

FEE SCHEDULE

Hourly Rates by Role

Role	Rate
Project Engineer - Lead	\$201.00
Project Engineer - Senior	\$228.00
Project Designer	\$137.00
GIS Analyst	\$122.00
Project Accountant - Senior	\$117.00

	Mileage	GPS	Copying/ Reproduction	Subconsultant Quote
	\$0.66 / mile	\$46.50 / hour	\$0.10 / page	
Estimated Quantity	400	0	0	\$21,500.00

	Willardson, Paul Project Engineer - Lead	Smith, Nathan Project Engineer - Senior	Wakeham, Sam Project Designer	Montgomery, Danika GIS Analyst	Nielsen, Brandon Project Engineer - Senior	McArthur, Kristi Project Accountant - Senior	J-U-B Expenses	Subconsultant Expenses	Total Compensation
Project Management	39	28	20	0	0	7	\$200	\$0	\$18,000
Resource Documents and Data Review	4	10	28	15	0	0	\$0	\$0	\$8,800
Review Water Demand Estimates and Forecast	8	14	30	4	0	0	\$0	\$0	\$9,400
Update Water System Hydraulic Model and GIS Mapping	8	10	48	64	0	0	\$0	\$0	\$18,300
Calibrate Water System Hydraulic Model	5	6	24	0	0	0	\$100	\$0	\$5,800
Water Distribution System Analysis	5	12	40	0	0	0	\$0	\$0	\$9,200
System Graphics	1	2	4	16	0	0	\$0	\$0	\$3,200
System Replacement and Improvement Program	5	8	13	0	0	0	\$0	\$0	\$4,600
Capital Improvement Programs and System Master Plan	8	14	52	0	10	0	\$0	\$21,500	\$35,700
Total Hours	83	104	259	99	10	7			562
Total Cost	\$16,700	\$23,700	\$35,500	\$12,100	\$2,300	\$800	\$300	\$21,500	\$113,000

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J·U·B ENGINEERS, INC.



THE
LANGDON
GROUP



GATEWAY
MAPPING
INC.

J-U-B FAMILY OF COMPANIES

Hyrum City > Water

Statement of Qualifications for:

Hyrum City

Water Master Plan | February 28, 2024





HELPING EACH OTHER
CREATE BETTER COMMUNITIES



THE
LANGDON
GROUP



GATEWAY
MAPPING
INC.

J-U-B FAMILY OF COMPANIES

February 28, 2024

Todd Perkins, Hyrum City
60 West Main
Hyrum, Utah 84319

RE: Request for Proposals: Hyrum City Water Master Plan

Dear Todd:

J-U-B ENGINEERS, Inc. (J-U-B) is pleased to present to you this proposal for professional engineering services to create a Master Plan and Model for Hyrum City's Water System. The team that we have assembled has completed water master planning for many communities in Utah and Idaho. As you are aware, we also have a robust team of GIS professionals that are already familiar with Hyrum and its infrastructure.

One of J-U-B's guiding principles is to offer local understanding and personal client service that is backed with high-level technical expertise. Our team has vast knowledge of the InfoWater Software and will be able to produce a model that can be used by Hyrum City for critical decision making for years to come.

- » **Local Understanding and Responsiveness.** J-U-B is quickly becoming more and more familiar with Hyrum City and its infrastructure. We have strong relationships with your staff and have seen multiple projects succeed by working together with them. Our project manager, Paul Willardson, is based in our Logan office and is a resident of Hyrum City. He has been working with Hyrum City since 2016. Paul has a very good understanding of the history and the current conditions, constraints, and opportunities of this project. Danika Montgomery, our GIS specialist, has also been working with the Hyrum City power department since 2015. This immediate, local, and personal assistance will result in an efficient and cost-effective project that incorporates your input and is tailored to your specific needs.
- » **Local and Regional Water Master Planning Expertise.** Our team includes specialists who have water master plans for many municipalities and water treatment districts similar to Hyrum. These analyses carefully evaluate details of the infrastructure and have been an invaluable tool to municipalities across the intermountain west to assess existing infrastructure capacity and prepare for future growth.

We are excited to help you put the Water Master Plan together which will give Hyrum City peace of mind as they make important decisions related to water for years to come. Should you have any questions regarding this proposal please don't hesitate to contact us.

Sincerely,

J-U-B ENGINEERS, Inc.

A handwritten signature in black ink that reads 'Paul Willardson'.

Paul Willardson, PE

Project Manager
(435) 713-9514 | pwillardson@jub.com

1| Firm's Experience and Past Performance

Town of Garden City | Water Master Plan (2014)

Team: Quinn Dance, Nate Smith

The Garden City Culinary Water Master Plan outlined future infrastructure improvements to the Garden City culinary water system. It also provided the foundation for collection of culinary water impact fees for the Town through an Impact Fee Analysis. The key components that were completed with this plan were the following: provided a base level of service, determined future source, storage and distribution system needs, prepared population projection data, completed a Capital Facilities Plan (CFP) to plan for future projects with impact fees or user fees, and completed an updated hydraulic model.

J-U-B has worked with the Town for many years and continues to maintain the culinary water hydraulic model as development occurs within the town. We have also been able to utilize the Water Master Plan as minimum system sizing requirements have been provided by the State of Utah. The Water Master Plan and hydraulic model have been a key component for planning and smart infrastructure growth.

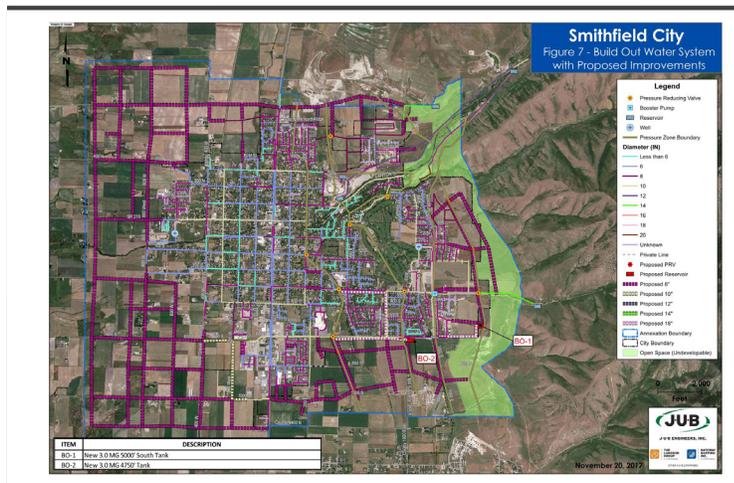


Smithfield City | Water Master Plan (2017)

Team: Chris Slater, Quinn Dance, Nate Smith, Danika Montgomery

For many years we have provided engineering services to Smithfield City with an emphasis on culinary water planning and modeling. J-U-B completed a water master plan update in 2017 for the City. This plan was a significant "update" that provided new information that would be utilized to prepare an updated impact fee to account for the anticipated growth in certain areas of the City. This master plan provided detailed cost estimates of various projects ranging from source and storage improvements to distribution upsizing to improve fire flow in certain areas of the City.

Upkeep and maintenance of the hydraulic model is an ongoing effort as development occurs within the City. Our team regularly updates the model and adds subdivisions and development as it occurs allows the City to remain compliant with the State requirements of having an updated and operational hydraulic model. This modeling effort combined with the master plan has allowed the City to make necessary improvements to the culinary water system in a timely manner. J-U-B is in the process of completing recommended projects for the City.



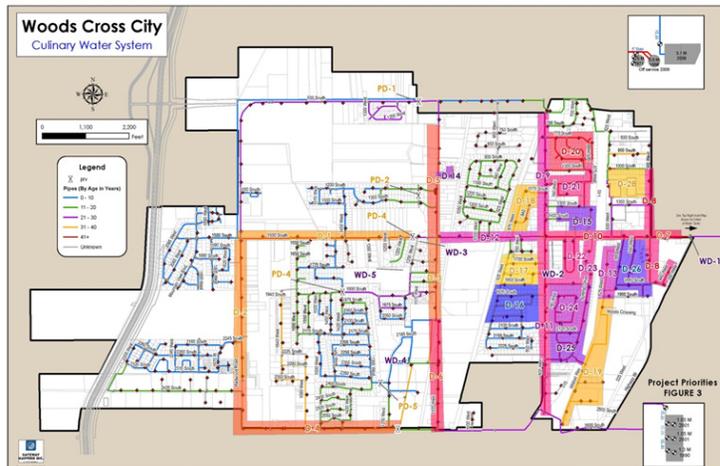
Woods Cross City | Culinary Water Asset Management Plan

Team: Nate Smith, Brandon Nielsen, Danika Montgomery

Woods Cross City became aware that their aging water system has elements in dire need of replacement. Some pipes were corroding, some materials originally used were fragile, some were undersized or deficient for existing needs. Impact fees will not cover these issues, so a utility rate adjustment was the preferred alternative.

J-U-B was called upon to review pipe age, pipe break history, soils type (corrosive), the existing water model for deficiencies, and other facility plans to coordinate the disruption of the roads. We estimated the cost for the 40 to 50 projects and then helped the City prioritize the projects. J-U-B was able to use its in-house GIS specialists as a helpful tool to incorporate the City's existing GIS information on pipe ages and break locations.

As a result of this project, a proposed rate increase of approximately 30% was determined to fund these improvements. The City is now able to move forward in completing the priority projects. It is expected that there will be water projects every year for the next 30 years and beyond totaling about \$10 million.



Corinne City | Water Master Plan & Capital Facilities Plan

Team: Nate Smith, Brandon Nielsen

Having seen surrounding communities caught off-guard by tremendous growth, Corinne City decided to be proactive and ready for growth. This required bringing all of their Master Plans, General Plan, Capital Facilities Plan, and impact fees into the 21st Century. Corinne City wanted to be organized and ready with updated ordinances and plans that would give the community a vision for the future as well as require new development to contribute in the cost of additional infrastructure, parks and trail development, and any other beneficial needs to the community.

The project included:

- » updating the General Plan
- » preparing Master Plans and impact fees for culinary and secondary water
- » updating the Master Plan for sewer treatment and infrastructure
- » developing a Master Plan for storm water, transportation, parks, and trails
- » developing impact fees for each area and updating the Capital Improvement Plan



The plan was completed two months ahead of schedule and within budget. With these plans in place and projects prioritized, Corinne City began improvements to their culinary water system including 5.25 miles of waterline and a 1MG water tank, funded in part with a \$2.6M SRF loan from the State Division of Drinking Water.

Davis & Weber Counties Canal Company | Long Term Plan, System Optimization Review & GIS Mapping

Team: Nate Smith

J-U-B has been the engineer for the Davis & Weber Counties Canal Company (DWCCC) for over 26 years. DWCCC's secondary water system serves the cities of Clinton, West Point, Layton and Kaysville. J-U-B prepared a Long Term Plan for DWCCC which included system modeling, identified water losses and identified priority improvement projects. Gateway Mapping (GMI) built GIS data structures for DWCCC and created applications using ArcGIS to track routine maintenance, call-outs, and repairs. On-site GIS training was provided for company staff at the onset of the project, and GMI continues to provide support for DWCCC on a regular basis as the GIS is continuously enhanced. Recently, GMI assisted DWCCC in adding the mapping and asset management of the company's main canal system to the GIS.



J-U-B has helped DWCCC implement this planning by acquiring grants and loans totaling nearly \$10 million. J-U-B has overseen the design and installation of pressure irrigation systems, reservoirs, pump stations, and transmission lines to expand and improve DWCCC's secondary system.

Kearns Improvement District | Secondary Water/Reclaimed Water Feasibility Study & Master Plan

Team: Nate Smith

Kearns Improvement District (KID) decided to investigate the feasibility of providing secondary water to large water users within the district. J-U-B first did a secondary water feasibility study, and then with the approval and direction of the board developed a secondary water master plan. The District provides culinary water and sanitary sewer services to over 13,000 connections. The District wanted to investigate the feasibility of converting some of their large open space customers to using secondary water, conserving the expensive and good quality culinary water for culinary use. The comprehensive secondary water feasibility study and secondary water master plan that J-U-B completed for KID was partially funded by a grant obtained from the Bureau of Reclamation. The study and master plan evaluated potential sources of secondary water including wells, canals, stormwater, the current wholesale supplier, and reclaimed water. The reclaimed water alternatives included a district-owned scalping facility and the evaluation of expanding treatment and pumping from the regional wastewater treatment facility. J-U-B also coordinated communication with a number of different agencies and organizations involved with potentially providing secondary water in the Kearns Improvement District. District staff and board members provided substantial input on the master plan.

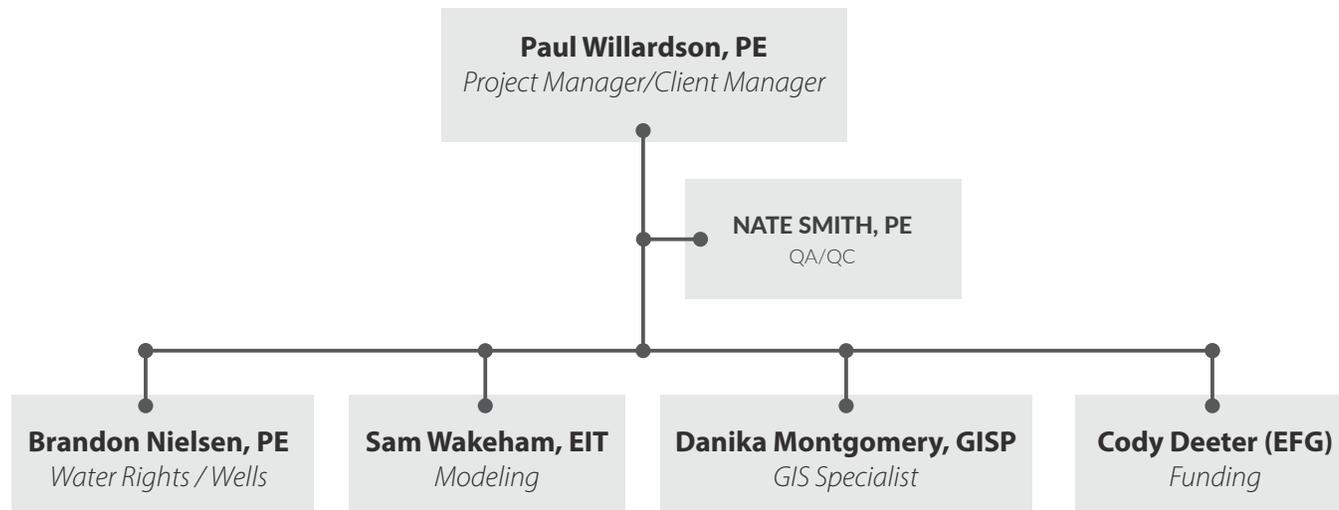


3

2 | PROJECT TEAM

J-U-B has brought together an experienced, multi-disciplinary project team for Hyrum City. Paul Willardson, the project manager, will remain on the project throughout project duration, unless approved by City.

ORGANIZATIONAL CHART



TEAM BIOS



Paul Willardson, PE | Project Manager / Client Manager

Paul has 16 years of engineering experience with projects in the water, waste water, structural and transportation disciplines. His strengths within J-U-B are his abilities to communicate well with the client and construction companies as well as his ability to set priorities and goals and accomplish them in a timely manner. Paul is a skilled engineer with a talent for working with other professionals and contractors on small and large projects.

Paul has built good rapport with the local municipalities and is respected among them due to the fair treatment and respect that he has shown in past projects. He is able to collaborate and work through issues effectively while, at the same time, making sure the needs of the client are met.



Nate Smith, PE | QA/QC

Nate has 17 years of experience working on water, sewer, irrigation, and storm drain projects. He has spent the much of that time using computer modeling to analyze complex culinary water, secondary irrigation water, sewer, and storm drain systems. This modeling has been done in Innovyze’s modeling software; InfoWATER and InfoSWMM. Nate has also completed the hydrology and hydraulics calculations for several projects.

His modeling experience includes open channel systems, closed conduit gravity systems, and closed conduit pressure systems. His breadth of modeling includes simple one pipe systems to complex city-wide networks. In addition to his modeling experience he has worked as part of the production team on multiple design projects, working in Civil 3D to create alignments and profiles, checking for utility conflicts and designing project details. He has taken on the project management responsibilities for multiple design projects, coordinating design from project conception through construction.



Sam Wakeham, EIT | Modeling

Sam specializes in water resources engineering. His experience in construction gives him added understanding and perspective as he designs in his expertise, which includes culinary, irrigation, and storm pipeline design as well as hydraulic modeling for gravity and pressurized pipe systems. He utilizes AutoCAD, Civil 3D, and InfoWater software.



Brandon Nielsen, PE | Modeling

Brandon has 25 years of experience in water resources projects. He is experienced in water modeling and master planning, all aspects of water wells including feasibility and site evaluation reports, aquifer classification, source protection zone delineation and planning, well drilling and equipping design, test pumping, and drawdown calculations. He is authorized by the Utah Division of Drinking Water as a grout seal witness.

His water rights experience includes preparing reports of conveyance, change applications, proving beneficial use, filing extension requests, and preparing water rights portfolio summaries. He holds a certificate from the Utah Division of Water Rights.



Danika Montgomery, GISP | GIS Specialist

Danika has over seven years of practical GIS experience, with responsibilities that include GIS project work, training, computer programming, hardware and software installation, and on-site GIS support for public and private sector Geographic Information Systems clients. Danika's experience includes data creation, conversion, and management; map design and production; GIS analysis; GIS development; aerial photo interpretation; and GPS set up and workflow integration. She is an effective and contributing team member, with proficiency in Esri software products and various other GIS tools.



Cody Deeter | Funding

Cody Deeter is the CEO and President of Energy Finance & Government Consulting. The core mission of EFG is to help government and businesses make excellent long-term financial decisions. EFG can bring custom solutions to its clients utilizing its network of strategic engineering, legal, and financial partners.

3 | SCOPE & COST OF SERVICES

Understanding

Hyrum City, like many other communities of Cache Valley, is growing. With this growth comes an increased need for a plan to continue to adequately meet the demands that will be placed upon the City's water system. The City needs to identify what improvements will be needed to repair existing water system components and what new water system infrastructure is needed to serve new areas of development. This plan will outline and prioritize what projects should be done to ensure that the residents of Hyrum continue to receive great water delivery and service for the next 20 years and beyond. Additionally, this plan must identify what portion of the future water system projects are needed to serve existing residents and what portion is needed to serve future growth. From this evaluation new water utility system rates will be developed for existing and future users and new impact fees will be determined for future connections to the system.

Approach

Our approach to water master planning is to work closely with the City to gather the information that will most be needed to create a well calibrated model. We utilize internal staff to do all of the tasks for these plans except for the impact fee assessment and the utility rate study. We will work with Cody Deeter from EFG Financial to complete the financial aspects of your plan. We have worked with EFG on many of these projects together in the past and found it to be very valuable for our clients to have a financial consultant that specializes in impact fee analysis and rate studies.

We have done GIS work for Hyrum City in the recent past and will utilize our GIS experts as we build your water model. Our GIS team will build an inventory using data that the city provides. We will put this data in an on-line viewer that the city staff can access to update or track various water system information such as pipe materials, installation dates, and other data the city wants to track. This can be a very useful and valuable tool for you as you manage your system.

In our past master plans we have been very successful in evaluating summer and winter water demands based on culinary water meter data. We will evaluate your meter data to understand the indoor and outdoor demands for various areas of your city and use our GIS team to effectively illustrate this and other key information in figures in the master plan report.

Most of the water models we build are built in Infowater software. This experience will allow us to work very efficiently to develop your models with the various scenarios that you want to see.

A well calibrated model will allow Hyrum City to be confident that the recommended actions and projects are based on actual conditions and makes for more defensible impact fee assessments. We will utilize the existing water use data from you water meter records to build the model and use the residual pressure flow test data to calibrate that model. We will then use the parameters that we used to calibrate the existing model to build your future model scenarios.

Our team is made up of local experts and we are located close which allows us to better serve you.

	Tasks	Start	End	3/2024	4/2024	5/2024	6/2024	7/2024	8/2024	9/2024
060	Water Distribution System Analysis	7/1/2024	7/22/2024							
	Model Scenarios									
	Run and analyze existing scenario									
	Run and analyze future scenarios									
	Water age analysis									
070	System Graphics	7/1/2024	7/22/2024							
	Mapping									
	Create figures for the report									
080	System Replacement and Improvement Program	7/1/2024	9/30/2024							
	Replacement Program									
	Identify deficiencies									
	Determine yearly maximum replacement									
	Replacement program documentation									
090	Capital Improvement Programs and System Master Plan	5/6/2024	9/30/2024							
	Capital improvement list									
	Master plan									
	IFA and rate study									



Professional Engineering Services

Statement of Qualifications Hyrum City Water Master Plan

February 2024



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Cover Letter

Section 1 Firm Experience and Project's Teams Past Performace

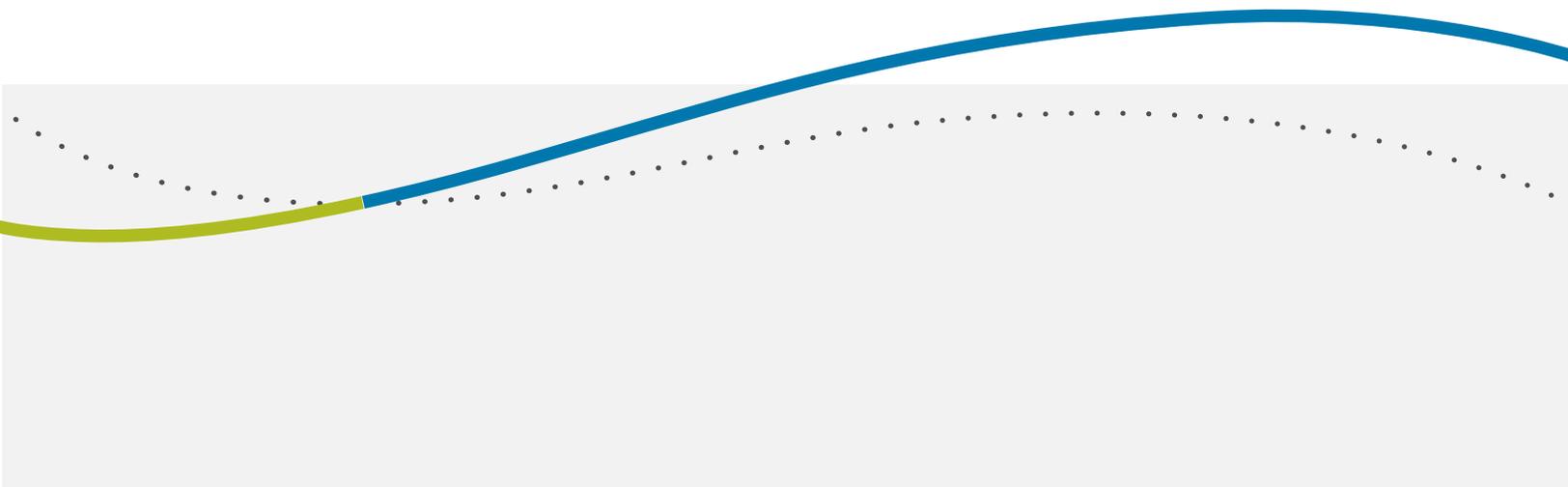
Section 2 Project Team

Section 3 Project Understanding & Approach

Section 4 Project Scope of Work and Deliverables /Optional Items

Appendices

Key Personnel Resumes



Hyrum City
Todd Perkins
Financial Administrator
60 W Main St.
Hyrum, UT 84319

February 28, 2024

**RE: Hyrum City Water Master Plan
Professional Engineering Services Proposal**

Dear Todd,

On behalf of Aqua Engineering (AQUA) it is a pleasure to submit our proposal to provide professional engineering services to Hyrum City for a comprehensive Water Master Plan that includes a hydraulic model, GIS development for the water system, and a Development Impact Fee (DIF) and rate study. AQUA has carefully reviewed your Request for Proposal (RFP) and has assembled a well qualified team of engineers, sub-consultants and specialists with expertise directly related to the requirements necessary to complete this Master Planning project.

AQUA is well experienced in water system Master Planning. Coupled with the expertise of Zion's Financial, who will be providing the DIF and Rate Study analysis, the City will have the best possible resources available to them. Additionally, AQUA has included Scale Consultants on the project team to provide the GIS data gathering and development requirements for this project. Together, the AQUA, Zion's Financial, and Scale team brings an unparalleled team of experts who will address your specific needs and requirements that are tailor-made for your vibrant and growing community. You know of our history in working with the City, and no one else has the background and experience that we have working and performing engineering tasks for the Hyrum Water System.

The team that we have assembled for this project is outlined in this proposal. This team of professionals will be led by Darin Hawkes, PE who is the Principal-in-Charge over Municipal Projects at AQUA. Daniel Woodbury, PE will serve as Project Manager, taking an active leadership role for each of the major aspects of this project; the master planning, the hydraulic modeling, the financial analyses, and the GIS development. This ensures your project will benefit in multiple ways. Resumes of our team members' specific experience are provided in the Appendix.

AQUA is committed to performing above and beyond the normal engineering standards for Hyrum City and to producing a successful and comprehensive Water Master Plan Project that meets the quality that the City expects and deserves. Our contact information is as follows:

Darin Hawkes, P.E., S.E., Principal
533 West 2600 South, Ste. 275
Bountiful, UT 84010
Office: 801-683-3727 (Direct)
Mobile: 801-450-7592
Email: darin.hawkes@aquaeing.com

Dan Woodbury, P.E., Project Manager
533 West 2600 South, Ste. 275
Bountiful, UT 84010
Office: 801-683-3759 (Direct)
Mobile: 801-201-2412
Email: dan.woodbury@aquaeing.com

We appreciate the opportunity to present our proposal and look forward to continuing our relationship with Hyrum City. On behalf of our team, we very much look forward to working with you again and remain committed to give

you our best effort. Please call me, or any of the team members if you have any questions regarding our proposal.

Respectfully,

A handwritten signature in blue ink, appearing to read "Darin Hawkes". The signature is fluid and cursive, with a large initial "D" and "H".

Darin Hawkes, P.E., S.E.
Principal



Firm Introduction

AQUA Engineering (AQUA) and SKM Engineering (SKM), where excellence meets innovation. We pride ourselves on being an affiliated group of highly skilled professionals, setting us apart in the field of engineering solutions for both public and private sectors across the nation. Clients choose us for our unwavering commitment to delivering top-notch services and our exceptional ability to tackle intricate engineering challenges with efficiency, all while achieving sustainable and impactful results. AQUA comprises a dedicated team of seasoned engineering professionals, leaders, and associates, each an expert in their respective disciplines. We are fully committed to not only meeting but surpassing our clients' project goals. Our focus extends beyond project success to safeguarding the environment and enhancing the quality of life for the communities we serve.

AQUA Engineering (AQUA) provides innovative engineering, operations, and construction solutions to clients nationwide. Since 1992, we have served the public and private sector. AQUA's proven experience demonstrates our capacity and stability to deliver projects that are sustainable and operable. Our team consists of experienced professionals, designers, programmers, technicians, and associates who are capable of solving your needs and are fully committed to your success. Together, we are able to give you the best project solutions possible. We have offices in Utah, Colorado, and Oregon.

Teaming Partner

Scale Consultants, P.C. is owned and operated by Gregory Wilson, P.E., P.L.S., and has operated since 2019. Scale Consultants specializes in offering professional services to larger engineering/surveying companies, specifically with data collection and Geographic Information Systems (GIS). Greg is both a licensed professional engineer and a professional licensed land surveyor. As such, he understands the intricacies of, and has worked extensively with, numerous projects that required detailed GIS interfacing and spatial data management. He has worked in the engineering/surveying industry for over 25 years, and during his career spent six years working as a US Military contractor maintaining the base maps for all the US Military bases in Afghanistan. Additionally he worked for Riverton City in development review and transfer of those developments to the City's own GIS system.

Zions First National Bank (Zions) was founded in Salt Lake City in 1873 and continues its legacy of strength and stability as one of the oldest financial institutions in the Intermountain West. To bring value to individuals, small-to middle-market businesses, nonprofits, corporations and institutions, Zions Bank provides a wide range of traditional banking and innovative services. Zions Bank is a division of ZB, N.A., which operates in nearly 500 local financial centers across 11 Western states: Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, Texas, Utah, Washington and Wyoming. ZB, N.A.'s parent company is Zions Bancorporation, which is included in the S&P 500 and NASDAQ Financial 100 indices (NASDAQ: ZION).

Zions Public Finance, Inc. (ZPFI), is comprised of a team of 21 professionals committed to providing unparalleled service to municipal entities, local districts, government agencies and private clients throughout Utah and the Intermountain West. We have two primary service areas: 1) financial advisory to assist governmental entities in the bonding and disclosure/ reporting process; and 2) municipal consulting services focusing on economic development, planning, real estate development advisory and fee-related services.

SECTION 1 EXPERIENCE & QUALIFICATIONS

Presented below is a summary of select clients that we have been involved in with similar engineering services.	Solutions Provided						
	Master Planning / GIS	Municipal Engineering	Water Resource Planning	Water Source & Distribution	Water Master Planning	Water & Wastewater Design Engineering	Funding Assistance
City of Corona						●	●
City of Beaumont	●		●			●	●
City of Elko	●		●			●	●
City of Imperial	●		●			●	●
City of Jerome	●	●			●	●	●
City of Orem			●			●	●
City of Springville	●	●	●			●	●
City of West Wendover <i>*Reference Provided</i>	●	●	●	●	●	●	●
Deseret Peak Special Service District	●						
Driggs, Idaho	●	●	●	●	●	●	●
Elk Ridge City <i>*Reference Provided</i>	●	●	●	●	●	●	●
Emigration Improvement District <i>*Reference Provided</i>	●	●	●	●	●	●	●
Grantsville City <i>*Reference Provided</i>	●	●	●	●	●	●	●
Hayden Area Regional Sewer Board						●	
Hyrum City <i>*Reference Provided</i>	●	●	●	●	●	●	●
Indian Hills Water District	●			●	●	●	
Last Gallinas Valley Sanitary District	●	●	●			●	●
Mayflower Mountain Resort	●		●	●	●	●	
Mountain Regional Water SSD <i>*Reference Provided</i>	●	●	●	●	●	●	●
Oakley City	●	●	●	●	●	●	●
Orem City	●	●				●	●
Payson City	●	●				●	●
Rexburg, Idaho	●	●				●	●
South Davis Sewer District	●	●				●	●
Tooele City	●	●				●	●
Town of Bennett	●		●	●	●	●	●
Western Riverside County Regional Wastewater Authority	●		●			●	●
Wolf Creek SSD	●	●				●	●

Municipal & District Consulting Services

Each city, county, and service district has their own unique challenges as it strives to meet the needs of its rate payers. Our goal is to learn and become familiar with these challenges and to find solutions that best fit your circumstances and operations. We listen to your ideas and needs instead of imposing our solutions on you. AQUA has established a reputation for designing municipal infrastructure and facilities that are maintenance friendly and cost effective.

Services Include:

- ✓ Mapping & Modeling Utilities
- ✓ Master Planning
- ✓ Water Resources
- ✓ Water Distribution & Storage
- ✓ Capital Facility Planning and Impact Fee Analysis
- ✓ Environmental Compliance
- ✓ Grants and Loans Applications
- ✓ Storm Drainage Systems
- ✓ Sewer Collection
- ✓ Subdivision & Land Development
- ✓ Construction Standards Development
- ✓ Construction Specifications
- ✓ Road Systems Design
- ✓ Solid Waste Disposal Landfills
- ✓ Transfer Facilities
- ✓ Parks & Recreation
- ✓ Streets & Boulevards

Hyrum City

Kade Maughan, Water System Superintendent, Hyrum City | P: 435.245.6033 | E: kademaughan@hyrumcity.com

AQUA Engineering serves as the contract City Engineer for Hyrum City, Utah. As part of their responsibilities they have designed numerous improvements and additions to the City's water distribution, source and storage systems, as well as the City's wastewater collection system and treatment works. They have updated 1,000-3,000 feet of pipe each year since 2006, replacing outdated or undersized piping with 8" or larger pipe to meet State size, material, flow and pressure requirements. The 2011 Water Improvement Project included 3100 feet of 8-inch to 14-inch mainline, cased installation in UDOT right of way, coordination to avoid construction delays and traffic interruptions, as well as the replacement of all the services. It also included 2 PRV Stations. AQUA has designed numerous pump station for both potable, irrigation and wastewater conveyance including a 2100 gpm facility to pump treated wastewater effluent into the pressurized secondary irrigation system. This facility was design and permitted by AQUA.

Grantsville City

James Waltz, Public Works Director | Grantsville City | P: 435.884.0627 | E: jwaltz@grantsvilleut.gov

AQUA Engineering serves as the contract City Engineer for Grantsville City, Utah. As part of its duties AQUA has been responsible for the design of numerous improvements and additions to the City's water distribution system, streets and drainage network, and several municipal facility projects. AQUA has helped the City to design and construct thousands of feet of waterline from 8-inch to 16-inch, multiple PRVs, booster pump stations, groundwater development projects and disinfection facilities. In addition to the dozens of projects that AQUA has designed for the City, we have also implemented standard details and specifications for all projects occurring in City limits, and have assisted the City with review, approval, inspection of projects ranging from single family homes to multi-phase subdivisions and commercial business parks.

City of West Wendover

Chris Melville, City Manager | City of West Wendover | P: 775.664.3081 | E: cmelville@westwendovercity.com

AQUA Engineering serves as the contract city engineer for The City of West Wendover. AQUA reviews and inspects all new subdivision and site developments, improvement of existing developments, and also ensures compliance with Pollution Discharge Elimination System storm water and erosion control requirements. Our efforts also include project inspection and QA/QC as well as coordinating and working with planning commissions, city councils, and associated staff to make sure projects are designed and constructed correctly.

Elk Ridge City

David Jean, Public Works Director | Elk Ridge City | P: 801-423-2300 Ext. 5 | E: davidj@elkridgecity.org

AQUA Engineering serves as the contract city engineer for Elk Ridge City. AQUA reviews and inspects all new subdivision and site developments, improvement of existing developments, and also ensures compliance with Utah Pollution Discharge Elimination System storm water and erosion control requirements. Our efforts also include project inspection and QA/QC as well as coordinating and working with planning commissions, city councils, and associated staff to make sure projects are designed and constructed correctly. In addition to its' typical City Engineering duties, AQUA has helped Elk Ridge to design several projects ranging from water pipeline replacements, PRVs and booster pump stations, street improvements and municipal facilities.

Mountain Regional Water District

Reference: Brian Davenport, Operations Director | P: 435-940-1916 | E: briand@mtregional.org

AQUA Engineering serves as contract District Engineer for Mountain Regional Water District. As the District Engineer, AQUA is responsible for assisting the district with water system master planning, design engineering and construction management services for various water system improvements projects. AQUA has completed several water system master plans and capital facility plans for the District as well as designed multiple pump stations, PRVs, storage tanks and an energy recovery facility and the district's flagship water treatment facility. Notable projects include the Signal Hill Water Treatment Plant, a 4MGD micro-filtration membrane plant; the Lost Canyon Booster Pump Station, a 4,000+ horsepower pumping facility that conveys 7,000 Acre-Feet of raw water through 5 miles of high pressure welded steel pipe to the Snyderville Basin for regional water use by several water service districts including MRW; and the Silver Creek Tank and Pump Station which assist the District with its' sustainability goals by capturing the energy of water moving downhill through the use of micro-turbine, offsetting the District's energy costs by \$300,000 annually.

Emigration Improvement District

Eric Hawkes | Emigration Improvement District | P: 801-243-5741 | E: eric@ecid.org

AQUA Engineering has worked with Emigration Improvement District (EID) on various water related projects to improve water service and provide fire protection to the residents of Emigration Canyon. AQUA performed the initial water system evaluation and modeling followed by design and project management for the installation of 22,600 lineal feet of 8" water main along the main canyon road including fire hydrants, pressure reducing stations, connection to existing lines, service laterals, and asphalt patching. Once this project was completed, the water model for the system was updated and calibrated based on actual fire flow tests at several fire hydrant locations. In addition, a fire hydrant map was generated for the Salt Lake County UFA.

SECTION 3 PROJECT TEAM

AQUA has assembled a team of experts and specialists to provide the City with the right combination of skills and experience to meet the requirements and expectations associated with the Hyrum City Water Master Plan project. This entire team is located in our central Bountiful office and all work will be performed by these team members. Our team is readily available and prepared, fully committed, and passionate about working with the City.

Presented below is our organizational chart of key personnel who are ready and dedicated to Hyrum City. Key Personnel resumes are included in the Appendix for your use.



Key Personnel Qualifications



Darin Hawkes, S.E., P.E. | Principal In Charge

Contact: darin.hawkes@aquaeng.com | 801.683.3727

Education: B.S. Civil Engineering, University of Utah, 2003

Mr. Hawkes' has a vast amount of experience in various civil engineering disciplines. He specializes in difficult projects that often have space, access and/or extreme time constraints. He has developed a reputation for being able to view a problem from multiple angles to develop a solution that works for his client. His experience ranges from pumping system design, concrete storage tanks and open reservoir design, to large concrete water storage facilities and high elevation snowmaking reservoirs and dams. Many of his projects are provide as turn-key solutions for his clients with his direct involvement from conceptual design through contract administration and project close-out. As part of the AQUA team, he has led and assisted in the completion of several System Capacity Analyses, Municipal Capital Facility Plans and large-scale Master Plans for both culinary water and wastewater.

KEY PERSONNEL QUALIFICATIONS



Dan Woodbury, P.E. | Project Manager

Contact: dan.woodbury@aquaeng.com | 801.683.3759

Education: B.S. Civil Engineering, Brigham Young University, 1983

Mr. Woodbury joins AQUA Engineering and brings with him over 35 years of professional engineering experience in management and design for water resource and municipal projects. He has extensive experience with project management for hydraulic facilities including pump stations, wells, utility structures, flow measurement and controls, transmission lines and water conveyance systems. He has been involved with, and directed multiple Master Plans and Capital Improvement Plans, engineering feasibility, and water quality studies, and been involved with the design and implementation of many of the facilities and improvements recommended from those plans. Dan has directed and managed projects from concept phases to full design, and has also managed many of those projects through construction. His project experience ranges in value from a few thousand dollars to multiple millions of dollars. His recent experience running major projects for both Riverton City and Sandy City have given him special expertise including navigating the funding sources, and then designing and overseeing construction of the \$15M Secondary Water Metering Project; managing the construction of the \$6.5M 8600 South Storm Drain Installation Project; designing and managing the installation of more than 30,000 linear feet of both culinary and pressurized irrigation water lines; and designing and managing pump station expansion and upgrade projects.



Michael Maughan, P.E. | Project Engineer

Contact: michael.maughan@aquaeng.com, 801.874.5424

Education: ME Civil Engineering, Utah State University, 2016

Michael Maughan has 7 years of experience. His current focus has been municipal civil engineering and water resources. Mr. Maughan works and assists on projects from permitting to construction. His responsibilities include permitting, design (including structural design for hydraulic and water resource structures), construction documentation and assisting with construction management for the project.

Susie Becker, AICP | Vice President

For the past 29 years, Susie has specialized in fee studies and economic consulting and planning and has been the lead consultant on some of the largest and most challenging projects in the intermountain region, including funding mechanisms for the large Point of the Mountain project that spans Salt Lake and Utah counties, has testified before the Governor's Legislative Task Forces on economic policies and procedures in Utah and in impact fees, has been involved with numerous fee studies, as well as the creation of a multitude of community reinvestment areas. Her experience stretches from issues such as affordable housing concerns in resort communities like McCall, ID, to redevelopment of a large deteriorating commercial center in Mesa, AZ – the Fiesta District to utility rates for a newly-incorporated entity.

Aaron Sanborn | Vice President

Aaron has nearly a decade of experience with local government and municipal research. Prior to joining ZPFI, Aaron worked for Eagle Mountain City as a management intern, Financial & Management Analyst, and as Economic Development Director. He was also heavily involved in local government while still in his MPA program, working on several consulting projects with Utah cities. As economic development director, Aaron has been heavily involved in the commercial boom Eagle Mountain is currently experiencing. From providing analytical support, coordinating marketing, or directing business development, his efforts have resulted in over \$2.225 billion in direct investment in Eagle Mountain City. This includes the large investments by Meta (2018), Tyson Fresh Meats (2019), and Google (2021).

SECTION 3 PROJECT UNDERSTANDING & APPROACH

The AQUA/ZPFI/Scale team understands the need for Hyrum City to develop a comprehensive Master Plan to serve as a guidance document for the immediate future. The many cities and districts that this team has been involved with have utilized their own master plans to guide them through the growth, development, and capital projects of their organization in the most efficient and effective manner possible. The fact that Hyrum City desires to encompass each of the critical aspects of a complete and comprehensive Master Plan is a testament to their strong leadership and well organized administrative team. These critical aspects include the development of a functioning GIS of the water system, a thorough hydraulic model, and the financial analyses of the water rate structure as well as the development impact fees. Along with the development and analysis of these aspects, the development of a plan to install or replace capital facilities throughout the city is the ultimate goal in our development of this project. This will be the guiding plan for the city to help establish the yearly budgets and know how the projects will be financed. Developing the project in this fashion will provide the city with the capability to maintain and update the various aspects as the city grows and new developments, businesses, and industry enter the city.

Our team's approach is fairly simple and straight forward, but it is effective and the most efficient method to approach this type of project. Our experience has proven that this method will render the best possible outcome for the city. We will begin immediately by establishing lines of communication with and between our team members and the designated city staff members who will be involved with each of the various aspects of the project. We then begin collecting the necessary data and information that will establish the baseline, or starting point, for the overall project. This means we will coordinate with the County GIS manager to establish how much of the County system can be utilized for the City GIS. We plan to spend approximately 6 weeks in the field gathering survey grade quality data of the culinary water system to be imported into the GIS that will be specifically built for Hyrum City. This information will be augmented with and updated with any files, documents, or information the city holds in their files – including recent and planned subdivision and development projects.

As the GIS is being developed, two other critical aspects of the project can be progressing, or at least initiated. These would be the financial analyses and the hydraulic modeling. The background and existing conditions for each of these needs to be established to also determine the baseline. As the GIS information progresses and is completed, then the hydraulic model can be updated to reflect the completed system so that the various required scenarios and flow conditions can be analyzed and evaluated. Also, the anticipated growth and future forecasting can be applied to determine the capital projects that will be needed to meet the future needs. The financial studies can then be completed to determine the rates and fees required to be implemented now to also meet the future needs.

The data, information and analyses discussed above will be summarized and compiled in a final document – the Master Plan. But this document is more than just a summary. The how-to discussion will be presented and a full plan for the overall capital facilities will be developed and presented in the document. The financial evaluation and projections will also be provided. In short, a full comprehensive master plan that the city can use for the foreseeable future.

SECTION 4 SCOPE OF WORK & DELIVERABLES

Project Understanding

The City's Water Master Plan and Model Development project aim to address current and future challenges faced by the water distribution system. This comprehensive endeavor involves thorough analysis, strategic planning, and meticulous modeling to ensure the efficient and sustainable management of the City's water resources. Our understanding of the proposed scope of work encompasses key objectives, tasks, and deliverables outlined to achieve the project's overarching goals.

Deliverables

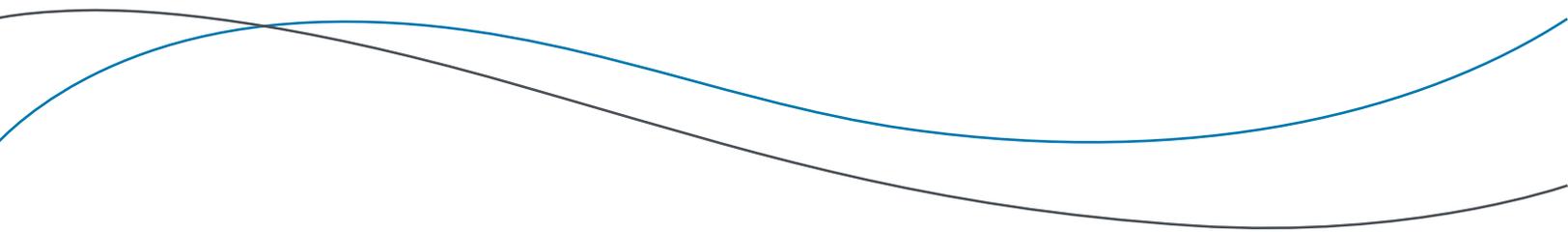
- ✓ Monthly narrative reports, invoices, and updated schedules
- ✓ Fully updated and calibrated hydraulic model
- ✓ Water Master Plan and System Master Plan, along with fee schedule breakdown
- ✓ Final report summarizing key findings, recommendations, and proposed actions.
- ✓ Presentation to City stakeholders outlining the Water Master Plan and Model development process, findings, and recommendations.

Scope of Work

Within Section III of the Request for Proposals (RFP), a detailed "Scope of Services" is delineated, spanning Tasks 1 through 10 across three pages. Due to space constraints, we choose to reference these tasks, affirming our commitment to their completion as described, along with the delivery of specified deliverables associated with certain tasks.

- ✓ Task 1 - Project Management
- ✓ Task 2 - Resource Documents and Data Review
- ✓ Task 3 - Review Water Demand Estimates & Forecast
- ✓ Task 4 - Update System Hydraulic Model & GIS Mapping
- ✓ Task 5 - Calibrate Water System Hydraulic Models
- ✓ Task 6 - Water Distribution System Analysis
- ✓ Task 7 - System Graphics
- ✓ Task 8 - System Replacement & Improvement Program
- ✓ Task 10 - Capital Improvement Programs & System Master Plan

Additionally, you will see further information associated with these tasks as they are outlined in the same manner in our fee schedule that is submitted under a separate email as is required by the RFP. The fee schedule shows the personnel anticipated to be used for this project, including those sub-consultants that we have identified in the previous section – Section 2 Project Team of this proposal. Also identified in the fee schedule is the rate of compensation for all proposed personnel to be used and the work effort anticipated for each, including the sub-consultants and the anticipated reimbursable expenses. With the project breakdown presented in this fashion, the whole Scope of Work is outlined precisely how we have described it in the Approach above and that each Task from the Scope of Services presented in the RFP will be provided.



APPENDIX A

RESUMES



Darin Hawkes, P.E., S.E. | Principal

Phone: 801.683.3727 | **Email:** darin.hawkes@aquaeng.com

Mr. Hawkes' has a vast amount of experience in various civil engineering disciplines. He specializes in difficult projects that often have space, access and/or extreme time constraints. He has developed a reputation for being able to view a problem from multiple angles to develop a solution that works for his client. His experience ranges from pumping system design, concrete storage tanks and open reservoir design, to large concrete water storage facilities and high elevation snowmaking reservoirs and dams. Many of his projects are provided as turn-key solutions for his clients with his direct involvement from conceptual design through contract administration and project close-out. As part of the AQUA team, he has lead and assisted in numerous design projects, the completion of several System Capacity Analyses, Municipal Capital Facility Plans and large-scale Master Plans for both culinary water and wastewater.

Project Experience

Driggs Idaho Water System Facility Plan

CAD software water modeling, Planning and system characterization

Western Zirconium Chemical Milling Facility Site Feasibility Study

Construction Feasibility Review

Sage Glen Well Preliminary Engineering Report

Develop PER as required per Utah Division of Drinking Water Requirements

Pole Canyon Wet Utilities Master Plan

Planning, Survey coordination, CAD Utility Modelling, Cost analysis

West Wendover Nevada Culinary Water and Wastewater System Master Plan

Planning

Mountain Regional Water 2MG Rectangular Tank Design | Principal-in-Charge, Project Engineer

Civil, Structural, Mechanical Design & Construction Management.

Mayflower 1.2MG Culinary Water Tank | Principal-in-Charge, Project Engineer

Civil, Structural, Mechanical Design & Construction Management

Mayflower Water Tank #2 and Pump Station | Principal-in-Charge

Owens Corning 225Kgal Fire Storage Tank Design | Principal-in-Charge, Project Engineer

Civil, Structural, Mechanical Design & Construction Management.

Colony Water Storage Tank Design | Principal-in-Charge

Hyrum City, Utah - 2MG Concrete Tank | Project Engineer

Civil, Structural, Mechanical Design & Construction Management.

Elk Ridge City, Utah - 1MG Prestressed Concrete Tank | Assistant Project Engineer

Civil, Structural, Mechanical Design & Construction Management, Master Plans, Capital Facility Plans, Planning Documents

MRWSSD Summit Park Tank #1 | Principal-in-Charge

Promontory Ranch 1MG Concrete Tank Design | Principal-in-Charge, Project Engineer

Civil, Structural, Mechanical Design & Construction Management.

Snowbird Snowmaking Reservoir Design | Principal-in-Charge, Project Engineer

Civil, Structural, Mechanical Design & Construction Management.

Education

BS Civil Engineering,
University of Utah, 2003

Registration

Professional Engineer (Structural):
Utah

Work Experience

21 Years

Affiliations

ASCE

Expertise

- Hydro and Civil Structural Design (Storage Tanks, Retaining Walls, Platforms, etc.)
- Pumping System Design
- Industrial Facility Expansion, Remodel and Retrofit
- Hydraulic & Hydrologic
- Computer Modeling
- Facility Plans & Master Plans
- Water Resources Treatment

Darin Hawkes, P.E., S.E. | Principal

Project Experience (continued)

Snowbasin Snowmaking Reservoir Design | Principal-in-Charge, Project Engineer
Civil, Structural, Mechanical Design & Construction Management.

Mayflower Mountain Resort Water Master Planning & Design | Principal-in-Charge, Senior Principal Engineer
Engineering Analysis, Hydraulic Modeling, Water Master Planning, Water Storage Tanks, Pump Stations, Flow Control Facilities, PRVs, Utility Design, Project Management

Mayflower Snowmaking System | Principal-in-Charge

Oakley Cattail Well (Weber Well) | Principal-in-Charge, Project Engineer

Utah Valley University Irrigation Well | Principal-in-Charge, Project Engineer
Civil, Structural, Mechanical Design & Construction Management.

Utah Valley University South Well Over drill | Principal-in-Charge, Project Engineer
Civil, Structural, Mechanical Design & Construction Management.

Utah Valley University Heat Exchange Wells
Civil, Structural, Mechanical Design & Construction Management

Marion Waterworks Company, Peterson Well Drilling Project | Principal
Civil, Mechanical Design & Construction Management

Hyrum City 2019 Public Works Projects | Principal-in-Charge

Deer Crest Booster Pump Station | Principal-in-Charge, Project Engineer
Civil, Structural, Mechanical Design & Construction Management.

Mountain Regional Water 2MG Tank Booster Pumping Station | Principal-in-Charge, Project Engineer
Civil, Structural, Mechanical Design & Construction Management.

Grantsville West Bench Booster Pumping Station | Assistant Project Engineer
Civil, Structural, Mechanical Design & Construction Management; Assisted with structural design.

Mountain Regional Water Bear Hollow Booster Pumping Station | Principal-in-Charge, Project Engineer
Civil, Structural, Mechanical Design & Construction Management.

Mountain Regional Water Blackhawk Booster Pumping Station | Principal-in-Charge, Project Engineer
Civil, Structural, Mechanical Design & Construction Management.

Hyrum City Reclaimed Water Pumping Station | Project Engineer
Civil, Structural, Mechanical Design & Construction Management.



Daniel Woodbury, P.E. | Project Manager

Phone: 801.683.3759 | **Email:** daniel.woodbury@aquaeng.com

Mr. Woodbury joins AQUA with experience in all aspects of civil design, water management, development, budgeting, and implementing industry standards and practices. Develops policy, plans, budgets and schedules. Director and organizer of operational personnel in public works and water divisions. Provides expert direction to administration in engineering and municipal affairs, including application of engineering standards and practices, regulatory requirements, water rights, resources, and decision-making requiring sound professional judgment. Experienced in hydraulic and hydrologic analysis and design.

Project Experience

City of Oakley, Oakley – Weber Well | Project Manager/Engineer

Oakley Well, grant and loan assistance, drilling well, equipping and housing of pump and motor, chlorination & valving in a new building. 2,000 feet deep aquifer well with 2,000 gpm capacity

Ray Quinney & Neveker, Patsey Marley Water Storage Tank and Pump Station | Project Manager/Engineer

200K gallon capacity tank located adjacent to Alta Ski Resort, 40 hp booster pump station
350 KW generator and emergency fire pump station

Hyrum City, Conservation Plan Update | Senior Project Engineer

Prepared and submitted the Water Conservation Plan (WCP) for the City. Obtained the State approval from the Division of Drinking Water

Hyrum City, 900 West Roadway Improvement | Project Manager/Engineer

Roadway widening, waterline replacement, drainage and irrigation routing and design, and a 3 jacking and boring utility crossing of the Railroad, striping and signing

Assistant Director, Public Works/Water Resources Engineer | City of Riverton

2014-2021 Directed the design and management of public works, including all culinary, pressurized secondary and storm water systems; implemented policy, conducts budgetary analysis, short- and long-term planning, created sustainable efficiencies while enforcing compliance with state, federal, and industry standards; overseen staff of 5 storm water division plus team of 3 secondary meter project contract employees. Successfully prepared federal (USBR) grant applications for award of over \$1.5 million applied to a \$14.5 million secondary water metering project.

Significant Riverton City Projects

- 11800 South culinary water metering/pressure reducing valve vault
- 13150 South design/construction management of road rebuild, culinary and secondary water line
- Design and implementation of secondary metering project
- Lovers Lane culinary water line replacement and road reconstruction project
- \$4.5M, 5-million gallon reinforced concrete storage tank
- Referendum and hearings process, design, and CM of conversion of deep well water to Jordan Valley Water Conservancy District purchase agreement

Chief Engineer, Sandy City Department of Public Utilities, June 2002 - July 2014

Coordinated and approved utility design, expansion, modification, and installation for all commercial and residential development; fast-tracked a \$6.5 million storm drain outfall project comprising 6 miles of concrete pipeline and box culvert; implemented capital improvement projects: well drilling and development with pump station design and construction, water/storm drain pipeline installation; launched new storm water division, drafted ordinance adopted by city council and hired staff to operate newly created division; and managed engineering team and crew of public utility inspectors.

Project Manager, Carollo Engineers, Inc. Salt Lake City, January 1991 - June 2002

Implemented storm water utility for Salt Lake City

Engineered SLC storm drain master plan; engineer for model development and analysis of drainage basins

Lead engineer; drainage design for Bangert Highway; 700 East; and other roadway projects

Education

Bachelor of Science, Civil Engineering,
Brigham Young University, 1983

Registration

Professional Engineer: UT

Certifications

Department of Environmental Quality
Water Distribution Operator: Grade IV
Instructor for Registered Stormwater
Inspector/Registered SWPPP Writer
Certifications

Work Experience

40 Years

Affiliations

ASCE: Past President; Secretary/Treasurer
AWWA
APWA
USWAC: Past Chairman

Expertise

- Hydraulic & hydrologic analysis & design
- Water Resource Projects
- Master Planning
- Capital Improvement Plans (CIP)
- Hydraulic Modeling
- Pump Stations
- Large Diameter Pipeline Design
- Jacking & Boring
- Process Treatment
- Drainage & Stormwater
- Construction Management

Dan Woodbury, P.E. | Project Manager

Project Experience (continued)

Notable Previous Projects

Water Resource Projects

- Central Utah Project Completion Act – Uintah Basin Replacement Project: \$240 M
- Wasatch County Water Efficiency \$4.5 M Project - CUP (10 pump stations)
- Jordan Valley Water Conservancy District flash mixing station
- Corps of Engineers/SL County Upper Millcreek diversion, conveyance, retention, USU hydraulic model
- Southeast Regional Water Treatment Plant upgrades: \$6.5 M Jordan Valley Water Conservancy District Actiflow System – Civil site design, yard and mechanical piping; On-site Resident Engineer

Storm Drain

July 2014-2021

Assistant Public Works Director/Water Resources Engineer | City of Riverton

- Directed the design and management of public works, including all culinary, pressurized secondary, and storm water systems

Significant Riverton City Projects

- Design and CM of 2800 linear feet of 12-inch waterline replacement and 2,000 feet of 36-inch RCP Storm Drain realignment and road rebuild in Stone Ridge Lane

June 2002-July 2014

Chief Engineer, Sandy City Department of Public Utilities

- Fast-tracked a \$6.5 million storm drain outfall project comprising 6 miles of concrete pipeline and box culvert
- Implemented capital improvement projects: well drilling and development with pump station design and construction, water/storm drain pipeline installation
- Launched new storm water division, drafted ordinance adopted by city council and hired staff to operate newly created storm water division

Significant Sandy City Storm Water Projects

- | | | | |
|--|----------|---|---------|
| • 8600 South Storm Water Project | \$6.5 M | • Falcon Dr. Storm Water Project | \$2.2 M |
| • High Point Storm Water Project | \$2.3 M | • Highland Drive Storm Water Project | \$1.2 M |
| • Wayside Drive Storm Water Project | \$0.5 M | • 11400 South Storm Water Project | \$1.4 M |
| • Detention Basin Rehabilitation Project | \$0.75 M | • South East Quadrant Storm Water Project | \$1.0 M |
| • 9400 South Storm Water Outfall Project | \$2.2 M | • Windy Peak Storm Water Project | \$1.2 M |
| • Storm Water Master Plan & Rate Study | \$0.1 M | | |

January 1991-June 2002

Project Manager, Carollo Engineers, Inc. Salt Lake City

- Implemented storm water utility for Salt Lake City
- Engineered SLC storm drain master plan; engineer for model development and analysis of drainage basins
- Lead engineer; drainage design for 2-1/2 miles of Bangert Highway-5400 S to 9000 S; including six major canal crossings, a box flume and a railroad crossing over the highway, RCP and CMP stormwater piping (18-inch through 84-inch), a 7-1/2 acre-foot combination detention/recreation basin and related utility crossings. 700 East-7200 S to Casa Negra Drive; and other roadway projects
- Drainage and storm water design for 700 East – 7200 S to Casa Negra Drive for UDOT

Sewer

Murray City 5600 South Sewerline Bypass

A 15-inch diameter, 2500 foot long gravity bypass sewer line was designed, bid, and built in a fast track scenario because of a flooding failure of the existing line. Dan performed the design and oversaw the construction of the new bypass line.

Murray City Sewer Collection System Model

Dan built a sewer model from scratch for the entire City of Murray using Sewer modeling software. That software became obsolete and was upgraded to EPA Sewer.

Murray City 500 West Sewer Collection Lift Station

The City was decommissioning the Wastewater Treatment Plant to connect into the new Central Valley Water Reclamation Facility (CVWRF) there was one leg of the old WWTP outfall sewer that didn't have enough grade to gravity flow to the new outfall to CVWRF. Dan designed a new 2 submersible pump lift station and wet well to be built in the corner of the old WWTP so that the site for the old plant could be cleaned and sold for development. The new lift station had a capacity of 2200 gpm with a double redundancy and emergency backup power.



Michael Maughan, P.E. | Project Engineer

Phone: 801.683.3750 | **Email:** michael.maughan@aquaeng.com

Mr. Maughan has 7 years of experience. His current focus has been municipal civil engineering and water resources. Mr. Maughan works and assists on projects from permitting to construction. His responsibilities include permitting, design, construction documentation and assisting with construction management for the project. He has assisted in multiple Municipal Capital Facility Plans and Master Plans for drinking water and wastewater systems.

Project Experience

Mayflower Mountain Resort, 1.2 MG Tank | Project Engineer
Structural and Mechanical Design, Construction Management

Mayflower Mountain Resort, Tank 2 and Pump Station 1 | Project Engineer
Civil, Structural, Mechanical Design and Construction Management

Oakley Cattail Well (Weber Well) | Project Engineer

Mountain Regional Water Special Service District | Silver Creek Water Tank - 2MG | Project Engineer

Utah Valley University Irrigation Well | Project Engineer
Civil, Structural, Mechanical Design

North Replacement Well Project – Grantsville, UT | Project Engineer
Civil, Structural, and Mechanical Design and Construction Management

Bennett, Co, Water Storage Tank and Booster Pump Station | Project Engineer
Project management, Engineering analysis, hydraulic modeling, structural design, pump design, and site utility layout design

Mountain Regional Water, Hidden Creek PRV & Booster | Project Engineer
Structural, mechanical and civil design, construction management and engineering analysis

Park City, UT, JSSD-PCMC Deer Crest Pump Station | Project Engineer
Prepared cost analysis, environmental, permitting and design for new booster pump station and pipeline

Mayflower Mountain Resort Water Master Planning | Project Engineer
project management, engineering analysis, hydraulic analysis and modeling, and water master planning

Johnstown, Co, Low-Point Wastewater Treatment Plant Expansion | Project Engineer
Structural design

Lakeview Business Park Water & Sewer Master Plan | Project Engineer
Project management, engineering analysis, hydraulic modeling, utility master planning, and design

Grantsville City Water Rights Capital Facilities Plan & Impact Fee Analysis Update | Project Engineering | Utility Analysis and Planning

Bennett, Co, Capital Asset Inventory Assessment & Master Plan Update | Project Engineer
Analyzed the existing water system and prepared water system master plan

Hyrum City, 2019 Public Works Projects | Project Engineer
Civil, Mechanical Design, and Construction Management

Western Zirconium, Plan Area 16 Ammonia Platform | Project Engineer

Fly Ash Landfill Storm Water Infrastructure Analysis | Project Engineer

Grantsville, Ut, Quirk Street Sidewalk Project TAP | Project Engineer

Education

B.S. Civil Engineering,
Utah State University, 2016

M.E. Civil Engineering,
Utah State University, 2016

Registration

Professional Engineer:
Utah

Work Experience

7 Years

Expertise

- Capital Facilities Planning
- Water Storage and Distribution
- Surface Water Hydrology
- Storm Water Management
- Sewer Collection
- Permitting
- Project Manual Preparation
- Development Plan Review
- Structural Analysis
- Hydraulic Modeling



Hayden Karren | Project Engineer

Phone: 801.683.3728 | **Email:** hayden.karren@aquaeng.com

Hayden Karren has experience in utility layout and pumping system design. As part of the AQUA team, he has assisted in various types of projects involving culinary water and wastewater to help produce effective solutions for clients.

Project Experience

Mayflower, 1.2 Million Gallon Water Storage Tank | Project Engineer
Construction Management

Oakley City, Drinking Water Source Protection Plan Update | Project Engineer

Mountain Regional Water, Glenwild Booster Station Upgrade | Project Engineer
Mechanical Design

Marion Waterworks Company, Peterson Well Drilling Project | Project Manager/Engineer
Civil, Mechanical Design & Construction Management

Hyrum City, Public Works Projects | Project Engineer
Civil, Mechanical Design

Caspers Ice Cream, 2022 Source Projection Plan | Project Manager/Project Engineer
Permitting

Hidden Lakes Association, System Upgrades PER | Project Engineer
Hydraulic Model Design

Salt Lake Service Area #3 | Project Engineer
Civil, Mechanical Design

West Wendover, West Wendover Boulevard Rehabilitation Project | Project Engineer
Civil Design

Heber Valley Special Service District, Reclaim Pump Station | Project Engineer
Civil, Structural, Mechanical Design & Construction Management, project management, conducting construction meetings, and coordinating with all associated parties

Colorado Town of Bennett, Sewer Alignment Study | Project Engineer
Civil Design, Engineering Report

Wasatch Peaks Ranch Utility District | Project Engineer
Civil, Mechanical Design

Hyrum City, Hammer Road Project | Project Engineer
Civil Design

Durfee Street Sidewalk TAP 2018 Project | Project Engineer
Civil Design & Construction Management

Snowbasin Resort, Lagoon Expansion | Project Engineer
Civil, Mechanical Design

Education

BS Civil Engineering,
Utah State University, 2018

Work Experience

5 Years

Affiliations

ASCE

Expertise

- Pumping System Design
- Utility Layout Design
- Specification Review
- Document Management
- Water Resources Treatment
- Cost Estimate Projection



Andrew Flynn, E.I.T. | Project Engineer

Phone: 801.683.3757 | **Email:** andrew.flynn@aquaeng.com

Andrew has worked for multiple different engineering consultants on a variety of different civil, geotechnical, and environmental engineering projects. He has worked for variety of firms including Wood PLC, WSP USA, and Aqua Engineering Inc. Andrew has developed many important engineering skills including Civil 3D design, stormwater modeling, geotechnical subsurface investigation, and construction oversight.

Project Experience

Mayflower Snowmaking Pump Station Design | Project Engineer

Andrew has completed various engineering and drafting aspects for this project. He has completed a site plan using an existing CAD file from a partner consulting firm. He has also created a water model for the project and has run a surge analysis to determine areas of concern for water hammer.

Port of Morrow Farms 3-4 Winter Storage Lagoons | Project Engineer

Andrew has completed various engineering and drafting aspects for this project. He has gone through various grading exercises for both lagoons 3 and 4 to determine the most balanced earthwork scenario to achieve a total storage of 1.5 billion gallons. He also has drafted profiles and sections to determine embankment heights and visualize earthwork requirements. In addition he has completed calculations to determine freeboard height for the lagoons and constructed a runoff model to determine the required capacity for a culvert road crossing.

Snowbird Snowcat Fueling Improvements | Project Engineer

Andrew has done various drafting and engineering design aspects of the project. He has drafted an alignment corridor for the new dual containment diesel pipeline to take diesel fuel to the new snowcat fueling pad. He has also done grading around the little cottonwood creek crossing and the new snowcat fueling pad. Andrew has also drafted sheets to be included in the construction documents. He also has reached out to vendors to find information on piping materials and leak detection systems.

MRWSSD Summit Park Tank #1 | Project Engineer

Andrew reviews submittals from the contractor and provides comments and revision notices if necessary. He also has completed a stormwater analysis of the site to determine storage volume requirements. He has also conducted site visits to check on construction progress and inspect rebar and concrete placements.

WEBB - JCSD Plan Check | Project Engineer

Andrew reviews drawing packages and provides comments based on a checklist obtained from the Jurupa Valley Sewer District as a guide.

Telluride 2022 Mill Creek WTP Upgrades | Project Engineer

Andrew has completed various structural design aspects for the construction of the new WTP. These are structural design of I-Beams and grating that supports various chemical storage tanks, and structural design of anchor bolts for air tanks.

SDSD North Plant Upgrade | Project Engineer

Andrew has completed various structural design aspects for the upgrade of the South Davis North Plant. He has designed walls, footings, and foundations for the MBBR. He has designed walls and footings for the primary clarifier. In addition, he has conducted a seismic analysis on the MBBR components.

Grantsville City Corp Plan Review - Planning | Project Engineer

Andrew has revised the water model for the city of Grantsville by adding various proposed developments to the model to check fire flow requirements.

Elko 5th Street Tank and Pump Station | Project Engineer

Andrew has brainstormed a concept design for the proposed pump station and completed a water model to check the proposed tank, pump station, and water main for fire flow requirements.

Education

B.S. Civil Engineering,
University of Maine, 2019

Registration

Professional Engineer:
E.I.T. Maine

Work Experience

4 Years

Certifications

ACI Concrete Field Testing Technician,
State of Utah Certified Groundwater
Sampler, State of Utah Certified
Asbestos Building Inspector

Expertise

- Civil 3D (grading, cut and fill, profile and section cuts, road corridors, etc.)
- Geotechnical Investigations
- Water Modeling
- Storm Water Modeling
- Structural Design (beams, footings, foundations, etc)
- Construction Oversight



Susan C. Becker, AICP

Vice President

Zions Public Finance, Inc. | Municipal Consulting Group

For the past 29 years, Susie has specialized in fee studies and economic consulting and planning and has been the lead consultant on some of the largest and most challenging projects in the intermountain region, including funding mechanisms for the large Point of the Mountain project that spans Salt Lake and Utah counties, has testified before the Governor's Legislative Task Forces on economic policies and procedures in Utah and in impact fees, has been involved with numerous fee studies, as well as the creation of a multitude of community reinvestment areas. Her experience stretches from issues such as affordable housing concerns in resort communities like McCall, ID, to redevelopment of a large deteriorating commercial center in Mesa, AZ – the Fiesta District to utility rates for a newly-incorporated entity. She has a MBA degree, AICP and a securities license (Series 50 and 52).

Education

Master of Business Administration,
University of Utah
MBA Ace and Dean's Scholar
Bachelor of Arts, Humanities,
Brigham Young University

Public Service and Affiliations

Municipal Securities Registered
Representative
American Institute of Certified
Planners (AICP)
University of Utah Business School
Alumni Association Board of
Directors
Urban Land Institute, Mentor
Utah Redevelopment Association
Utah Economic Alliance
Utah League of Cities and Towns,
Land Use Task Force
WFRC Economic Development

Selected Presentations

"Downtown Revitalization," Utah
League of Cities and Towns
"Basics of Market Analysis," Main
Street Annual Conferences
"Weathering the Economic Storm,"
Utah League of Cities and Towns
"Redevelopment in Utah," Utah
County and Davis County Economic
Alliance
"The Marriage of CDAs and SAA's,"
Utah League of Cities and towns
"Downtown Revitalization and
Economic Development,"
University of Utah School of
Architecture
"Economics and Planning," Utah
League of Cities and Towns
"Economic Development Policies and
Practices," Governor's Economic
Task Force and Utah Economic
Alliance
"Rate Sustainability Amid COVID-19,"
AWWA

- Timpanogos Special Service District (TSSD) Impact Fees and Rates
- Saratoga Springs Planning & Development Fees
- Grantsville Planning & Development Fees
- South Salt Lake City Planning & Development Fees; Business License Fees
- Highland City Cemetery Fees
- Summit County Planning & Engineering Fees; Landfill Fees
- Mountain Regional Water Rates and Impact Fees
- Lehi Culinary Water and PI Rates
- Mt. Olympus Improvement Dist. IFA and Rates (ongoing)
- Granger-Hunter Improvement Dist. IFA and Rates (ongoing)
- Farmington Impact Fees – Water, Storm and Roads
- Clearfield City Culinary Water, Sewer and Storm Rate Impact Fees and User Rates
- Herriman Water Rates
- Saratoga Springs Storm and Sewer User Rates
- Saratoga Springs Parks and Recreation, Public Safety, Storm Water and Transportation Impact Fees
- Moab Water and Sewer Rates and Impact Fees
- Syracuse Impact Fees
- Herriman Impact Fees
- Layton Park and Transportation Impact Fees
- Marriott-Slaterville Secondary Water Fees
- Orem City Impact Fees
- Provo City Impact Fees
- Plain City Impact Fees
- Pleasant View Culinary Water & Storm Water IFAs and Rates
- South Weber Culinary Water and Sewer IFAs and User Rates
- North Salt Lake Culinary Water and PI User Rates
- Salem City Water and PI Rates
- Park City Impact Fees
- North Fork SSD Rates
- Heber City Utility Rates
- Riverton Fire Impact Fees
- Unified Fire Service Area Impact Fee



Aaron C. Sanborn

Vice President

Zions Public Finance, Inc. | Municipal Consulting Group

Although new to ZPFI, Aaron has nearly a decade of experience with local government and municipal research. Prior to joining ZPFI, Aaron worked for Eagle Mountain City as a management intern, Financial & Management Analyst, and as Economic Development Director. He was also heavily involved in local government while still in his MPA program, working on several consulting projects with Utah cities.

As economic development director, Aaron has been heavily involved in the commercial boom Eagle Mountain is currently experiencing. From providing analytical support, coordinating marketing, or directing business development, his efforts have resulted in over \$2.225 billion in direct investment in Eagle Mountain City. This includes the large investments by Meta (2018), Tyson Fresh Meats (2019), and Google (2021).

Education

Master of Public Administration, Brigham Young University

Bachelor of Arts, History, Brigham Young University

Public Service and Affiliations

Utah Alliance for Economic Development

International Economic Development Council

International City/County Management Association

ICMA BYU Student Chapter President

Eagle Mountain Chamber of Commerce Board of Directors

Aaron's experience includes:

- Municipal Fleet Analysis for multiple cities in Utah
- Clearfield City Performance Measurements
- Utah Office of Tourism "Welcome Center" Software Analysis
- Lehi City Annual Citizen Satisfaction Survey Statistical Analysis
- American Fork Streetlight Purchase Cost & Benefit Analysis
- BYU MPA Program Analysis
- Eagle Mountain Gas & Electric Utility Sale
- Eagle Mountain Utility Rate Analysis
- Eagle Mountain Police Service Delivery Analysis
- Eagle Mountain Information Technology Service Delivery Analysis
- Creation of Eagle Mountain Chamber of Commerce
- Creation of Eagle Mountain Neighborhood Match Grant Program
- Creation of Eagle Mountain City Annual Budget Document
- Creation of Eagle Mountain City Annual Comprehensive Financial Report
- Creation of Eagle Mountain City Popular Annual Financial Report
- CRA Creation for Meta, Tyson, and Google projects
- Eagle Mountain Economic Development Master Plan
- Bountiful General Plan
- Salt Lake County Leverage Ratio Analysis
- Twin Falls Bridge Alternatives Economic Analysis
- Point of the Mountain Transit Alternatives Analysis
- Point of the Mountain Funding Analysis
- Payson Station Area Plan
- Vineyard Station Area Plan
- Clearfield Station Area Plan
- South Salt Lake City Area Plan
- Salem Transportation Impact Fees
- Centerfield Impact Fees – Culinary Water, Secondary Water, Wastewater
- Saratoga Springs Downtown Plan



INNOVATIVE ENGINEERING SOLUTIONS

AQUA Engineering UT
533 W 2600 S, Suite 275
Bountiful, UT 84010
801.299.1327

AQUA Engineering CO
7935 E Prentice Avenue, Suite 100
Greenwood Village, CO 80111
720.667.1250

AQUA Engineering OR
4145 SW Watson Avenue, Suite 350 - #347
Beaverton, OR 97005
801.683.3733

SKM Engineering
533 W 2600 S, Suite 25
Bountiful, UT 84010
801.677.0011

Aqua Environmental Services, Inc.
533 W 2600 S, Suite 175
Bountiful, UT 84010
801.209.6382



Hyrum City: Water Master Plan Project

February 28, 2024

TASKS AND SUBTASKS		LEVEL OF EFFORT (hours)												Total AQUA Hours	Total AQUA Labor \$	Direct Expenses	Total AQUA Fee
		AQUA								Zion's Financial		Scale Consultants					
		PIC, QA/QC	Project Manager	Principal Engineer	Proj Eng III	Proj Eng II	Proj Eng I	Designer III	CAD Designer II	Financial Analyst	QA/QC-Technical Assistance	Surveyor	GIS Specialist				
		Darin Hawkes	Dan Woodbury	Nick Graue	Michael Maughan	Hayden Karren	Andrew Flynn	Derik Hyde	Ven Eddards	Susan Becker	Aaron Sanborn	Greg Wilson	Alex Reyes				
		\$175/hr	\$165/hr	\$165/hr	\$150/hr	\$130/hr	\$130/hr	\$150/hr	\$125/hr	\$175/hr	\$175/hr	\$100/hr	\$100/hr				
1	Task 1: Project Management	36	68	10	12									126	\$20,970	\$8,000	\$28,970
		\$6,300	\$11,220	\$1,650	\$1,800												
1.1	Work Plan; organization; schedule; budget; Staff plan; QA/QC plan	8	8											16	\$2,720		\$2,720
1.2	Regular (periodic) meetings w/ City & project staff; mtg narrative	8	24	2	8									42	\$6,890		\$6,890
1.3	Meeting decisions & actions; assign to team members; follow-ups; & mtg w/ City to discuss annexation/expansion requirements	8	16		4									28	\$4,640		\$4,640
1.4	Monitor project progress; budget & work, schedule; costs; mgmt.	4	8											12	\$2,020		\$2,020
1.5	Potential changes; pro-active; modify as appropriate budget, schedule, etc.	4	8											12	\$2,020		\$2,020
1.6	Manage QC review of work activities & project deliverables	4	4	8										16	\$2,680	\$8,000	\$10,680
2	Task 2: Resource Documents and Data Review	4	8	2	12		4	8	4					42	\$6,370		\$6,370
		\$700	\$1,320	\$330	\$1,800		\$520	\$1,200	\$500								
2.1	Review all existing resource documents: GIS & mapping, water supply, modeling, distribution system. Interview City staff & field work	4	4	2	8			4						22	\$3,490		\$3,490
2.2	Cache County GIS data & mapping; City's pump stations, reservoirs, wells, tanks, PRVs, transmission lines, distribution sys., SCADA, treatment, etc.		4		4		4	4	4					20	\$2,880		\$2,880
3	Task 3: Review Water Demand Estimates & Forecast	4	8	4	8	2	2							28	\$4,400		\$4,400
		\$700	\$1,320	\$660	\$1,200	\$260	\$260										
3.1	Review historic & current water demands & use: trending projections for future - incremental for next 20 years.	4	8	4	8	2	2							28	\$4,400		\$4,400
4	Task 4: Update System Hydraulic Model & GIS Mapping	10	22	10	44	52	32	40	32			320	60	622	\$72,550	\$8,880	\$81,430
		\$1,750	\$3,630	\$1,650	\$6,600	\$6,760	\$4,160	\$6,000	\$4,000			\$32,000	\$6,000				
4.1	Update current service area and boundary	2	2	2	8	8								22	\$3,250		\$3,250
4.2	Add future (planned developments & annexations) service areas	2	4	2	8	8		8	8					40	\$5,780		\$5,780
4.3	Develop/verify existing & future water pressure zones & boundaries	2	4	2	4	4								16	\$2,460		\$2,460
4.4	Catalog the facilities	2	4	2	8	16	16	16	8					72	\$10,100		\$10,100
4.5	Review & update GIS database (& as-built dwgs for existing facilities)	2	8	2	16	16	16	16	16			320	60	472	\$50,960	\$8,880	\$59,840
5	Task 5: Calibrate Water System Hydraulic Models	4	12	12	32	20	8							88	\$13,100		\$13,100
		\$700	\$1,980	\$1,980	\$4,800	\$2,600	\$1,040										
5.1	Identify hydraulic constants & predict pipe flows, fire flow, system pressures, storage water levels, pumping requirements & sys capacities.	2	4	4	8	8								26	\$3,910		\$3,910
5.2	Perform for both summer & winter scenarios.		4	4	16	8	8							40	\$5,800		\$5,800
5.3	Perform in accordance with AWWA M32 Manual & collected field data	2	4	4	8	4								22	\$3,390		\$3,390
6	Task 6: Water Distribution System Analysis	6	12	12	28	20	8	8	4					98	\$14,550		\$14,550
		\$1,050	\$1,980	\$1,980	\$4,200	\$2,600	\$1,040	\$1,200	\$500								
6.1	Develop series of system performance criteria	2	4	4	4	4								18	\$2,790		\$2,790
6.2	Evaluate system under existing and future conditions	2	4	4	8	8		4	4					34	\$5,010		\$5,010
6.3	Assume 8 modeling scenarios. Analysis to include: distribution system, pressure zones, water age/quality analysis, seasonal demand & source fluctuations, storage, pump stations, interconnections, etc.	2	4	4	16	8	8	4						46	\$6,750		\$6,750
7	System Graphics	8	8	4	16			16	8					60	\$9,180		\$9,180
		\$1,400	\$1,320	\$660	\$2,400			\$2,400	\$1,000								
7.1	Develop/produce PDF maps of the existing distribution system, system at build-out, and a pressure zone map. Show annexation/expansion requirements per City meeting/discussions	8	8	4	16			16	8					60	\$9,180		\$9,180
8	System Replacement & Improvement Program	4	16	4	16	8		8	8					64	\$9,640		\$9,640
		\$700	\$2,640	\$660	\$2,400	\$1,040		\$1,200	\$1,000								
8.1	Develop recommended distribution system replacement & improvements programs. Identify system hydraulic deficiencies as a result of the model.	4	16	4	16	8		8	8					64	\$9,640		\$9,640
10	Capital Improvement Programs & System Master Plan	20	40	4	24	8		4		40	40			180	\$30,000		\$30,000
		\$3,500	\$6,600	\$660	\$3,600	\$1,040		\$600		\$7,000	\$7,000						
10.1	Impact Fee analysis	4	4							20	20			48	\$8,360		\$8,360
10.2	Rate Study	4	4							20	20			48	\$8,360		\$8,360
10.3	Prepare recommended Capital Improvement Program	8	16	2	16	8								50	\$7,810		\$7,810
10.4	Prepare/Assemble final Master Plan (based on completed tasks)	4	16	2	8			4						34	\$5,470		\$5,470
Totals:		96	194	62	192	110	54	84	56	40	40	320	60	1308	\$180,760	\$16,880	\$197,640