify any specific rehabilitation improvements needed based on their knowledge of existing physical facility conditions. This will not include a detailed asset management plan, but will include recommendations for developing a more detailed plan in the future.

As part of this task, BC&A will evaluate and provide a valuation of the existing facilities which make up the Kayenta Water Users (KWU) private water system. This valuation will be used by City management to analyze the possibility of integrating the KWU system into the Ivins City culinary water system.

Task 8: Develop a Water System Capital Facilities Plan

BC&A will develop a water system capital facilities plan for budgeting and planning purposes. This will include meeting with City personnel to develop prioritization criteria for recommended water system improvement projects. BC&A will prioritize recommended capital improvement projects based on whether needed improvements are to correct existing deficiencies or associated with future development and the other prioritization criteria developed with City personnel. BC&A will develop a detailed 10-year water system capital facilities plan. BC&A will then prioritize recommended improvements that should be made outside the 10-year planning window.

Task 9: Develop an Impact Fee Facilities Plan and Impact Fee Analysis

Using the recommended capital facilities plan identified in Task 8, BC&A will assemble an impact fee facilities plan (IFFP) for projects to be included in the 10 year planning window. BC&A will develop a methodology for dividing projects between expenses eligible for impact fees and expenses not eligible for impact fees. This will include consideration of capacity used by growth within the 10-year planning window and capacity used by growth beyond the 10-year planning window.

With the development of a defensible IFFP and other data contained in the master plan, BC&A will have the information necessary to develop an impact fee analysis (IFA). This will include:

- Identifying the impact of anticipated development
- Considering the method of financing existing and future facilities
- Determining the cost of existing capacity that will be recouped
- Determining the cost of system improvements that are related to new development activity
- Calculating an appropriate and defensible impact fee.

Task 10: Report Preparation

BC&A will prepare a report summarizing the results of this study. This will include the following activities:

- Prepare a draft electronic (pdf) report that summarizes the results of the study and presents the recommended water system capital improvements plan, IFFP, and IFA.
- Meet with City personnel to review comments on draft reports.
- Incorporate City comments into the final reports.
- Provide electronic (pdf) and 5 hard copies of the final reports to the City.

Potential Additional Tasks Items for Consideration (but not included in current scope and fee)

Detailed Asset Management Plan
Extended Period Hydraulic Model Simulation & Water Quality Modeling

COST SUMMARY

BC&A has tabulated the estimated man-hours and costs to complete each task outlined in the previously defined scope of services. As presented in the attached exhibit, we propose to complete the scope of services for a fee not to exceed $43,792.

We are willing to negotiate the scope of work, schedule, and fee if there is something in this proposal that does not meet your needs. We enjoy working with Ivins City and are very interested in providing engineering services on this project. We are available to start work immediately. Please call if you have any questions or if you need additional information.

Sincerely,

BOWEN COLLINS AND ASSOCIATES

Todd Olsen, P.E.
Project Manager