HYRUM CITY
Established 1860
60 West Main Street
Hyrum, Utah 84319
Ph. (435) 245-6033
www.hyrumcity.gov

City Council Agenda Information

To: Mayor Miller and City Council

From: Angela Pritchett, Water Reclamation Manager

Date: 5/29/2026

Subject: Approve a Proposal for the Water Reclamation Facility Master Plan

Summary:

Time is of the essence in completing the Water Reclamation Facility (WRF) Master Plan. Rapid growth, combined with the recent addition of Millville City, has accelerated wastewater flows and loading beyond previous projections. The Master Plan is critical for establishing a clear roadmap for future capital improvements and for updating the City's impact fees and utility rates to ensure long-term financial sustainability.

As part of this effort, the Division of Water Quality (DWQ) is requiring Hyrum City to update the Engineering Report prepared for the 2021 WRF upgrade. A discrepancy between the 2005 and 2021 design criteria has resulted in a de-rating of the facility's permitted capacity. DWQ has directed the City to resolve this discrepancy and submit an updated Engineering Report no later than the end of July 2026.

To initiate the Master Plan, Hyrum City issued a Request for Proposals (RFP) on May 11, 2026. A site tour of the WRF was conducted for interested firms on May 18, 2026, and proposals were due on May 29, 2026.

Per Part 6. Selection Process of the RFP, a selection committee will evaluate the proposals and provide a recommendation to the City Council for final approval.

Part 6. Selection Process

A selection committee will review proposals in a timely manner based on the following minimum criteria:

1. Firm's experience and project team's past performance on similar projects (20%)
2. Team (10%)
3. References (15%)
4. Project understanding and approach (25%)
5. Proposed Scope of Work and deliverables (10%)
6. Schedule and availability (15%)
7. Fee/Price (5%)

Recommendation:

Approve a proposal for the Master Plan. A recommendation from the selection committee will be presented to the City Council.

City Council Meeting Details:

• Meeting Date: June 4, 2026
• Council Role: Approve a proposal for the Water Reclamation Facility Master Plan

Attachments:

1. Hyrum City Water Reclamation Facility Master Plan Request for Proposals.pdf
2. J-U-B_HyrumWTFMasterPlan_Fee.pdf
3. J-U-B_HyrumWTFMP.pdf
4. Hyrum City Water Reclamation Facility MP Fee Proposal – Sunrise & Hazen.pdf
5. Hyrum City Water Reclamation Facility Master Plan -Sunrise & Hazen.pdf

HYRUM CITY
REQUEST FOR PROPOSALS

Hyrum City Water Reclamation Facility Master Plan

Date of Issuance: May 11, 2026
Response delivered electronically no later than May 29, 2026, to Angela Pritchett, Water Reclamation Manager, angela.pritchett@hyrumcity.gov and Todd Perkins, Financial Administrator todd.perkins@hyrumcity.gov

Part 1. Background
Hyrum City (HC) owns and operates a Water Reclamation Facility (WRF) that treats wastewater from both Hyrum and Millville at an annual average daily flow (AADF) of about 1.5 million gallons per day (MGD).

The WRF was built in the mid 1970's and began operating in 1978. In 2005, Hyrum City replaced the original oxidation ditch with Membrane Bioreactor (MBR) technology to treat wastewater. The WRF 2005 design flow was 1.5 MGD with capacity to expand to 2 MGD. In 2021, the WRF expanded to a design capacity of 2 MGD by replacing all of the membranes and adding an additional membrane basin.

The facility's liquid treatment process consists of a headworks, coarse and fine screening, grit removal, membrane reactors and UV disinfection. Solids are dewatered using a belt press, after which the sludge is composted and the resulting biosolids are land-applied.

The WRF operates under Utah Pollutant Discharge Elimination System (UPDES) permit UT0023205 to discharge to Spring Creek and includes provisions for Type 1 Reuse, Pretreatment and Biosolids.

HC is experiencing rapid growth that exceeds previous projections, in addition to treating Millville's wastewater as November 2025, the WRF is approaching capacity as a result and time is of the essence to complete the WRF MP in a timely manner so it can be utilized to plan responsibly.

The Utah Division of Water Quality (DWQ) is requiring Hyrum City to evaluate the Total Suspended Solid (TSS) and Biochemical Oxygen Demand (BOD) loading capacity of the WRF and prepare an updated Engineering Report (ER). There are discrepancies in the original 2005 design criteria and the 2020 Engineering Report as determined by the DWQ.

Due to this discrepancy, DWQ is requiring Hyrum City to update the Engineering Report to determine the BOD and TSS loading capacity of the existing WRF.

Part 2. Project Understanding/Scope of Work
Hyrum City is seeking professional engineering services to prepare a comprehensive Engineering Report Update and Water Reclamation Facility (WRF) Master Plan.

The Scope of Services below will result in an Engineering Report Update and Master Plan that accomplishes the following objectives:

1. <u>Engineering Report Update:</u>
    a. Determine the amount of TSS and BOD that the WRF can treat. Evaluations should be based on the requirements outlined in UAC R317-3-7.2. The ER must be delivered within **one month** of signing the contract and should update the attached 2020 ER. Deliverable time is **non-negotiable** to meet UDWQ requirements.
2. <u>Master Plan:</u> This Master Plan Must be completed within 7 months of signing the contract
    a. Evaluate the condition and capacity, current and projected, of the existing treatment processes and support systems and determine the remaining treatment capacity within the existing facility footprint and infrastructure. Identify feasible strategies for increasing the capacity and addressing condition issues.
    b. Establish current and projected flows and loads for a 20-year planning period using population estimates and growth rates provided by Hyrum, for both Hyrum and Millville.
    c. Document current permit requirements and identifying potential long-term regulatory issues that may affect future operations. Identify relevant UAC regulatory parameters governing the WRF.

d. Assess the performance and capacity of existing unit processes under current and projected conditions and potential areas of plant optimization.
e. Develop recommended improvements to maintain a proper level of service and ensure compliance with current and anticipated discharge limits. Include cost estimates for the project improvements to address capacity, condition, performance, optimization and regulatory issues.
f. Prepare a 20-Year capital improvement plan (CIP). Include the schedule and costs associated with implementing the improvement projects.
g. Prepare an Impact Fee Facility Plan (IFFP) and provide additional supporting information as needed for an upcoming WRF impact fee and user rate study- Impact Fee analysis that will examine and accommodate growth

3. Project Management Minimum Requirements:
    a. Project Administration- Updated project schedule and memo summarizing project status will be emailed monthly to the WRF Manager
    b. Key Meetings/Workshops-Site Kick Off Meeting, Flows and Loads Workshop, Existing Conditions and Strategies for Increasing Capacity Workshop, Recommendations and CIP Workshop, Review of Final Draft Master Plan Meeting, City Council Presentation (Draft Master Plan Presentation)

Part 3. Schedule

Schedule:

Preproposal meeting and site walk through*	May 18, 2026, at 2 P.M.
Deadline for submittal of questions	May 22, 2026, at 2 P.M.
Deadline for submittal of proposal	May 29, 2026, at 2 P.M.
Selection review process	June 1, 2026
Selection of consultant (approval by City Council)	June 4, 2026
Begin project	One week after City Council Approval
Completion of updated Engineering Report	1 month after signing contract
Completion of project	7 months after signing contract

*Location: Hyrum City Water Reclamation Facility, 1900 West 4400 South, Hyrum UT

Part 4. Proposal Content

The proposal shall not exceed **10** one-sided letter-size pages, excluding the Cover Letter (maximum of two pages) and proposed project team resumes. Proposals must follow the structure below:

1. Firm's Experience and Project Team's Past Performance on Similar Local Projects
    a. Provide a brief history of the firm. Provide a list of similar projects completed within the last ten (10) years specifically by the proposed team members. Indicate the responsibilities of the proposed team members on these similar projects.
2. Proposed Project Team
    a. List proposed team members, their roles, experience, and responsibilities. Include sub-consultants as applicable. Résumés will be included in an appendix and do not count toward the page limit. The Project Manager must remain assigned for the duration of the project unless approved by the CITY.
3. References
    a. Provide three references for similar or related projects. Include contact information and project relevance.
4. Project Understanding and Approach

    a. Provide a narrative describing the Consultant's project understanding and approach.
5. Proposed Scope of Work and Deliverables including Optional Items
    a. Provide a detailed task list for completing the scope of work, including any additional tasks necessary to meet project objectives. Include a project schedule with key milestones and deliverables. These would include but not be limited to work items necessary to achieve the objectives of the project.
6. Schedule and availability
    a. Describe the availability of the proposed project team and demonstrate the firm's ability to meet the project schedule.
    b. Detailed project timeline
    c. Provide a project schedule outlining the deliverables and key milestones required to deliver the project.

Part 5. Fee Proposal (Submitted Separately)
A separate email titled **"Fee for the Preparation for the Hyrum City Water Reclamation Master Plan"** shall include:

1. Fee:
    a. Itemized fee schedule
    b. Not to exceed total cost
    c. Anticipated Work effort by personnel
    d. Sub consultant Fees (if applicable)
    e. Reimbursable Expenses

Part 6. Selection Process
A selection committee will review proposals in a timely manner based on the following minimum criteria:

1. Firm's experience and project team's past performance on similar projects (20%)
2. Team (10%)
3. References (15%)
4. Project understanding and approach (25%)
5. Proposed Scope of Work and deliverables (10%)
6. Schedule and availability (15%)
7. Fee/Price (5%)

The CITY will be the sole judge of proposal quality and compliance. The CITY reserves the right to award the contract in any manner it deems to be in the best interest of CITY and make the selection based on its sole discretion, including negotiating with one or more of the proposers for the same services.

Part 7. Questions
Questions must be received by the deadline identified in the Schedule Section to Angela Pritchett- angela.pritchett@hyrumcity.gov

If you would like to receive the compiled responses to all submitted questions, you must email your contact information to Angela Pritchett- angela.pritchett@hyrumcity.gov no later than the question submittal deadline.

Part 8. Submittal Procedures
Submittals shall comply with all conditions, requirements and specifications contained herein, with any departure constituting sufficient cause for rejection of the proposal at CITY's sole discretion. Any and all

costs incurred in the preparation and presentation of this submittal shall be borne solely by the respondent. All submittals received shall become the property of CITY and will not be returned.

Proposals must be submitted electronically to:
Angela Pritchett at: angela.pritchett@hyrumcity.gov and Todd Perkins at: todd.perkins@hyrumcity.gov

Part 9. Review of Agreement for Professional Services
The CITY Agreement for Professional Services is attached for review and comments. Please indicate if the proposed agreement is acceptable to your firm and, if not, what specifically is not acceptable with your firm's proposed changes.

Part 10. General Administrative Information

1. Each respondent understands and agrees that the CITY, its departments, their officers, employees or agents shall not be liable for:
    a. Any costs incurred by a respondent in the preparation, delivery or presentation of a proposal.
    b. Any costs incurred by a respondent in meeting the criteria as a result of making or submitting a proposal or subsequently in entering into a formal agreement with CITY; and
    c. Any errors, inaccuracies or misstatements related to the information or data supplied to any consultant by CITY. The use of such information or data provided by CITY, its officers, employees or agents is intended to be used at the sole discretion and risk of the firm in the preparation of a proposal pursuant to this RFP only.
2. The selected firm shall comply with any and all applicable Federal and State laws pertaining to employment.
3. CITY reserves the right to accept, reject, modify or cancel in whole or in part, this RFP.
4. CITY reserves the right to accept or reject any or all proposals, negotiate modifications to proposals that it deems acceptable, to request and consider additional information from any proposer, and to waive minor irregularities and technical defects in this proposal process. CITY reserves the right to seek new proposals when it determines that it is in the best interest to do so.

Part 11. Authority to Withdraw
CITY reserves the right to withdraw this RFP without prior notice. CITY makes no representation that any agreement will be awarded to any firm as a result of having responded to this request. CITY expressly reserves the right to reject any and all proposals in response to this RFP without indicating a reason for such rejection. All costs incurred in the preparation of the proposal, submission of information and/or selection of a proposal prior to the award and/or execution of a signed contract shall be borne by respondent. All proposals submitted to CITY in response to this RFP shall become the property of CITY, shall be considered public information, and will not be returned.

Part 12, Award of Contract
The CITY intends to award a single contract based on negotiated rates of compensation

ATTACHMENTS:

1. Hyrum City Contract for Engineering Services February 2024
2. 2020 Engineering Report WRF MBR Upgrade

Attachment 1 - Hyrum City Contract for Engineering Services February 2024

CONTRACT

for

ENGINEERING SERVICES

BETWEEN

HYRUM CITY

AND

CONSULTANT

TABLE OF CONTENTS

MASTER CONTRACT
FOR
ENGINEERING AND TECHNICAL SERVICES

This contract dated the ____ day of _____ 20___, is entered into by and between **Hyrum City** ("Owner") and **Consultant** ("Engineer").

RECITAL

A. Owner and Engineer desire to identify certain services to be performed by Engineer pursuant to the terms of this Contract and to reach certain understandings with respect to such services.

ARTICLES

It is therefore agreed as follows:

ARTICLE 1. DESCRIPTION OF WORK

Engineer agrees to perform needs assessments, feasibility studies, design services, construction management, technical studies, engineering services, and other services as may be mutually agreed to from time to time by Owner and Engineer and as more specifically described in Scope of Work and Compensation Document (the "Work"). Engineer agrees to, except as provided otherwise in this contract, furnish supervision, labor and materials, and obtain licenses and permits required for performance of the Work.

ARTICLE 2. TERM OF CONTRACT AND SCHEDULE

The term of this contract shall be from the effective date of the contract through Completion Date. Term of work and schedule of work shall be stipulated in each Scope of Work and Compensation Document

ARTICLE 3. CONSIDERATION AND PAYMENT

3.1 For satisfactory performance of the Work, Owner will pay Engineer consideration determined in accordance with Scope of Work and Compensation Document executed by the Owner and the Engineer.

3.2 Compensation for engineering services shall be made in accordance with one of the following methods: Compensation will be either 1) a negotiated lump sum, or 2) a cost reimbursement basis from actual time and expenses charged at the hourly rates indicated in the Scope of Work and Compensation Document.

The specific method for compensation and associated engineering services to be rendered for such compensation shall be as outlined in each Scope of Work and Compensation Document .

3.3 All invoices submitted to Owner for work performed shall contain references to the Contract issued for said work. Engineer will retain receipts for reimbursable expenses in general accordance with Internal Revenue Service rules pertaining to the support of expenditures for income tax purposes. Receipts will be available for inspection by Owner's auditors upon request. Payment shall be made as outlined in each Work Release to this contract. Invoices shall include services and tasks performed for the invoicing period. Time and expense invoices shall include the reimbursable out-of-pocket expenses incurred and the shall indicate the number of hours worked, the persons responsible for performing the Work, the rate of compensation at which such services and tasks were performed, the subtotal for each task and service performed and a grand total for all services performed.

4. Engineer will submit monthly invoices for services rendered and Owner will make prompt payments in response to Engineer's invoices. Owner recognizes that late payment of invoices results in extra expenses for Engineer. Engineer retains the right to assess Owner interest at the rate one and five-tenths percent (1.5%) per month, but not to exceed the maximum rate allowed by law, on invoices which are not paid within forty-five (45) days from the date of the invoice. In the event undisputed portions of Engineer's invoices are not paid when due, Engineer also reserves the right, after seven (7) days prior written notice, to suspend the performance of its services under this Agreement until all past due amounts have been paid in full.

5. If Owner disputes any items in Engineer's invoice for any reason, including the lack of supporting documentation, Owner may temporarily delete the disputed item and pay the remaining amount of the invoice. Owner will promptly notify Engineer of the dispute and request clarification and/or correction. After any dispute has been settled, Engineer will include the disputed item on a subsequent, regularly scheduled invoice, or on a special invoice for the disputed item only.

ARTICLE 4. SERVICES AND INFORMATION

Owner will provide all criteria and information pertaining to Owner's requirements for the project, including design objectives and constraints, space, capacity and performance requirements, flexibility and expandability, and any budgetary limitations. Owner will also provide copies of any Owner-furnished Standard Details, Standard Specifications, or Standard Bidding Documents which are to be incorporated into the project. Owner will furnish the services of soils/geotechnical engineers or other consultants that include reports and appropriate professional recommendations when such services are deemed necessary by Engineer. The Owner agrees to bear full responsibility for the technical accuracy and content of Owner-furnished documents and services.

In performing professional engineering and related services hereunder, it is understood by Owner that Engineer is not engaged in rendering any type of legal, insurance or accounting services, opinions or advice. Further, it is the Owner’s sole responsibility to obtain the advice of an attorney, insurance counselor or accountant to protect the Owner’s legal and financial interests. To that end, the Owner agrees that Owner or the Owner’s representative will examine all studies, reports, sketches, drawings, specifications, proposals and other documents, opinions or advice prepared or provided by Engineer, and will obtain the advice of an attorney, insurance counselor or other

consultant as the Owner deems necessary to protect the Owner's interests before Owner takes action or forebears to take action based upon or relying upon the services provided by Engineer.

ARTICLE 5. NON-EXCLUSIVE RIGHTS
Nothing in the contract is to be construed as granting to Engineer exclusive rights to perform any or all of Owner's requirements of the type contemplated hereunder.

ARTICLE 6. CHANGES
The parties agree that no change or modification to this Agreement, or any attachments hereto, shall have any force or effect unless the change is reduced to writing, dated, and made part of this Agreement. The execution of the change shall be authorized and signed in the same manner as this Agreement. Adjustments in the period of services and in compensation shall be in accordance with applicable paragraphs and sections of this Agreement. For those projects involving conceptual or process development services, activities often are not fully definable in the initial planning as outlined in the Scope of Work and Compensation Document. In any event, as the project progresses, the facts developed may dictate a change in the services to be performed, which may alter the scope. Engineer will inform Owner of such situations so that changes in scope and adjustments to the time of performance and compensation can be made as required. If such change, additional services, or suspension of services results in an increase or decrease in the cost of or time required for performance of the services, an equitable adjustment shall be made, and the Agreement modified accordingly.

ARTICLE 7. INDEMNIFICATION
The Engineer agrees, to the fullest extent permitted by law, to indemnify and hold harmless the Owner, its officers, and employees (collectively, Owner) against all damages, liabilities or costs, including reasonable attorneys' fees and defense costs, to the extent caused by the Engineer's negligent performance of professional services under this Agreement and that of its subconsultants or anyone for whom the Engineer is legally liable. The Owner agrees, to the fullest extent permitted by law, to indemnify and hold harmless the Engineer, its officers, directors, employees and subconsultants (collectively, Engineer) against all damages, liabilities or costs including reasonable attorneys' fees and defense costs, to the extent caused by the Owner's negligent acts in connection with the Project and the acts of its contractors, subcontractors or consultants or anyone for whom the Owner is legally liable.

Neither the Owner nor the Engineer shall be obligated to indemnify the other party in any manner whatsoever for the other party's own negligence.

ARTICLE 8. EQUAL EMPLOYMENT AND NONDISCRIMINATION
In connection with the services under this Agreement, Engineer agrees to comply with the applicable provisions of federal and state Equal Employment Opportunity, and other employment, statutes and regulations.

ARTICLE 9. INSURANCE
Engineer agrees to procure and maintain, at its expense, Workers' Compensation insurance as required by statute; Automobile Liability insurance of $1,000,000 combined single limit for bodily injury and property damage covering all vehicles, including hired vehicles, owned and non-owned

vehicles; Commercial General Liability insurance of $1,000,000 combined single limit for personal injury and property damage; and Professional Liability insurance of $1,000,000 per claim for protection against claims arising out of the performance of services under this Agreement caused by negligent acts, errors, or omissions for which Engineer is legally liable. Upon request, Owner shall be made an additional insured on Commercial General and Automobile Liability insurance policies and certificates of insurance will be furnished to the Owner. Engineer agrees to indemnify Owner for the claims covered by Engineer's insurance.

ARTICLE 10. STANDARD OF PERFORMANCE

The standard of care for all professional engineering, consulting and related services performed or furnished by Engineer and its employees under this Agreement will be the care and skill ordinarily used by members of Engineer's profession.

ARTICLE 11. SUSPENSION OF WORK

Owner may, by written notice, direct Engineer to suspend performance of any or all of the Work for a specified period of time. If such suspension is not occasioned by the fault or negligence of Engineer, the notice may be modified to compensate Engineer for extra costs incurred due to said suspension, provided that any claim for adjustment is supported by appropriate cost documentation and asserted within twenty (20) calendar days after the date Owner issues an order for resumption of the Work. Upon receipt of such notice, Engineer shall a) discontinue Work, b) place no further orders or subcontracts, c) suspend all orders and subcontracts, d) protect and maintain the Work, and e) otherwise mitigate Owner's costs and liabilities for those areas of work suspended.

ARTICLE 12. TERMINATION OF AGREEMENT

Owner or Engineer may terminate the Agreement, in whole or in part, by giving seven (7) days written notice, if the other party substantially fails to fulfill its obligations under the Agreement through no fault of the terminating party. Where the method of payment is "lump sum," or cost reimbursement, the final invoice will include all services and expenses associated with the project up to the effective date of termination.

ARTICLE 13. OWNERSHIP AND REUSE OF DESIGNS AND DRAWINGS

All documents, including all reports, drawings, specifications, computer software or other items prepared or furnished by Engineer pursuant to this Agreement, are instruments of service with respect to the project. Engineer retains ownership of all such documents. Owner may retain copies and digital CAD files of the documents for its information and reference in connection with the project; however, none of the documents are intended or represented to be suitable for reuse by Owner or others on extensions of the project or on any other project. Any reuse without written verification or adaptation by Engineer for the specific purpose intended will be at Owner's sole risk and without liability or legal exposure to Engineer, and Owner will defend, indemnify and hold harmless Engineer from all claims, damages, losses and expenses, including attorney's fees, arising or resulting therefrom. Any such verification or adaptation will entitle Engineer to further compensation at rates to be agreed upon by Owner and Engineer.

ARTICLE 14. NONDISCLOSURE

Engineer will not divulge to third parties without the prior consent of Owner any information obtained from or through Owner in connection with the performance of this contract. Unless

waived by Owner, Engineer shall require its employees and subcontractors of any tier to adhere to these nondisclosure terms.

ARTICLE 15. LAWS AND REGULATIONS

Engineer shall at all times comply with applicable laws, statutes, rules, regulations, and ordinances, including those governing wages, hours, desegregation, employment discrimination, and safety. In connection with the services under this Agreement, Engineer agrees to comply with the applicable provisions of federal and state Equal Employment Opportunity, and other employment, statutes and regulations.

ARTICLE 16. PATENT AND COPYRIGHT

16.1 Indemnity. Engineer shall indemnify, defend, and hold harmless the Owner against and from all claims, losses, costs, suits, judgments, damages, and expenses, including attorneys' fees, of any kind of nature whatsoever on account of infringement of any patent, copyrighted work, secret process, trade secret, unpatented invention, section, or otherwise, including claims thereof pertaining to, or arising from Engineer's performance under this contract.

16.2 Should Engineer's employees, officers, agents, subcontractors of any tier, or anyone of a like nature in the performance of the Work or as a result of performing the Work, develop any trade secret, prepare any copyrighted material, make any improvement, originate any invention, develop any process or otherwise, such trade secret, copyright, improvement, invention, or process shall be the property of Engineer, but Engineer shall grant or cause to be granted to Owner the right and/or license to permanently use, or cause to be used for the benefit of Owner any such trade secret, copyright, improvement, design, invention, or process in any manner for so long as Owner desires to use same for Owner's own internal use.

ARTICLE 17. NOT USED

ARTICLE 18. OPINIONS OF PROBABLE COST

Any opinions of probable project cost or probable construction cost provided by Engineer are made on the basis of information available to Engineer and on the basis of Engineer's experience and qualifications and represents its judgment as an experienced and qualified professional engineer. However, since Engineer has no control over the cost of labor, materials, equipment or services furnished by others, or over the contractor(s') methods of determining prices, or over competitive bidding or market conditions, Engineer does not guarantee that proposals, bids or actual project or construction cost will not vary from opinions of probable cost Engineer prepares.

ARTICLE 19. INDEPENDENT CONTRACTOR

Engineer shall perform the Work as an independent contractor, and all persons employed by Engineer in connection herewith shall be employees of Engineer, and not employees of Owner in any respect.

ARTICLE 20. SUCCESSORS AND ASSIGNMENT

Owner and Engineer, respectively, bind themselves, their partners, successors, assigns, and legal representatives to the covenants of this Agreement. Neither Owner nor Engineer will assign, sublet, or transfer any interest in this Agreement or claims arising therefrom without the written consent of the other.

ARTICLE 21. RIGHT TO RETAIN SUBCONSULTANTS

The Engineer may use the services of subconsultants when, in the Engineer's sole opinion, it is appropriate and customary to do so. Such persons and entities include but are not limited to, surveyors, specialized consultants and testing laboratories. The Engineer's use of other consultants for additional services shall not be unreasonably restricted by the Owner provided the Engineer notifies the Owner in advance.

ARTICLE 22. NOTICES

Any notice by either party to the other hereunder shall be served if delivered in person, to the office of the representative authorized and designated in writing to act for the respective party, or; if deposited in the mail, properly stamped with the required postage and addressed to the office of such representative. Either party may change its representative or address by giving the other party written notice of such change. Unless otherwise notified, notices shall be given as follows:

Owner	Engineer
Hyrum City	_____
60 West Main	_____
Hyrum, Utah 84319	_____

ARTICLE 23. DISPUTES

Unless otherwise provided in this Contract, all claims, counter-claims, disputes, and other matters in question between Owner and Engineer arising out of or relating to this Contract or the breach of it will be decided by arbitration if the parties mutually agree, or in the First Judicial District Court in and for Cache Count, State of Utah.. The prevailing party in any dispute relating to the Agreement shall be awarded its attorneys' fees, costs, and other litigation fees incurred to the fullest extent allowed by applicable law.

ARTICLE 24. ACCOUNTING AND AUDITING

Engineer shall keep accurate and complete records in support of all remuneration paid hereunder in accordance with generally recognized accounting principles and practices. Owner, or its audit representative, shall have the right at any reasonable time to examine, audit, and reproduce all records pertaining to costs, including but not limited to payrolls, employees' time sheets, invoices, and all other evidence of expenditures for the Work. Such records shall be available for one (1) year after completion of the Work or as otherwise required by law.

ARTICLE 25. NONWAIVER

The failure of Owner to insist upon or enforce strict performance by Engineer of any of the terms of this contract or to exercise any rights herein shall not be construed as a waiver or relinquishment to any extent of its right to assert or rely upon such terms or rights on any future occasion.

ARTICLE 26. SEVERABILITY
If any provision of this agreement is held invalid or unenforceable, the remaining provisions shall be valid and binding upon the Terms & Conditions for Professional Services. One or more waivers by either party of any provision, term or condition shall not be construed by the other party as a waiver of any subsequent breach of the same provision, term or condition.

ARTICLE 27. CONSTRUCTION PROCEDURES
Engineer's observation or monitoring portions of the Work performed under construction contracts shall not relieve the contractor from its responsibility for performing work in accordance with applicable contract documents. Engineer shall not control or have charge of, and shall not be responsible for, construction means, methods, techniques, sequences, procedures of construction, health or safety programs or precautions connected with the Work and shall not manage, supervise, control or have charge of construction. Engineer shall not be responsible for the acts or omissions of the contractor or other parties on the project. Engineer shall be entitled to review all construction contract documents and to require that no provisions extend the duties or liabilities of Engineer beyond those set forth in this Agreement.

ARTICLE 28. HAZARDOUS MATERIALS
Owner shall provide notice to Engineer, to the best of its knowledge, if hazardous materials may be present on any project site.

It is acknowledged by both parties that Engineer's scope of services do not include services related in any way to hazardous materials. In the event Engineer or any other party encounters undisclosed hazardous materials, Engineer shall have the obligation to notify Owner and, to the extent required by law or regulation, the appropriate governmental officials, and Engineer may, at its option and without liability for delay, consequential or any other damages to Owner, suspend performance of services on that portion of the project affected by hazardous materials until Owner: (i) retains appropriate specialist consultant(s) or contractor(s) to identify and, as appropriate, abate, remediate, or remove the hazardous materials; and (ii) that the project site is in full compliance with all applicable laws and regulations according to the consultant(s) or contractor(s) retained by the Owner. Owner acknowledges that Engineer is performing professional services for Owner and that Engineer is not and shall not be required to become an "arranger," "operator," "generator," or "transporter" of hazardous materials, as defined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1990 (CERCLA), which are or may be encountered at or near the project site in connection with Engineer's services under this Agreement.

If Engineer's services hereunder cannot be performed because of the existence of hazardous materials, Engineer shall be entitled to terminate this Agreement for cause on 30 days written notice.

ARTICLE 29. NOT USED

ARTICLE 30. GOVERNING LAW
This contract shall be interpreted in accordance with the substantive and procedural laws of the State of Utah.

ARTICLE 31. ENTIRE AGREEMENT
This contract and any referenced attachment constitute the complete agreement between the parties.

ARTICLE 32. EXECUTION AND EFFECTIVE DATE
This Agreement, including the exhibits and schedules made part hereof, constitute the entire Agreement between Engineer and Owner, supersedes and controls over all prior written or oral understandings. This Agreement may be amended, supplemented or modified only by a written instrument duly executed by the parties.

ARTICLE 33. APPROVALS
IN WITNESS WHEREOF, the parties hereto have executed or caused to be executed by their duly authorized officials, this contract in duplicate on the respective date indicated below:

CONSULTANT
Engineer

By:_____
Name

Title: _____

Date:_____

CITY
Owner

By:_____
Name, Mayor

Date:_____

ATTEST:

By: _____
Name, City Recorder

Attachment 2 – 2020 Engineering Report WRF MBR Upgrade

HYRUM CITY

WATER RECLAMATION FACILITY MBR UPGRADE

MARCH 2020

REGISTERED PROFESSIONAL ENGINEER
No.362058
JUSTIN RAY LOGAN
03/12/2020
STATE OF UTAH

ENGINEERING REPORT

AQUA ENGINEERING
533 W 2600 S Suite 275, Bountiful, UT 84010
Phone: 801.299.1327 | Fax: 801.299.0153

SECTION 1 UPGRADED PROCESS DESIGN INFORMATION

This report details the biological capacity of the proposed upgrades to the existing Hyrum City Water Reclamation Facility (WRF) membrane bio reactor (MBR) upgrade project. It is primarily focused on influent quantity and quality, process air calculations, existing blower performance, and air pipe routing. The report also addresses the facility's surplus capacity and the potential future connection of Milleville City's proposed sewer collection system.

1.1 Existing Facility Influent Data

Influent flow, biological oxygen demand (BOD), and mixed liquor suspended solid (MLSS) data for January 2016 through May 2018 were analyzed to aide in establishing the design capacity and influent flow characteristics for the proposed WRF upgrades. The pertinent conclusions of this analysis are listed below, followed by Figures 1-1 thru 1-3, illustrating the raw data for these characteristics.

Influent Flow Volume

- The 95th Percentile influent volume is 1.00 ±0.02 MGD
- Annual averages for 2016, 2017, and 2018 are 0.90 MGD, 1.14 MGD, and 0.94 MGD, respectively.

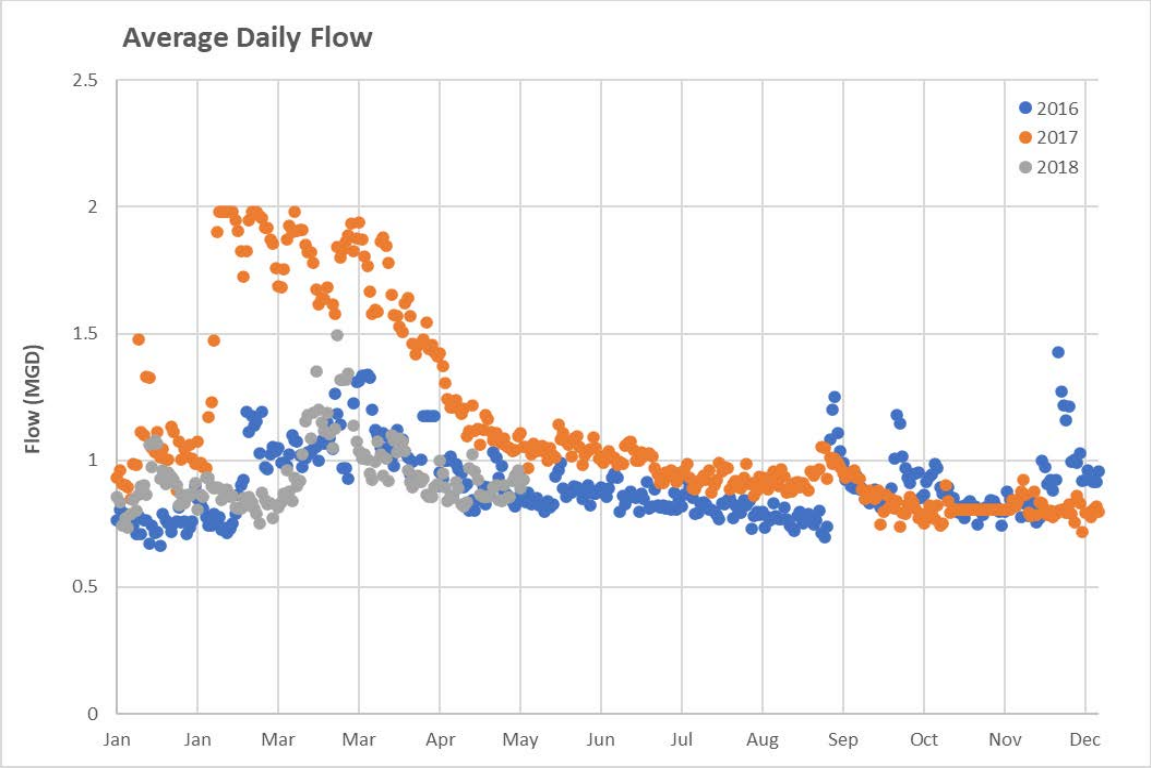


Figure 1-1 Average Daily Flow

- During spring runoff on the year of 2017, the influent measurement was reading over 1.5 MGD for over 71 consecutive days. It was a wet spring and flows were abnormally high, however there is some question regarding the accuracy of this data. Operations was using the existing oxidation ditch to equalize flow during the highest flow periods of the day. This caused higher water surfaces in the junction box below the parshall flume used to measure the influent flow. Thus it is possible that those data points were inaccurate and we suspect the actual annual flows are more typical of what was recorded in 2016 and 2018.
- Average flow per capita is 111 gpd - (1,000,000 gallons per day – 90,000 gallons per day (Westpoint Dairy))/ 8,197 =111 gallons per capita per day
- The original plant design was for 2.0 MGD.
- Projected average daily flow of 1.5 MGD by 2044 with an average annual rate of change of 1.7 %. Thus the existing facility will not reach 75% of the design capacity during the next 20 years, unless growth rates change significantly or other communities connect to the facility.

Influent BOD

- The 95th Percentile BOD concentration is 136 ± 6.7 mg/L with peak concentration of 268 mg/L. This is equivalent to a BOD daily load of 1,134 #BOD/day.

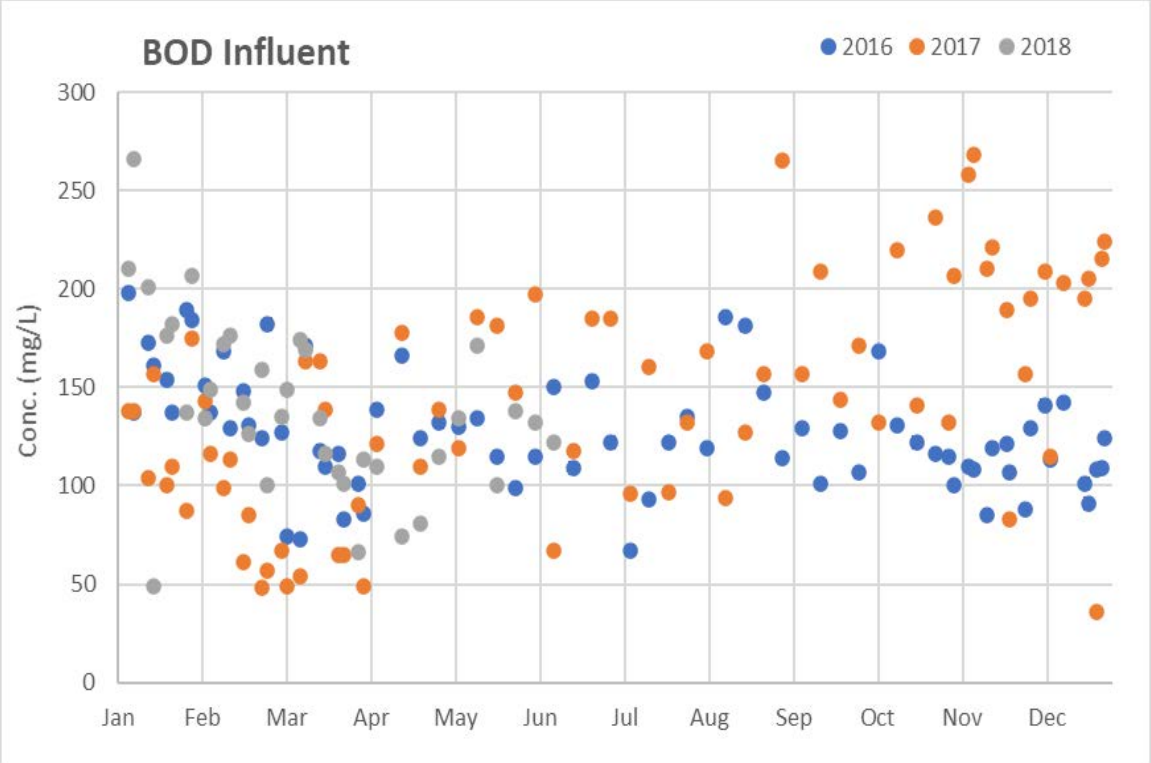


Figure 1-2 Average Daily Flow

- Average BOD per capita is 0.13 lbs/day

  (1,134 lbs/day – 65 lbs/day (Westpoint Dairy))/ 8,197 =0.13 lbs per capita per day

- The original plant design was for 2.0 MGD with a BOD concentration of 220 mg/l, or 3,670 #BOD/day. Based on the current influent BOD concentration, the BOD load at 2.0 MGD will be 2,268 #BOD/day, leaving roughly 1,400 lbs of BOD loading capacity in reserve.

MLSS Concentration

- The 95th Percentile MLSS concentration is 11,000 ±140 mg/L
- Design operating MLSS :10,000 mg/L (same as original plant design)
- The SRT at 10,000 mg/L and 2.0 MGD is approximately 25 days and at 11,000 mg/L it is about 28 days.

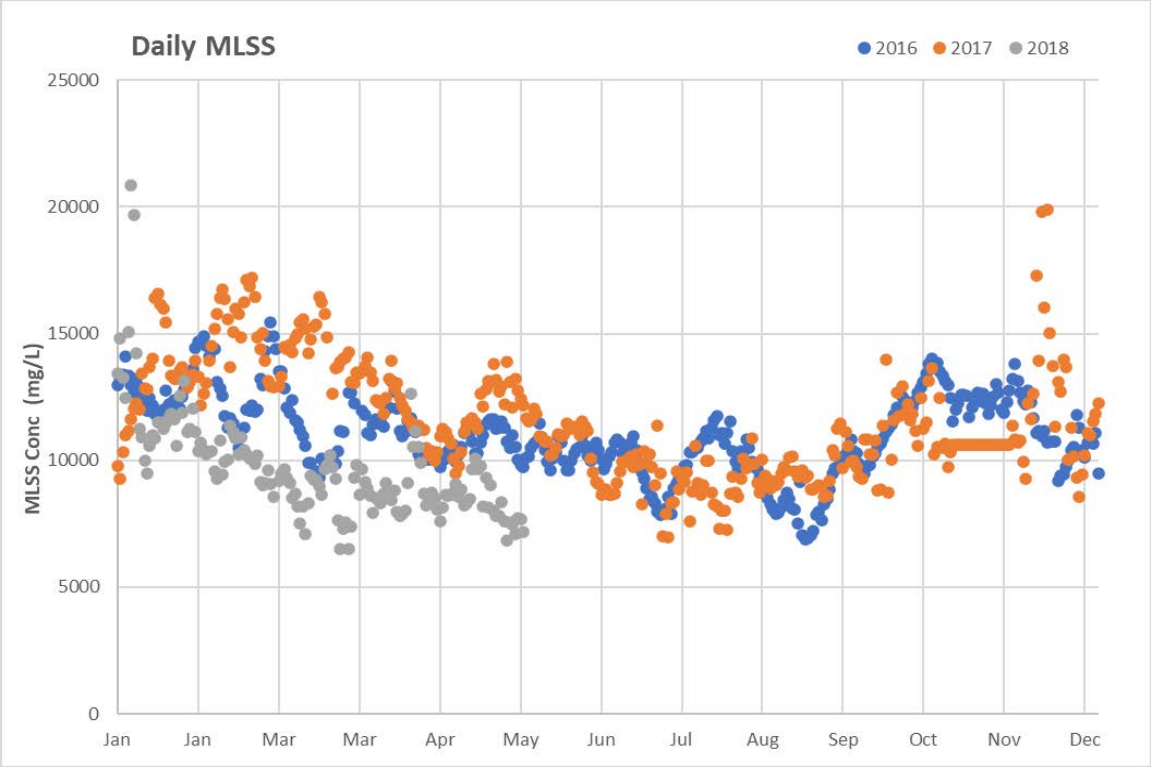


Figure 1-3 MLSS Concentration

1.2 Membrane Bio Reactor

The facility's four existing MBR basins are 17 ft- 6 in. deep from the bottom of basin to the top of grate, with an operating water depth of 15 ft. Three basins are currently equipped with 12 Kubota EK 400 flatsheet panel membrane cassettes. Each cassette provides 3,444 sqft. of membrane surface area for a total membrane surface area of 41,328 sqft. per basin. The combined surface area for the 3 equipped MBR basins is 123,984 sqft. The design average flow rate of the system (3 basin system) is 1.5 MGD when applying the manufacturer's suggested flux rate of 12 gallons per square feet per day (GFD). However, experience with these membranes indicates flux rates vary between 8 and 10 GFD during winter and spring months when influent temperatures approach 7°C to 8°C. These flux rates effectively limit the existing system hydraulic capacity to approximately 1 MGD with an average annualized flux rate of 8 GFD.

Installation of the Kubota SP 600 cassettes in all 4 basins will increase the total membrane surface area to 310,000 sqft., a 150% increase over the current EK 400 system. At a design flow of 2 MGD, operating depth will be 15 ft- 8 in and the flux rate is a manageable and conservative 6.45 GFD. Taking a basin offline for maintenance still allows for a flux rate of 8.60 GFD.

1.3 Mass Balance Calculation

Table1-1 summarizes influent and effluent design criteria for the facility. Conservative assumptions of 0 mg/L for BOD and TSS effluent concentrations were applied (Note: The TMDL allows up to 25mg/L) to demonstrate the maximum oxygen requirements for the proposed process.

Table 1-1 Influent & Effluent Design Criteria

Average Flow	2.0	MGD
Peak Hourly Flow	4.0	MGD
BOD Influent	150	mg/L
	2,502	lbs/day
TSS Influent	150	mg/L
	2,502	lbs/day
TKN Influent	40.0	mg/L
	667	lbs/day
BOD Effluent	0	mg/L
	0	lbs/day
TSS Effluent	0	mg/L
	0	lbs/day
Ammonia Effluent	4	mg/L
	67	lbs/day

Table 1-2 summarizes calculated mass balance data for the facility. As previously indicated, the MLSS was determined from actual data. To calculate the maximum air requirement, a denitrification oxygen credit was not applied in the calculations. The mass balance is summarized on sheet G-6, volume III of the Contract Documents.

Table 1-2 Anoxic Basin/Aeration Basin Mass Balance

Anoxic Basin/Aeration Basin		
Yield	0.7	
Recycle Min	4	MGD
Recycle Max	8	MGD
Raw Flow Into Process	2.0	MGD
BOD In	2,502	lbs/day
TKN In	667	lbs/day
MLSS	11,000	mg/L
Anoxic Volume (per Train)	0.075	MG
Number of Trains	2	each
HRT	1.8	hours
Aerobic Volume (per Train)	0.106	MG
Number of Trains	1	each
HRT	1.3	hours
MBR Basin Volume (per Train)	0.071	MG
Number of Trains	4	each
HRT	3.4	hours
Total HRT	6.4	hours
F/M	0.07	
SRT	28.3	days
Denitrification BOD Credit	0	lbs O2/day
Total O2 Requirement	6,072	lbs O2/day
TSS Out	*1,751*	lbs TSS/day
TSS Concentration	*1%*	
Aerobic Digestion		
Gallons In	21,000	gpd
TSS In	1,751	lbs/day
VSS	77%	
#VSS In	1,349	lbs/day
Volume, each	0.12	MG
Tanks	2	each
HRT	11.0	days
VSS Destruction	0%	%
#VSS Destroyed	0	lbs/day
Solids Remaining	1,751	lbs/day
Dewatering		
# to dewatering/day	1,751	lbs/day
Capture Efficiency	95%	
Solids Concentration Out	16%	
Gallons Out	1,247	gpd
Solids Concentration Drying Bed	75%	
Gallons Out	266	gpd
Wet Pounds	2,218	lbs/day
Dry Cake Solids	1.1	ton/day

1.4 Process Air

1.4.1 Air Calculation

As a part of the mass balance calculation, Actual Oxygen Requirement (AOR) was calculated. Based on the AOR, Standard Oxygen Requirement (SOR) was calculated as shown in Table 1-3. Fine bubble diffusers in the pre-air basin typically provide an oxygen transfer efficiency rate of 1.9% per foot depth based on standard oxygen transfer efficiency in clean water. The membrane cassettes provided by Kubota have membrane diffusers for scour air on the bottom of the cassettes that create fine bubbles. The diffuser transfer efficiency has been derated for the cassettes to 1.5 % per foot depth because of quantity of air going through them and the higher packing density in the basin. This was used to be conservative with the air requirement. Scour air requirement for the basin is minimum of 912 SCFM per train, or a total of 3,648 SCFM with 4 basins in operation. When the facility operates with the 3 basins, a minimum of 2,770 SCFM will be supplied to the process in the membrane trains which is just under the required SCFM to supply enough oxygen to meet the AOR, as shown below (2,816 SCFM). The membrane air can be turned up to 2,816 SCFM as required.

Based on the calculated scour air requirements for the proposed upgrades, it was determined the WRF will not need additional air in the pre-air basins other than for mixing. Air required for complete mixing is approximately 300 SCFM, which was calculated using the pre-air basin volume (14,508 cu.ft.) multiplied by 20 SCFM/1,000 cu.ft. It should also be noted that the plant currently runs no air to the pre-aeration basin and adequately provides enough oxygen for the biological process.

Table 1-3 as follows, provides a summary of the oxygen transfer within the membrane trains during normal operation of three (3) trains. The actual oxygen requirement (AOR) is based on providing 1.2 lbs of O2 per pound of BOD and 4.6 lbs of BOD per pound of ammonia. No denitrification credit was taken. At the reduced transfer efficiency

Table 1-3 Air Calculation

Air Required	AOR	6,072	lb O_2 / day
Site Altitude		4,530	ft
Density of Air	ρ_{AIR}	0.075	lb/ft3
Mass Fraction of Oxygen in Air	C_{O2}	0.232	
Kinetic Correction Factor	α	0.65	
Thermodynamic Correction Factor	β	0.95	
Temperature Correction Factor	θ	1.024	
Oxygen Saturation at Site Barometric Pressure and Wastewater Temp	C_{TP}	7.1	
Oxygen Saturation at Standard Temp and Pressure	C_{20}	9.08	
Residual Oxygen Concentration in basin	C_R	2	
Max Design Operating Temp	T	25	
Oxygen Transfer Efficiency per Foot	$SOTE_{FT}$	1.5%	
Depth		15	ft
Standard Oxygen Transfer Efficiency	SOTE	22.5%	
Standard Oxygen Transfer Rate	SOTR	15,877	lb O_2 / day
Air Required		**2,816**	**SCFM**

1.4.2 Air Pipe Routing

Currently, the existing air pipes are routed from the blowers overhead and penetrate the floor of the blower room with the main distribution header beneath the concrete floor. Operators at the WRF believe the underfloor piping is broken/leaking air. As such, the proposed upgrade includes installing exposed headers to replace the below slab piping. The replacement air piping was sized satisfactorily. This modification does not add significant length to the existing piping; and the air distribution pipe sizes will remain the same.

1.5 Existing Blowers

Currently the WRF is equipped with four (4) centrifugal blowers with VFDs, each capable of delivering up to 2,400 SCFM at 8 psig. Thus operating in a 3 duty and 1 standby configuration, the blowers can provide 7,200 SCFM at 8 psig. Additional information on the existing blowers, including performance curves, can be found at the end of this document.

The air requirement for the plant is 100 SCFM for anoxic zone mixers, 50 SCFM for the grit system, 300 SCFM for the pre-aeration basins, and 3,648 SCFM for the 4 membrane trains. This is a maximum air requirement of 4,100 SCFM. There is significant excess blower capacity with this upgrade.

1.6 Milleville City

The Water Quality Board Feasibility Report was provided by Beth Wondimu on Feb 28th, 2020. Milleville City has been having issues with nitrate in their drinking water. This is believed to be results of agricultural and septic tank discharges to subsurface. The City has applied for an aquifer storage and recovery (ASR) project permit in 2018 but it was denied. Following the denial of ASR permit, the Bear River Health Department put a moratorium on any further septic permitting in the area. With both ASR permit denial and moratorium on septic permits, Milleville has moved to develop plans to sewer the community.

Based on the report, the current population of the City is estimated to be of 2,050 with culinary connections of 630. With the State design allowance of 100 gallons per capita per day (Utah Admin Code R317-3-2), Milleville City would have sewer discharge of 205,000 gallons per day. It is yet to be decided whether Milleville City will connect to the sewer facility in Logan or form regional facility with Hyrum City. It is highly likely that the existing facility design, capability, and possible upgrades will be discussed while Milleville City is making those decisions. However, even if it is decided to form a regional facility with Hyrum City, the facility will have capacity of 2.0 MGD once this upgrade is complete. As it was previously mentioned, current influent to the facility is 1.0 MGD, thus, additional 0.2 MGD can be treated at the facility without any upgrades to the facility at this point. It is anticipated that the existing permit would have to be updated, and an Antidegradation Report would be looked at for the new facility, if and when additional flow is needed at the Hyrum WRF. Based on current growth rates if Milleville joins Hyrum WRF the 2.0 MGD capacity would be reached around 2045. This provides ample time for the Cities to plan for future expansion needs.

Appendix A

Continental Blower, L.L.C.

23 Corporate Circle
E. Syracuse, NY 13057
Phone: (315) 451-5410 Fax: (315) 451-5950
E-Mail: mikem@continentalblower.com
Website: continentalblower.com

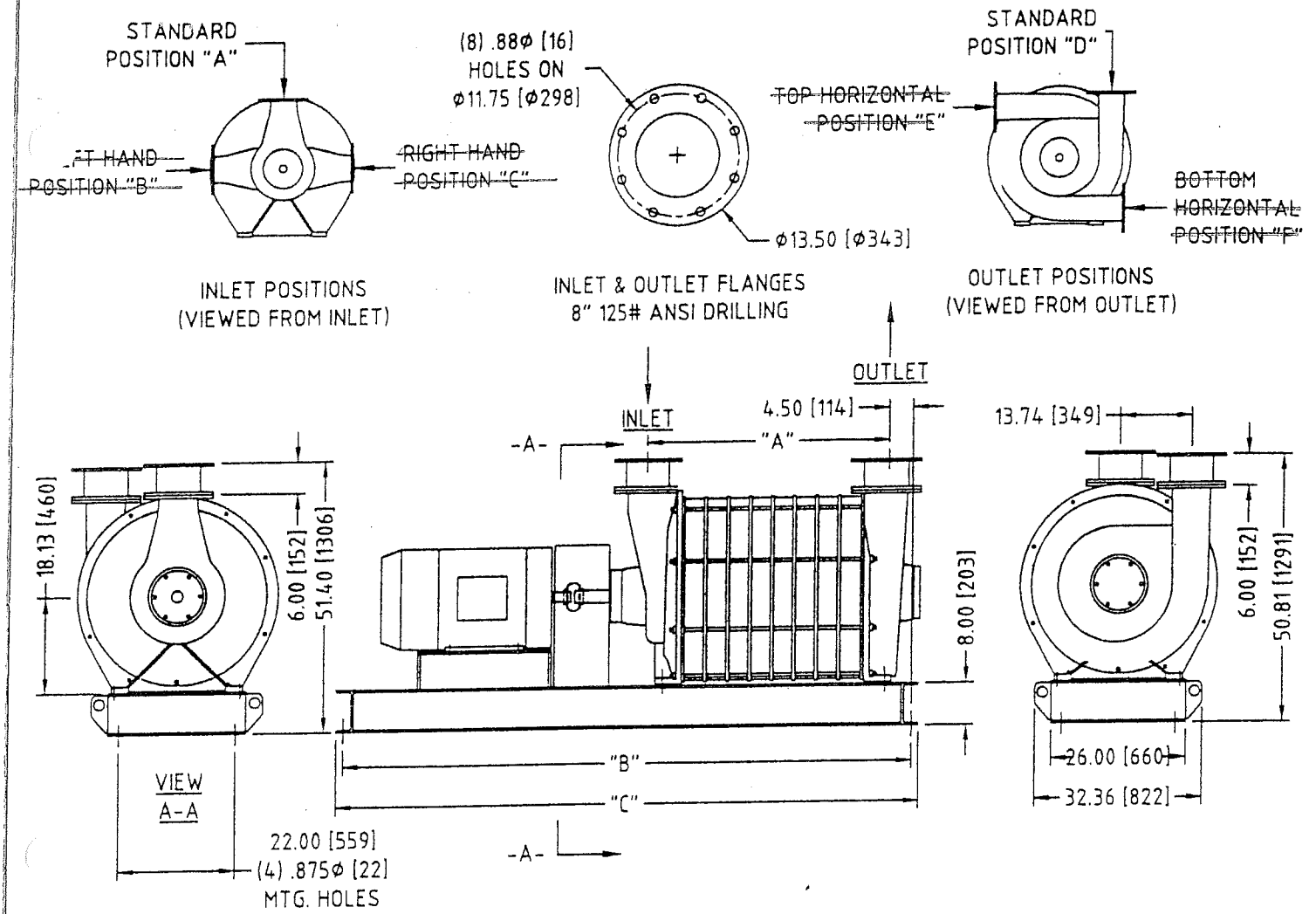
Hyrum City Corporation
83 West Main
Hyrum, Utah 84319

Hyrum City Corporation PO # 18651
Continental Order # 030798

Installation, Operation and Maintenance Manuals

(sn-0477A018, 0477A019, 0477A020, 0477A021)

Equipment:	**Continental Model 77.08 Dimensions** **Continental Model 77 Technical Data** **Continental Model 77 Mechanical Specifications** **Performance Data** **Rexnord Coupling** **Baldor Motor** **Base Pads** **Universal Filter Silencers** **PDC Butterfly Valves** **Red Flex Expansion Joints** **Techno Check Valves** **Control Panel**
I, O & M Data	**Continental I, O & M Manual** **Baldor Motors**
Warranty/Spare Parts	**Warranty** **Recommended Spare Parts**
Area Representative	**Goble Sampson** **3500 So. Main Street, Suite 200** **Salt lake City, Utah 84115** **P: 801-268-8790** **F: 801-268-8792**



BLOWER SIZE	MAX. MOTOR FRAME SIZE	"A"	"B"	"C"
7701	284T	11.42 [290]	54.0 [1372]	66.0 [1676]
7702	326TS	15.75 [400]	60.0 [1524]	72.0 [1826]
7703	365TS	20.08 [510]	66.0 [1676]	78.0 [1981]
7704	405TS	24.41 [620]	74.0 [1880]	86.0 [2184]
7705	444TS	28.74 [730]	86.0 [2184]	98.0 [2489]
7706	445TS	33.07 [840]	90.0 [2286]	102.0 [2591]
7707	445TS	37.40 [950]	90.0 [2286]	102.0 [2591]
7708	447TS	41.73 [1060]	102.0 [2591]	114.0 [2896]
7709	449TS	46.06 [1170]	114.0 [2896]	126.0 [3200]

QTY (4)

DIMENSIONS ARE IN INCHES AND [mm]
ACTUAL DIMENSIONS MAY VARY SLIGHTLY TO SUIT APPLICATION

☐ FOR APPROVAL ☒ CERTIFIED

PROJECT: - HYRUM UT.
CUSTOMER: - HYRUM CITY CORP.
P.O. # - 18651
CB # - 030798
DATE: - 1/12/04 BY: GBL

CONTINENTAL BLOWER SIZES 7701 THRU 7709
AIR & GAS INLET DRIVEN (DIRECT DRIVE)

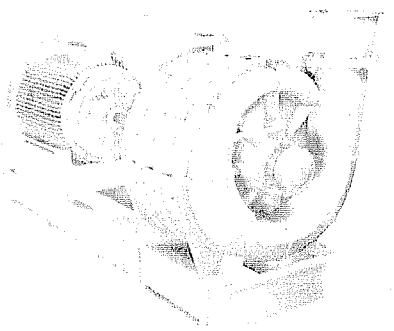
DRAWING NUMBER CB77/FLG | REV. 2 | 4/11/01

Continental Blower, L.L.C.

441 Beechwood Ave
Liverpool, NY 13088
Ph: (315) 451-5410
Fax: (315) 451-5950

TECHNICAL DATA SHEET

"77" SERIES



AIR & GAS

TECHNICAL DATA

Number of stage : 1 thru 8 (cast) - 1 thru 11 (fabricated)

Inlet connection : 8" (202 mm) flange, matches 125# ANSI

Outlet connection : 8" (202 mm) flange, matches 125# ANSI

Operating speed : 3550 rpm in direct drive (60Hz), 4400 with gear box or V-belt

Lubrication : Oil type ~~with constant level (grease optional)~~

Impeller diameter : 24" (611 mm)

Impeller tip speed : 372 f/s (113 m/s)

Drive : Direct drive or gear box or V-belts

Vibration tolerance : 1.25 mils peak-to-peak (4.5 mm /s)

Shaft end : 2" 3/8 (60 mm), inlet end drive standard.

MATERIALS OF CONSTRUCTION

Head, Sections, Bearing housings : Cast iron ASTM A-48 Class 35B

Tie rods : 13/16" (20 mm) diameter cold drawn steel A60

Joint sealing compound : RTV IS502 Silicone

Seals (air) : Two graphit rings each end

~~**Seals (gas) : Four carbon rings each end with inert gas injection**~~

Bearings : Ball bearings 6313 C3 per AFBMA B10 STANDARD

Shaft : AISI 1038 Carbon Steel or equivalent

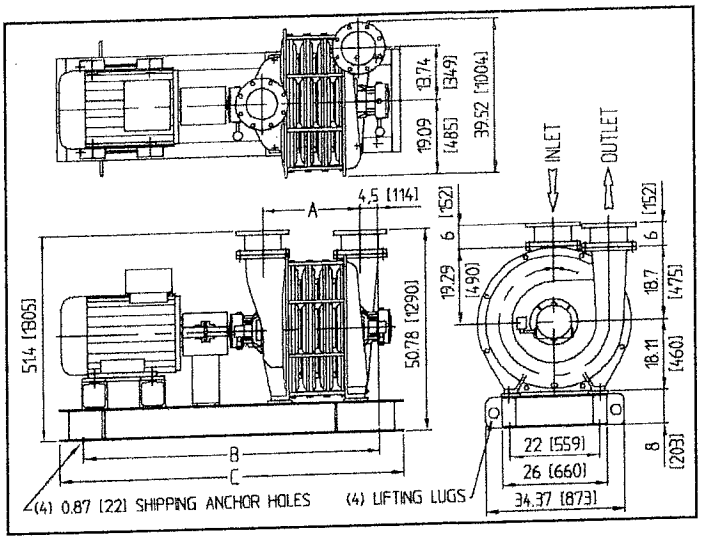
Impellers : Cast aluminium ASTM 360 ; fabricated aluminium ASTM 6061

Baffle rings : Stainless steel

Motor pedestal : Structural steel.

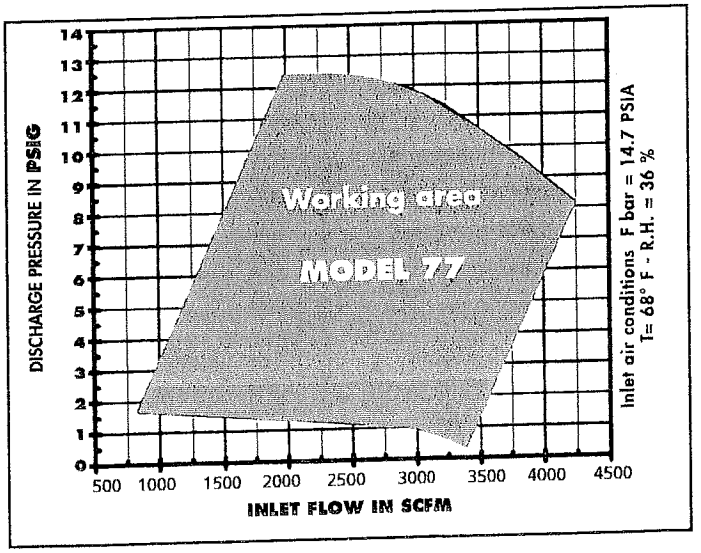
Base pads : Korfund Elasto-rib or equivalent

Noise level : In compliance with OSHA standards when machine is fully, piped (certified tests available).



BLOWER SIZE	"A"	"B"	"C"	WEIGHT LBS	WEIGHT KG	ROTOR WK²(lb. ft²) CAST	ROTOR WK²(lb. ft²) FABRIC.
7701	11.42 (290)	54.0 (1372)	66.0 (1676)	1980	900	11.95	3.86
7702	15.75 (400)	60.0 (1524)	72.0 (1829)	2290	1040	23.75	7.66
7703	20.08 (510)	66.0 (1676)	74.0 (1880)	2600	1180	35.55	11.46
7704	24.41 (620)	74.0 (1880)	86.0 (2184)	2930	1330	47.35	15.26
7705	28.74 (730)	86.0 (2184)	98.0 (2489)	3260	1480	59.15	19.06
7706	33.07 (840)	90.0 (2286)	102.0 (2591)	3550	1610	70.95	22.86
7707	37.40 (950)	90.0 (2286)	102.0 (2591)	3810	1730	82.75	26.66
7708	41.73 (1060)	102.0 (2591)	114.0 (2896)	4140	1880	94.55	30.46
7709	46.06 (1170)	114.0 (2896)	132.0 (3200)	4470	2030	106.35	34.26

DIMENSIONS ARE IN INCHES AND (MM)
ACTUAL DIMENSIONS MAY VARY SLIGHTLY TO SUIT APPLICATION



CONTINENTAL

Multistage Centrifugal Blowers and Exhausters

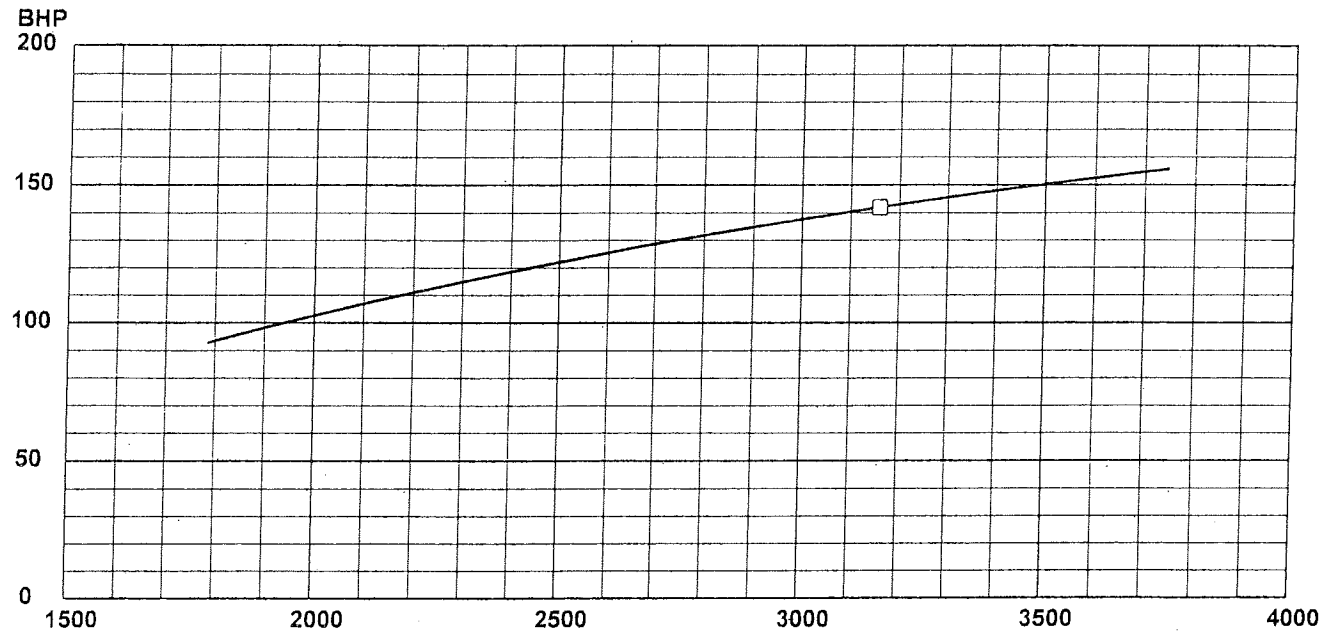
Customer:	Quote/Order #
Project Name: Hyrum	Prepared by: MTM
Project Location:	Date: 31 Jul 2003; 03:41 PM

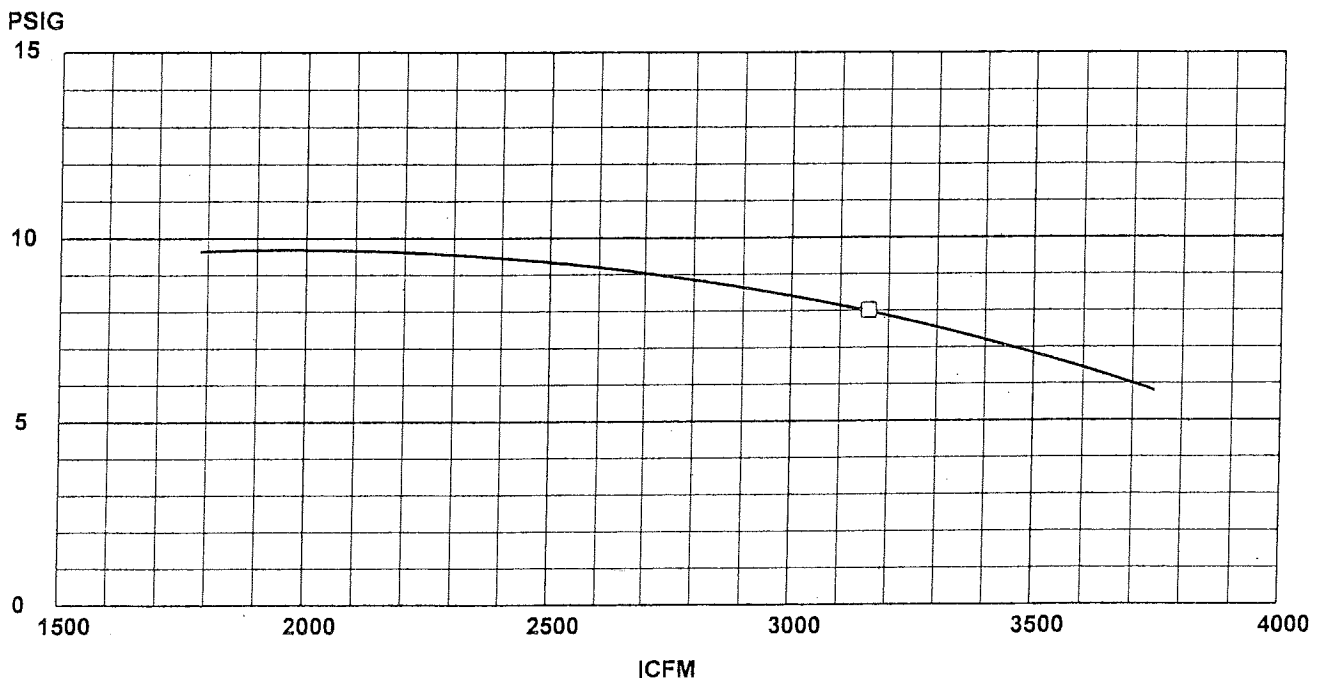
☐ Jobsite Conditions [Air]

Barometer :	12.51 PSIA
Inlet Pressure:	12.31 PSIA
Inlet Temperature:	100.0 F
Relative Humidity:	60.0 %
RPM:	3500

Notes: 2,400 scfm at 8.0 psig

Model	Stages	Impellers
77	8	(8) 5312





Estimated Performance

CONTINENTAL

Multistage Centrifugal Blowers and Exhausters

Customer:	Quote/Order #
Project Name: Hyrum	Prepared by: MTM
Project Location:	Date: 31 Jul 2003; 03:41 PM

Notes: 2,400 scfm at 8.0 psig	Model	Stages	Impellers (8) 5312
	77	8	

Jobsite Conditions	Input Data		English Data		Gas Composition
RPM:	3500				Air
Barometer :	12.51	PSIA	12.51	PSIA	
Inlet Pressure:	12.31	PSIA	12.31	PSIA	
Inlet Temperature:	100.0	deg F	100.0	deg F	
Inlet Flow:	2400	SCFM	3160	ICFM	
Design Disch Press:	8.00	PSIG	8.00	PSIG	
Relative Humidity:	60.0	%	60.0	%	

Jobsite Performance	Plot Units		Gas Properties		
Surge pressure:	9.64	PSIG	MW	28.47	
Surge flow:	1785	ICFM	Cp	0.246	Btu/#-deg R
Press @ design flow:	7.97	PSIG	k	1.395	
Power @ design flow:	141.60	BHP			
Adiabatic Eff. @ design flow :	65.7	%			
Disch Temp @ design flow:	233.4	F	Valve inlet density		
Rise to surge:	1.64	PSIG	0.058 #/cu.ft.		
Turndown:	43.5	%			

EAP =11.05 PSIG EquivStdICFM = 3205 ICFM

WATER RECLAMATION FACILITY MASTER PLAN

Hyrum City

May 29, 2026

SUNRISE ENGINEERING

Hazen

SUNRISE ENGINEERING

2100 North Main Street, North Logan, UT 84341
TEL 435.563.3734 | **FAX** 435.563.6097

May 29, 2026

Angela Pritchett, Water Reclamation Manager
Todd Perkins, Financial Administrator
Hyrum City
60 West Main
Hyrum, UT 84319

RE: Hyrum City Water Reclamation Facility Master Plan

Dear Selection Committee,

It is our pleasure to submit Sunrise Engineering and Hazen and Sawyer's (Hazen) proposal for the Hyrum City Water Reclamation Facility Master Plan project. We are excited to work with Hyrum City and provide the award-winning service and professional expertise Sunrise Engineering and Hazen are known for. Our work throughout the west, including within Cache Valley, has provided us with a deep knowledge of communities just like yours.

FIRM QUALIFICATIONS

Our team has a track record of collaborating with clients to develop solutions that work well within project constraints. The result is an optimum balance of cost and operational performance. The majority of our work continues to be performed for repeat clients. These continuing relationships are a reflection of our clients' trust and satisfaction.

Sunrise Engineering and Hazen are teaming up on this project to provide local presence and specialized biological process experience to make sure that Hyrum City receives a well-rounded and very capable team. Sunrise Engineering will serve as the overall project manager and will be responsible for overseeing the efforts of the full team. This project will be delivered out of our local office located in North Logan, while utilizing team members (both Sunrise and Hazen) throughout the Mountain West.

PROFESSIONALISM

We are committed to customer satisfaction and long-term relationships which means we will strive for excellence on your project. By corporate policy, our project managers implement quality assurance and quality control plans on each undertaking. Quality control ensures that each effort produces valuable results in product and experience for you.

We are looking forward to developing our working relationship with Hyrum City and respectfully request your support in our selection. We promise you quality engineering services with no regrets when you select Sunrise Engineering and Hazen for your project. I will serve as your project manager and point-of-contact and can be reached at 435.213.4448 or sarchibald@sunrise-eng.com.

Sincerely,

Scott Archibald, PE
Principal Engineer
435.213.4448
sarchibald@sunrise-eng.com

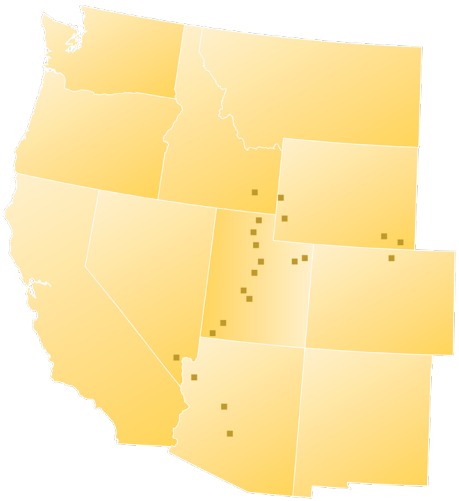
ABOUT SUNRISE

Since 1978, Sunrise Engineering has been dedicated to helping communities build resilient infrastructure, and our journey from a small surveying firm in Fillmore, Utah, to a regional leader in wastewater engineering reflects that commitment. With nearly 500 employees across 25 offices in six states, we provide innovative, practical solutions for wastewater challenges that meet the unique needs of each client while protecting public health and the environment.

Our expertise includes the design of wastewater collection systems, advanced treatment facilities, and recycling solutions. We offer comprehensive services such as feasibility studies, system modeling, process optimization, and construction oversight. Our team is well-versed in regulatory requirements at the local, state, and federal levels, helping clients navigate permitting processes and avoid costly delays. From addressing aging infrastructure to planning for future growth, our designs focus on long-term sustainability, operational efficiency, and cost-effectiveness.

In addition to traditional wastewater engineering services, Sunrise integrates complementary capabilities like GIS mapping, funding assistance, and environmental planning to provide seamless support throughout the project lifecycle. At Sunrise, we understand the critical role effective wastewater systems play in public health and environmental stewardship. By partnering with us, you gain a team committed to delivering solutions that enhance quality of life, support growth, and safeguard resources for future generations. Together, we'll create wastewater infrastructure that works today and for decades to come.

ENGINEERING	WASTEWATER	WATER	DRAINAGE/ FLOOD CONTROL	TRANSPORTATION	ENVIRONMENTAL
	ELECTRICAL	LAND DEVELOPMENT	STRUCTURAL	PARKS & RECREATION	CONSTRUCTION MANAGEMENT
SURVEY	LAND BOUNDARY/EASEMENTS/ RIGHT-OF-WAY		TOPOGRAPHIC	CONSTRUCTION LAYOUT	3D IMAGING
COMMUNITY DEVELOPMENT	PUBLIC INVOLVEMENT	COMMUNITY PLANNING	ECONOMIC DEVELOPMENT	ENVIRONMENTAL PLANNING	FUNDING ACQUISITION
GIS	UTILITY MAPPING	CEMETERY MANAGEMENT	TRAILS & TRANSPORTATION	LAND USE MANAGEMENT	
	FIELD COLLECTION & INSPECTIONS	MAPPING, MANAGEMENT, & ANALYTICAL SERVICES		CLOUD SMART GIS	
BUILDING CODE SERVICES	BUILDING INSPECTION	PLAN REVIEW	3RD PARTY INSPECTIONS	PEER REVIEWS & CODE CONSULTING	
NATURAL GAS	TRAINING & QUALIFICATION	COMPLIANCE & STUDIES	PIPELINE ENGINEERING	3RD PARTY INSPECTIONS	AS-BUILT MAPPING



PRINCIPAL OFFICE

Logan
2100 North Main Street,
North Logan, Utah 84341
TEL 435.563.3734

SUNRISE OFFICES

UTAH
Cedar City
Fillmore
Logan
Nephi
Richfield North & South
Roosevelt
Salt Lake City
South Ogden
St. George
Utah County
Vernal
West Jordan

NEVADA
Henderson
Las Vegas

ARIZONA
Kingman
Phoenix
Prescott

COLORADO
Alamosa
Fort Collins

IDAHO
Pocatello

WYOMING
Cheyenne
Kemmerer
Laramie
Star Valley

Our clients can depend on us to carefully administer projects from conceptualization through construction administration. For a more detailed description of our company, please visit our website at www.sunrise-eng.com.

Firm Information

Hazen brings a responsive, local team that has significant experience working in Utah, and are backed by the resources of one of the top water firms in the country. Our team will ensure your preferences are incorporated into our delivery process and that we remain fully available and responsive to your needs.

Firm Background

Founded in 1951, Hazen has grown to 2,000+ employees and is nationally recognized as a leading water-only engineering firm. Supported by highly-regarded national drinking water and water reclamation process experts, we are known for talented local resources with a reputation for exceptional technical quality and timely delivery. This equates to responsive client service and best-value solutions as we partner with your staff to deliver collaborative projects. We are backed by the strength and depth of a national firm that focuses solely on "all things water".

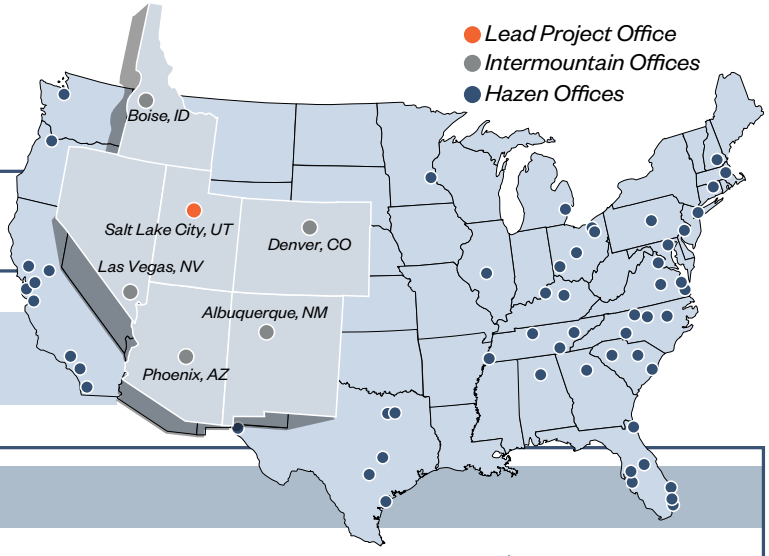
We are committed to the Utah water market. From our local office in Salt Lake City, we provide full engineering services to our Utah clients. Through outstanding service, we have grown our local staff to 20+ professionals who function as part of our Intermountain team of over 180 engineers, technologists, project managers, and construction managers with expertise in water-related planning, testing, design, construction management, and operations assistance. Our team members bring a broad, national perspective to offer fresh ideas. The end result is a fully integrated team that your team can count on for support for years to come.

Since 1951

Hazen and Sawyer has been focused on two things

Providing Clean Drinking Water & **Controlling Water Pollution**

100% of our business is focused on water and wastewater solutions



Areas of Service

- Wastewater
- Drinking Water
- Reuse
- Hydraulic Analysis
- Collection Systems
- Master Planning
- Nitrogen Removal
- Cost Estimating

Project Experience

Moroni Wastewater Reuse Feasibility Study & Master Plan | 2026

Moroni City and Pitman Farms Poultry Processing jointly operate an MBR wastewater treatment plant to treat their wastewater. This plant has had numerous challenges over the years. Sunrise and Hazen teamed up to prepare a wastewater treatment master plan. This master plan provided an evaluation of the existing biological process and its current operation condition. The plan made recommendations for improvements to the plant to increase efficiency and increase plant capacity. The plan also evaluated improvements that would be required to utilize plant effluent as reuse water. Additionally, cost estimates associated with improvements were prepared and included. A summary of all results, findings, estimates, and recommendations was provided in a written report and presented to city council.

Sunrise Team: Robert Worley, Principal; Travis Kenworthy, Project Engineer
Hazen Team: Parry Osborn, Biological Process Technical Expert

Mountain Green Feasibility Study & WRF Design | 2025

The Mountain Green Water Reclamation Facility project started with an analysis of options for various types of treatment plants. These were presented in the impact fee facilities plan that was completed in 2020. A biological nutrient removal (BNR) system was selected by the board, primarily due to its low associated capital and operating costs. The complementation of this selection involved upgrading an existing aerated lagoon treatment plant from 0.4 MGD average flow to 1.5 MGD (with design to further expand to 3.0 MGD) mechanical BNR treatment to meet the EPA phosphorus rule of less than 1 mg/L. The new plant includes mechanical bar screens, grit removal (grit chamber and grit classifier), a dewatering screw press, disc filters, and UV reactor disinfection. An HDPE lined BNR basin with aeration was put in place of their existing clay lined lagoon. Additionally, the project included two 75' diameter secondary clarifiers, a two-unit aerobic digester, and new headworks building and plant operations building structures. Sunrise provided planning, design, funding, bidding, and construction management services.

Sunrise Team: Robert Worley, Principal; Travis Kenworthy, Project Engineer

Victor WRF Preliminary Engineering Report | 2025

Victor City currently sends its wastewater to the nearby community of Driggs. Over the last decade, that plant has suffered many violations and is looking at significant improvements. As such, Victor's city council has opted to separate themselves from Driggs and construct their own water reclamation facility. Victory hired Sunrise to perform a preliminary engineering report (PER) to identify the means and methods necessary to treat their water. The plan is based upon treating 0.4 MGD currently with expandability up to 0.8 MGD in the future. The PER evaluated headworks screen, grit removal system, activated sludge process, clarification, disinfection, solids handling, and effluent discharge options. The final plan was summarized and compiled into a written PER.

Sunrise Team: Robert Worley, Principal; Travis Kenworthy, Project Engineer

Frankfort E.C. McManis WWTP Expansion | Ongoing

Hazen prepared a facility plan and preliminary engineering report for the expansion of a 9.9 MGD WWTP. The flow and load projection over a 20-year planning period included significant growth due to industrial changes in the collection system. The project included a historical data review, detailed field sampling, influent characterization, calibration of a BioWin model, and an alternatives evaluation. The evaluation considered expansion of the existing oxidation ditches or flipping the plant to a conventional treatment train. This project is currently in the design phase.

Hazen Team: Kelley Florence, Process Lead & Assistant Project Manager

Western Regional WRF Facilities Plan | 2024

Hazen completed a facility plan for Western Regional WRF in Montgomery County, OH, with a specific focus on the plant's two stages of Clari-Vac clarifiers, aeration blowers, aerobic digesters, and plant automation. The project included compilation and analysis of plant historical data, review of vertical asset management plan data, writing of technical memorandums, site visits and operator interviews, design criteria development, and aeration blower design and siting.

Hazen Team: Kelley Florence, Process Engineer

Fairfield Aeration Evaluation PER & Detailed Design | 2023

Hazen evaluated and designed activated sludge improvements for the 10-mgd WWTP. The evaluation used historical data review, BioWin model calibration, and projected load and limits to recommend a pathway of expansion, process changes like the addition of a selector, and operational changes to meet future loads and limits. The project included the replacement of blower, diffusers, modulating valves for air flow control, and a new above ground air header.

Hazen Team: Kelley Florence, Process Engineer

References

MOUNTAIN GREEN SID

Jared Anderson
Plant Manager
801.829.8238
jared@mgsid.com

Sunrise provided planning, design, funding, bidding, and construction management services for the Mountain Green Water Reclamation Facility project.

MORONI CITY

Fred Atkinson
City Councilman
435.851.9685
fred.atkinson@moronicity.gov

Sunrise worked with Moroni City to complete a wastewater reuse feasibility study and a wastewater capital facilities plan.

FRANKFURT CITY

Kenny Hogsten
Sewer Department Director
502.875.2448
khogsten@frankfort.ky.go

Hazen prepared a facility plan and preliminary engineering report for a 9.9 MGD wastewater treatment plant expansion.

Proposed Project Team

Sunrise and Hazen understand that when you select a professional services team, you are ultimately selecting people – people that you will be working with side by side for years to come. Effective teams do not happen by accident. It can take years of collaborative effort between the people involved to identify and harness the unique talents of each team member in order to improve upon and strengthen the team. Our personnel have worked together on projects similar to yours. Each member has demonstrated extreme professionalism, as well as an ability to consistently provide quality deliverables on schedule and within budget. Our key personnel have both the ability and availability to complete your project on time and within budget.

Resumes for key team members are included in Appendix A at the end of this submittal.

HYRUM CITY
Established 1860

SCOTT ARCHIBALD, PE
Project Manager

ROBERT WORLEY, PE
Principal-in-Charge

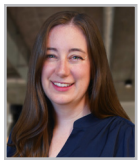
SUNRISE KEY PERSONNEL

SPENCER BEREZAY, EIT
Project Administration

TRAVIS KENWORTHY, PE
Mechanical Lead

HAZEN KEY PERSONNEL

PARRY OSBORN, PE
Hazen Project Lead



KELLEY FLORENCE, PE
Process Lead

ROCK XU, PE
Project Engineer

MICHAEL BUNDY, PE
Technical Advisor

Project Approach & Scope

Project Understanding & Approach

Our approach to developing the wastewater treatment plant master plan is centered on providing a clear, practical roadmap for the city that reflects both sound engineering principles and the realities of day-to-day plant operations. We recognize that the existing MBR facility and its performance, reliability, and long-term expandability are critical to meeting the current and future needs of Hyrum City.

Sunrise Engineering and Hazen and Sawyer (Hazen) are teaming up on this project to provide local presence and specialized biological process experience to make sure that Hyrum City receives a well-rounded and very capable team. Sunrise Engineering will serve as the overall project manager and will be responsible for overseeing the efforts of the full team. This project will be delivered out of our local office located in North Logan, while utilizing team members (both Sunrise and Hazen) throughout the Mountain West.

The Sunrise/Hazen team has a history of working together on projects when beneficial for our clients. We recently completed a similar wastewater master plan for a MBR treatment plant located in Moroni, Utah.

We believe the most successful master plans are developed through close coordination with those who operate the system every day. The WRF manager and operations staff have invaluable insight into how the plant truly performs, what challenges occur, and where opportunities exist for improvement. We will work closely with the WRF manager throughout the project, incorporating their experience and perspective into every stage of the evaluation.

The schedule requested is very aggressive and we are committed to meeting it. We will utilize workshops to be efficient and maintain the schedule. These workshops will ensure the city remains informed and engaged, that our engineering team remains focused and that the plan reflects both technical analysis and operational priorities necessary to steer the WRF into the future.

Prior to each workshop, we will provide the city with a technical memo summarizing the findings from that stretch of the evaluation and an agenda for the workshop. Within these agendas, certain information will be highlighted that we will need to address and decisions that the city will need to make. This process is crucial to maintain the efficiency needed to meet this aggressive schedule while not sacrificing a quality master plan.

Project Scope

PHASE 1: Engineering Report Update

(1-Month Fast-Track)

An initial kick-off meeting will be held. Along with this kickoff meeting, a site visit of the plant will be conducted to physically evaluate the plant and review any known deficiencies with the operations staff.

Following the site visit, the team will review the 2005 original design criteria and the draft 2020 report against Utah DWQ audit findings to isolate the exact regulatory loading calculation mismatches.

Using the original design criteria, plant operational data, state regulations and best engineering practices, we will perform a desktop evaluation to establish the maximum BOD and TSS mass loading capacities of the current facility footprint under Utah Admin Code R317-3.

Deliverable: Deliverable for this task will include a stamped technical memo summarizing the treatment capacity of the existing WRF. This document will be delivered to the city with the intent that the city will submit to the DWQ.

This document will be received by the city within one month of receiving the NTP and necessary system documentation including five years of water quality data and as-built drawings.

PHASE 2: Master Plan

TASK 1: Condition Assessment

For each of the main treatment components, we will evaluate the current physical condition, identify the remaining capacity, and identify feasible strategies to increase the capacity. The main treatment systems that will be evaluated include:

- ***Liquid Stream Audit:*** Evaluate unit capacities under peak design flows for the headworks screens, grit removal, anoxic/aerobic reactor volumes, and the 2021 MBR basin/cassette configurations.
- ***Solids & Support Stream Audit:*** Assess performance curves and physical condition for the process blowers, UV channels, sludge dewatering, and handling operations.
- ***Footprint Optimization:*** Identify operational optimization strategies to maximize the current facility footprint, deferring high-cost civil expansion projects.

Existing operation and maintenance documents, design criteria, typical design parameters and maintenance records will be utilized along with information gathered in the initial site visit to perform this assessment.

Deliverable: Deliverable for this task will include a technical memo summarizing the findings. This tech memo will be provided to the city prior to Workshop #1 where the findings will be discussed and any key decisions will be made to move the overall study forward.

TASK 2: Current & Projected Flows and Loadings

Utilizing city provided flow data and historical influent water quality, along with approved and published general plan data (for both Hyrum and Millville) identifying 20-year anticipated growth rates, we will define the current and projected flow and loading rates. These numbers will serve as the basis of design for the remaining master planning documents.

This information will be provided in Excel format from the city. Evaluation will highlight and filter out extreme anomaly data that

may have been caused by documented historical Parshall flume backwater, etc. that would cause errors in data.

Deliverable: Deliverable for this task will include a technical memo summarizing the findings. This tech memo will be provided to the city prior to Workshop #1 where the findings will be discussed and any key decisions will be made to move the overall study forward.

TASK 3: Document Current & Potential Regulatory Requirements

Utilizing the existing permit requirements and conversations with Division of Water Quality staff, we will analyze long-term compliance triggers within UPDES Permit UT0023205 concerning Spring Creek discharge caps and Type 1 Water Reuse requirements.

These will be documented and define treatment and operational goals utilized as the master plan makes recommended improvements.

It should be known that future regulations will be speculative in nature and will be based upon information that we gather from conversations with DWQ staff engineers. The regulatory future is uncertain. Our team brings unsurpassed understanding of the ever-changing regulatory environment. This understanding comes from our relationship with state regulators and long-standing knowledge of national regulations, leadership involvement on wastewater committees, and local project experience.

Deliverable: Deliverable for this task will include a technical memo summarizing the findings. This tech memo will be provided to the city prior to Workshop #1 where the findings will be discussed and any key decisions will be made to move the overall study forward.

TASK 4: Assess Performance & Capacity Under Current & Projected Conditions

This task will build upon data from the previous phase to determine how well the plant will run based on current and projected flows and loads. A hydraulic model of the plant will be used to assess hydraulic performance. A biological model will be prepared and used to assess the ability of the plant to meet loading characteristics. The developed models will be used to assess flow and loading thresholds to understand the current capacity limitations of the plant based on projected flows and loads. Note that due to the short duration of this project, a calibrated biological model is not being proposed. Rather, the prepared model will use modeling parameters typical of similar facilities. Preparation of a calibrated model is proposed as an alternative task and would require additional budget and time.

In addition to the plant biological process, a capacity assessment will be made of other components, including the headworks, disinfection system, and biosolids handling.

Deliverable: Deliverable for this task will include a technical memo summarizing the findings. This tech memo will be provided to the city prior to Workshop #2 where the findings will be discussed and any key decisions will be made to move the overall study forward.

TASK 5: Develop Recommended Improvements & Prepare Engineer's Opinion of Probable Cost

Based upon any deficiencies found in the previous tasks, in order to provide adequate level of service for the 20-year projected flows and loadings, we will develop no more than three viable alternatives to assess for each treatment area (headworks, biological process, disinfection, and biosolids handling). Each of the alternatives will be evaluated based on established criteria and criteria weighting. We will work closely with the city to establish these criteria and their weights. Our team will assist the city in ranking each of the alternatives in order to narrow down the alternatives to a best option. The best option will serve as the roadmap for future improvements in order to resolve identified process bottlenecks and challenges as well as aging asset deficiencies.

For each of the improvements, an engineer's opinion of probable cost will be prepared (AACE Class 4 professional opinions of probable construction costs).

Deliverable: Deliverable for this task will include a technical memo summarizing the recommended improvements along with EOPCs. This tech memo will be provided to the city prior to Workshop #3 where the findings will be discussed and any key decisions will be made to move the overall study forward.

TASK 6: Prepare 20-Year Capital Improvement Plan

Based upon the previous tasks, and information gathered from Workshop #3, we will prepare a 20-year capital improvements plan. This plan will consist of a phased capital matrix sequenced by actual flow/loading triggers, asset condition metrics, and regulatory deadlines.

Deliverable: Deliverable for this task will include information that will be rolled into the final draft of the impact fee facility plan.

TASK 7: Prepare Impact Fee Facility Plan

In each of the previous phase and tasks, critical information will be gathered, evaluated and compiled. In this task, we will summarize all information into one document. This document will meet the state requirements for an impact fee facility plan including defining existing level of service, defining any increases to the level of service necessary, identifying excess capacity, identifying anticipated demands placed on the system due to anticipated growth, and identifying necessary improvements due to the anticipated growth.

Deliverable: Deliverable for this task will include a written impact fee facility plan summarizing the information from all previous tasks. A draft copy of this document will be provided to the city prior to Workshop #4 where the plan will be discussed.

PHASE 3: Project Management

TASK 1: Project Administration.

During the duration of the project, a monthly email will be provided to the WRF highlighting the project schedule and updating status. We anticipate that this will be a brief memo with the bulk of the project updates coming from the frequent workshops.

Additionally, internal project administration will be necessary to properly manage the project budget and team. Bi-weekly meetings will be held internally to orchestrate the various activities and tasks being completed by specialty engineers.

TASK 2: Key Meetings

Various key meetings have been discussed in previous scope items including a kick-off meeting and four workshops.

The kick-off meeting will be held in person at the WRF and will include multiple experts within our team that will have accountability for certain treatment systems.

Each of the four workshops will be hybrid meetings. One of our team members will be present in Hyrum at the meetings, while pulling in other team members (technical experts) remotely as needed.

At the completion of project, the final draft of the master plan will be presented to the city. This presentation will be in person at a council meeting and will include two to three team members to make the presentation.

Assumptions

The following assumptions were made to facilitate costing the scope and approach and to develop the strategy needed to meet the city's desired schedule.

- All deliverables will be provided electronically in pdf format.
- The following durations are assumed for each meeting:
  - ***Kickoff Meeting:*** 2 hours
  - ***Workshop 1:*** 1.5 hours
  - ***Workshop 2:*** 3 hours
  - ***Workshop 3:*** 3 hours
  - ***Workshop 4:*** 1.5 hours
  - ***City Council Presentation:*** 2 hours
- Critical decisions will be identified during workshops and will be made by the city within one week of the workshop completion.
- The city will provide all plant as-built drawings (including old oxidation ditch plant) prior to or no later than the NTP.
- The city will provide all plant flow, nutrient, and operational data for the past five years in spreadsheet format prior to or no later than the NTP.
- The city shall provide current and future population data and industrial flow data prior to or no later than the NTP.
- Comments to the draft master plan report will be summarized and provided to our team within two weeks of submission.

Optional Tasks

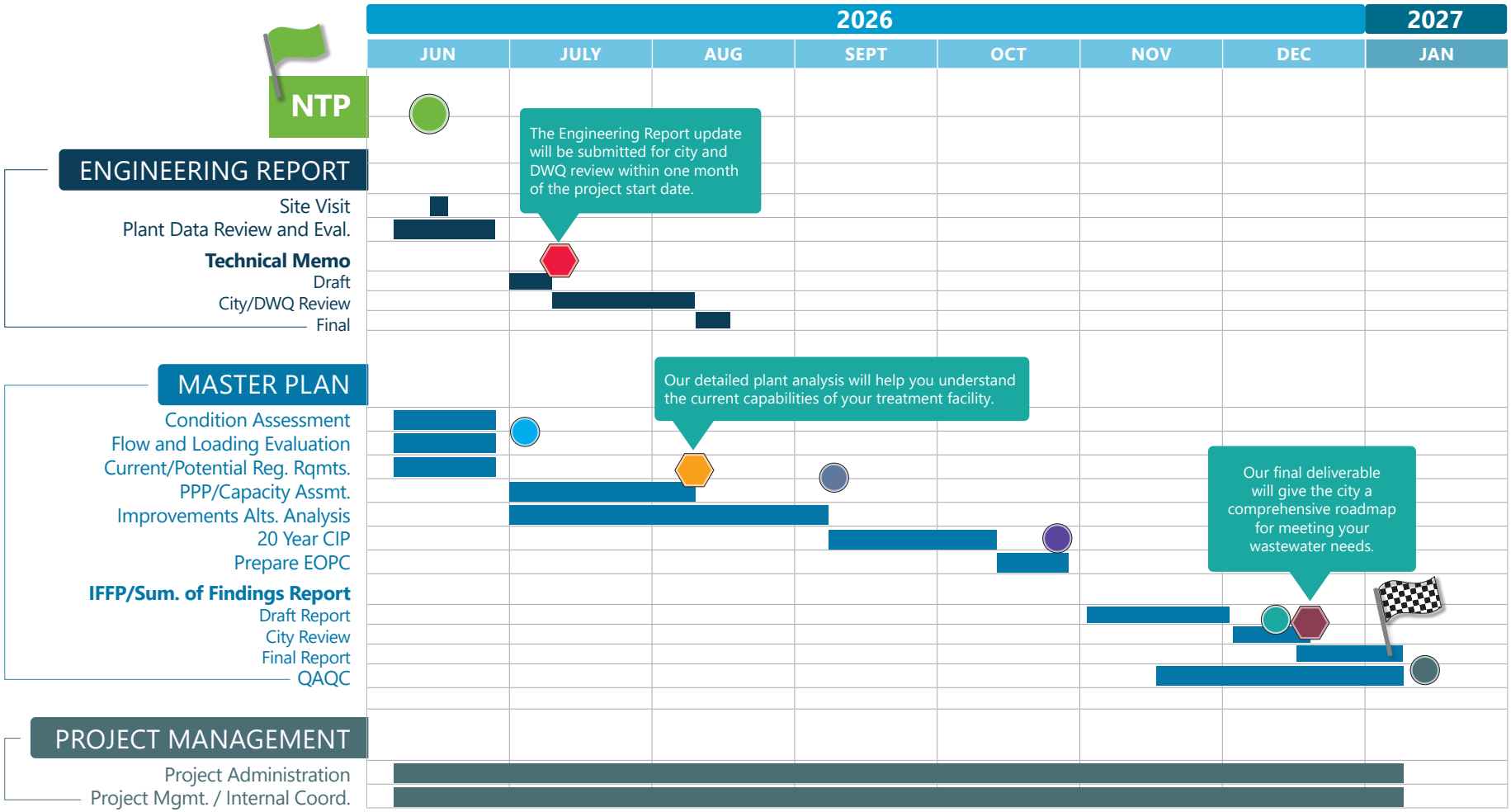
Calibrated Biological Model

Calibration of a biological process model can be completed by our team but will require an addition of two months to the schedule. In order to properly calibrate such a model, the city must provide three to five years of plant operations data including: MLSS, RAS/WAS flows and solids concentrations, airflow data, inter-basin nitrogen and phosphorus speciation, belt press feed rates and solids concentrations, and total biosolids production data. The advantage of a calibrated model allows for better process footprint optimization and process operational strategy. Such optimization could lead to high capital cost savings.

Availability

Sunrise Engineering and Hazen's proposed team has the availability needed to help successfully complete this project. Additionally, our key personnel shown in the organizational chart on page 5 each have support personnel and teams they work with on a daily basis that can be utilized as needed. By selecting Sunrise and Hazen, you can be sure that we have the resources necessary to serve your engineering needs and complete a quality deliverable on schedule and within budget. Our key personnel have worked on projects just like yours and are ready to use their expertise to make this project a success.

Schedule



MEETINGS AND WORKSHOPS

- MTG - Project Kickoff
- WS 1 - Flows and Loads
- WS 2 - Existing Cndtns. / ⬆ Cpcty.
- WS 3 - Recommendations and CIP
- MTG - Master Plan Final Draft Review
- MTG - City Council Presentation

KEY MILESTONES

- Engineering Report Update
- Detailed Plant Analysis
- Final Wastewater Deliverable

APPENDIX A | Resumes

SUNRISE ENGINEERING

Scott Archibald, PE

Scott has 29 years of experience in the planning, design, and construction management of municipal improvement projects. Many of the projects Scott has participated in include planning, funding coordination and acquisition, environmental clearance, technical design and coordination with regulatory agencies, construction administration, and GIS.

He has served as project manager for several notable municipal projects, including an improvement to Hyde Park's Well Transmission Line Project, and the Bear Lake Water Company Culinary Well and Transmission Line. He will use this experience to your benefit to ensure development and review turnaround times are met, contracts are performed in accordance with budget and schedule, and that Sunrise resources are organized to meet multiple needs simultaneously.

Project Manager

EXPERIENCE

WASTEWATER MASTER PLANS & STUDIES

- Logan Smithfield Lift Station CA
- Logan Northwest Regional Wastewater Study & Lift Station Design
- North Logan Gravity Outfall VS Smithfield Lift Station Analysis
- North Logan Hyde Park and Smithfield Wastewater Treatment Facility Study
- Logan SR-30 Wastewater Study
- St. Charles Wastewater Facility Plan
- Smithfield Wastewater Facility Plan
- Providence Wastewater/Sewer Collection Facility Master Plan
- Garland Wastewater Treatment Facility Study
- Bloomington Wastewater Facility Plan
- Logan City Northwest Study
- Nibley City Wastewater Feasibility Report
- Sunset Subdivision Wastewater Study
- Thayne Wastewater Facility Study
- Willard City Wastewater Capital Facility

WASTEWATER

- Afton North District Wastewater Project
- Afton Wastewater Project
- Bloomington Wastewater Pre-Design
- Bridger Valley Regional Wastewater Plan
- Horman - Smithfield Development Wastewater
- Logan City Northwest Design
- Mania Wastewater Extension to Daggett County
- Nibley City Wastewater
- North Logan Village Wastewater Services
- North Logan, Hyde Park, and Smithfield Wastewater
- Perry/Willard Wastewater Treatment Plant
- Perry Wastewater Treatment
- Richmond Wastewater
- South Cache Regional Wastewater Treatment Plant
- Willard Wastewater Project

WATER MASTER PLANS & STUDIES

- Franklin 2018 Water Reuse DEQ Report
- St. Charles Water Facility Plans
- Providence Water Master Plan
- Bear Lake Water Co. Water Master Plan
- Bear Lake Water Co. Distribution Study
- Bridgerland Water Study
- Clarkston Water Master Plan
- Clarkston Water Impact Fee Study
- Driggs Water Study
- Evanston Master Plan Study
- Georgetown Water Source Study
- Gosalind Springs Water Master Plan
- Hyde Park Culinary Water Master Plan and Modeling
- Laketown Water Master Plan
- Plymouth Water Study
- Portage Town Water Master Plan
- White City Water Master Plan Update

WATER

- Bear Lake Water Co. PRV Vault Design
- Bloomington Water Improvements
- Diamond Hills Water System
- Fish Haven Pipeline Water Line Upgrades
- Georgetown Waterline Extension
- Glenrock, WY Water System Improvements
- Gosalind Springs Water Works Co. Water System Improvements
- Herriman Culinary Water Improvements
- Laketown Water Improvements
- Newton Water Conservation Plan
- Plymouth Water System Upgrades
- Portage Water Improvement

WATER TRANSMISSION LINES

- Hyde Park 12" Post Office Well Transmission Line
- Bear Lake Water Company 2016 Distribution Improvements
- Herriman City 16" Transmission Line
- Portage 12 " Transmission Line
- Hyde Park 12" Canyon Transmission Line

EDUCATION

BS - Civil Engineering, Utah State University

YEARS IN PROFESSION

29; 29 with Sunrise

REGISTRATIONS

Registered Professional Engineer:
UT #334535
ID #10488
WY #9488

MEMBERSHIPS

American Society of Civil Engineers

AREAS OF EXPERTISE

Hydrologic Analysis
City Engineering/Site Engineering
Water Rights & Water Quality
Roadway Design
Culinary/Storm Drainage/Irrigation Systems
Wastewater Systems/Collection/ Treatment

Robert Worley, PE

Robert has 24 years of engineering experience which includes master plans, impact fee analyses, wastewater treatment plants, wastewater lift stations, sewer collection, culinary water treatment plants, culinary water pump stations, and water and wastewater capital facilities plans. He has been involved with many of these projects from planning, funding, design, and permitting to construction management. He has managed over 25 water and wastewater projects.

Robert will apply his knowledge, expertise, and overall care to ensure that the quality of this project as well as any assigned through the on-call contract meet the standards, budget, and quality of service which Sunrise Engineering is known for.

Principal-in-Charge

EXPERIENCE

WASTEWATER MASTER PLANS & STUDIES

- Delta City Wastewater Master Plan
- Fillmore City Wastewater Master Plan
- GWSSA Wastewater Treatment Feasibility Analysis
- Ephraim City Wastewater Master Plan
- Big Park Wastewater Treatment Feasibility Study
- Salina City Wastewater Master Plan
- Mt. Green Wastewater Master Plan
- Pine Bluffs Wastewater Treatment Lagoons Evaluation
- Victor Wastewater Treatment Feasibility Study

WASTEWATER

- Fairview Lift Station
- Willard/Perry Lift Station
- Centerfield Lift Station
- Provo Westside Lift Station
- Spanish Fork Regional Sewer Lift Station
- Eureka City Wastewater Improvements
- Manti Sewer Lagoon Upgrades
- Spanish Fork West Interchange Sewer Project
- Garland Wastewater Treatment Plant
- Stockton Wastewater Collection System
- Fillmore City Sewer System Upgrades

WATER TREATMENT

- Ogden Water Treatment Plant - 13.0 MGD
- Garden Water Treatment - 3.0 MGD
- Greendale Water Treatment - 0.25 MGD
- Gunnison Water Treatment Plant - 1.5 MGD
- Springdale Water Treatment Plant - 0.5 MGD
- Monroe Water Treatment Plant - 0.3 MGD
- Deseret Oasis Water Treatment Plant - 1.5 MGD
- Mt. Pleasant Water Treatment Plant PER & EA

WASTEWATER TREATMENT

- Fairview City Wastewater Treatment Plant - 0.375 MGD
- Willard Parry Wastewater Treatment Plant - 2.0 MGD
- Big Park Wastewater Treatment Plant - 0.65 MGD
- John Kuhni Industrial Wastewater Treatment Plant- 0.1 MGD
- Garland Wastewater Treatment Facility
- Mountan Green Wastewater Treatment Plant - 1.5 MGD
- Mountain Pass Utility Company Wastewater Treatment Plant - 0.5 MGD
- Manti Wastewater Lagoon Rehab
- Stockton Town Wastewater Lagoons
- Eloy City Belt Press
- Payson Fruit Growers Pre-Treatment Facility - 0.1 MGD

WATER MASTER PLANS & STUDIES

- Stockton Town Water Master Plan
- Brianhead Water Master Plan
- Centerfield Water Master Plan Update
- Fillmore City Water Master Plan
- Goshen Town Water Master Plan
- Gunnison Water Master Plan
- Holden Water Master Plan
- Keyenta Water Master Plan
- Loa Water Master Plan
- Lynndyl Water Master Plan
- Manti Water Master Plan Update
- Milford Water Master Plan
- Monroe City Water Master Plan
- Nephi City Water Master Plan
- Spanish Fork Covered Bridge Water Master Plan
- Springdale Water Master Plan Update
- Sterling Town Water Master Plan Update
- Tridell-Lapoint Water Master Plan
- Washington Water Master Plan Update

EDUCATION
BS - Civil Engineering, Utah State University

YEARS IN PROFESSION
24; 24 with Sunrise

REGISTRATIONS
Registered Professional Engineer:
UT #375477
ID #13336
AZ #375477
NV #019698
CO #43670

CERTIFICATIONS
Water Environment Federation (WEF)

Spencer Berezay, EIT

Spencer is an engineer-in-training with experience supporting municipal infrastructure, land development, and public works projects in northern Utah and western Wyoming. At Sunrise, he assists with the preparation of construction plans, preliminary engineering studies, environmental documentation, and design reports for projects requiring compliance with state and federal regulations. His experience includes utilizing Civil 3D to prepare plan sets, supporting city engineering development review and inspection services for Providence City, construction administration for Providence City, and assisting canal companies in Cache Valley to secure federal and state funding assistance to reduce project cost burdens.

Prior to joining Sunrise, Spencer worked with Jorgensen Associates in Jackson, Wyoming, where he supported water system and site development projects through well testing, data analysis, construction observation, and field surveying. His experience also includes assisting in geotechnical investigations including percolation testing and borehole exploration. Earlier experience in the construction industry with JH Builders provided hands-on exposure to project coordination, quantity takeoffs, plan review, subcontractor management, and construction practices. This combined engineering and construction background provides him with a practical understanding of project delivery from planning and design through construction.

Project Administration

EDUCATION
BS - Civil Engineering, University of Wyoming

YEARS IN PROFESSION
4; 1 with Sunrise

REGISTRATIONS
Engineer-in-Training:
WY #EI 7009

EXPERIENCE

PROJECT EXPERIENCE

- 1200 South Gravity Sanitary Sewer Improvements
- Berry Hollow Storm Water Improvements
- Birch Creek Water Improvements
- Corinne City Wastewater Collection & Treatment
- Gossner Foods Retail Store Site Development
- Hyde Park Northern Canal Phase II
- Logan Providence 1200S Sewer
- Lower Family Foods General Engineering
- Monument Holdings General Engineering Services
- Nibley City Culinary Well & Tank
- North Logan 4 MG Tank & Well Project
- North Logan BST South & Powerline Trail Waterline Extension
- North Logan General Engineering
- North Logan Water Asset Management Plan
- Northern Cities Water Supply & Interconnect Feasibility Study
- Plymouth General Engineering Services
- Providence Blackstone HWY 165 Improvements
- Providence City 100 South Road Widening
- Providence City General Development Engineering Services
- Providence City General On-Call Services
- Providence Mountain Well House
- Providence Peterson Sewer Extension Plan
- Rattlesnake Hill 4.0 MG Tank Project
- Swan Lake Culinary Water Facility Plan
- WCIC Master Plan & Optimization
- West Cache Irrigation Co. General Engineering
- Wolf Pack Way/Bobcat Way

PREVIOUS EMPLOYMENT EXPERIENCE

- Wyoming Game & Fish Employee Housing Development
    - Well testing, construction staking
- Wyoming Game & Fish Wildlife Crossing
    - Field geotechnical investigation
- Jackson Hole Airport
    - Well testing
- Snake River Sporting Club
    - PRV installation observation

Travis Kenworthy, PE

Travis's experience comes from designing water and wastewater equipment for municipal, industrial, and mining applications. He has extensive experience leading water and wastewater treatment plant projects involving clarifiers, sedimentation, and water flow systems. His expertise spans mechanical, electrical, structural, and process design elements. Travis's multi-disciplinary skill sets make him valuable for his ability to effectively coordinate between the varied engineering groups and ensure that all aspects of a project are in sync between disciplines. His collaborative approach and technical proficiency have enabled successful project outcomes in multiple industries.

Mechanical Lead

EXPERIENCE

SUNRISE EXPERIENCE

- Eloy Wastewater Treatment Plant
- GHID Pleasant Valley Wastewater Pump Station Replacement
- Loa Fish Hatchery
- Wanship Water Improvements Project
- Mt. Green Wastewater Treatment Plant
- Payson Fruit Growers Wastewater Treatment Plant
- Saddlebrook Wastewater Treatment Plant
- Manti Water Treatment Plant
- Provo Wastewater Treatment Plant Asset Management Plan
- Victor Wastewater Treatment Plant Facility Plan
- Cedar Fort Water Improvement

PREVIOUS TREATMENT DESIGN EXPERIENCE

- Tulsa Northside Wastewater Treatment Plant, OK
- New Haven, East Shore Water Treatment Plant, CT
- City of Berlin Water Treatment Plant, NH
- Sni-A-Bar Wastewater Treatment Plant, Blue Springs, MO
- Palo Alto Wastewater Treatment Plant, CA
- New Milford Sewer Plant, CT
- St. Joseph Water Protection Plant, MO
- Independence Wastewater Treatment Plant, MO
- EMR Homer City Power Water Treatment Plant, PA
- Duke Energy - Cliffside Water Treatment Plant, NC
- Koch Fertilizer Plant Water Treatment Plant, Wever IA
- First Energy Power Plant Water Treatment Plant, WV
- Planta Norte Wastewater Treatment Plant, Mexico

PREVIOUS MINE TREATMENT/SOLIDS HANDLING EXPERIENCE

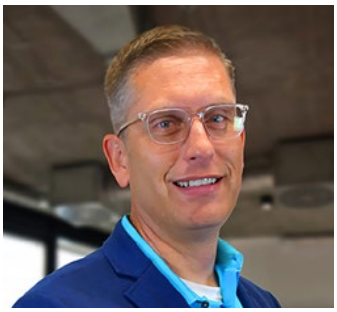
- Barrick Gold Mine Solids Handling, NV
- Two Rivers Platinum Mine, South Africa
- Goose Lake Gold Mine, Nunavut Canada
- Vale Viga Iron Mine, Brazil
- Jindal Steel, India
- Navachab Gold Mine, Namibia
- Polyus Gold Mine, Russia
- Cadia Gold Mine, Australia
- Kestral Coal Mine, Australia
- Ramco Plant, Australia
- Iluka Plant, Australia
- Madsen Mine, Canada
- Vale Moatize Coal Mine, Mozambique
- Ambatovy Nickel Mine, Madagascar

EDUCATION
BS & MS - Mechanical Engineering, Brigham Young University

YEARS IN PROFESSION
18; 1 with Sunrise

REGISTRATIONS
Registered Professional Engineer:
UT #9444310-2202
NV #029387
ID # 9371355
CO # 00067620

MEMBERSHIPS
Weber State University Industry Advisory Board
Water Environment Federation (WEF)
American Water Works Association (AWWA)



Parry Osborn, PE

Hazen Lead

Parry has over 16 years of experience in the wastewater, water, industrial water, and reuse water industries. In his professional career, Parry has managed many different wastewater, water, and infrastructure projects. He has worked with small municipalities and large utilities as well as industrial clients to design wastewater, water, and industrial water treatment systems.

Education

MS, Civil & Environmental Engineering/Structural Engineering, Utah State University, Logan, UT, 2010

BS, Civil & Environmental Engineering, Utah State University, Logan, UT, 2009

Certification/License

Professional Engineer: UT

Areas of Expertise

- Wastewater treatment
- Process equipment design and integration
- Structural engineering
- Pipelines/pump stations

Experience

- 16 total years
- 5 years with Hazen

Professional Activities

American Water Works Association (AWWA)

American Society of Civil Engineers (ASCE)

Water Environment Federation (WEF)

Water Environment Association of Utah (WEAU)

Moroni Wastewater Treatment Plant Masterplan, Moroni City, UT
Design Manager. Parry served as the Hazen lead and teamed with Sunrise Engineering to evaluate Moroni's existing WWTP. The plant is an MBR plant that was built in the 1970's and has undergone multiple upgrades. Hazen was the process lead in evaluateing the process from raw water screening through the biological process and through the biosolids handling processes. Recommendations were provided to increase plant capacity and meet new discharge permit requirements.

Payson WWTP Upgrade & Expansion, Payson City, UT
Design Manager. Parry served as the process mechanical engineer of the tertiary filtration, UV disinfection, and Odor Control processes. The project includes designing a new wastewater treatment plant on the existing site while keeping the original plant operational. The plant currently treats an average daily flow of 2.67 mgd, the plant will be designed to treat 4.1 mgd with the new design peak design flow of 8.2 mgd.

Orem WRF Biosolids Expansion Project, Orem, UT
Project Manager/Structural Engineer. Parry served as the Project manager and structural engineer for this biosolids expansion project. Orem needed to add additional capacity to their existing biosolids dewatering process. The building was designed for a third unit, but the exact dewatering belt presses are not made any more. The design included reconfiguring the building to accommodate a new screw press, piping, valves, structural design, and electrical and controls to integrate the new equipment into the existing system. The building space was limited and detailed construction sequencing had to be considered during the design.

1012-856

Hazen

SUNRISE ENGINEERING

Parry Osborn, PE

Winrock On-Site Resource Recovery Plant, Albuquerque Bernalillo County Water Utility Authority, Albuquerque, NM
Project Engineer for the design and construction of a 25,000 gpd membrane treatment facility to scalp raw sewage and generate reclaimed water to meet the New Mexico Environment Department Class 1A water quality requirement. The facility includes a diversion structure, influent lift station, screening, biological treatment, membrane filtration, onsite hypochlorite generation, and odor control with allowances to expand to 50,000 gpd in the future. Total constructed value $3.5 million.

Cottonwood-Mingus Ave. WWTP Improvements, Cottonwood, AZ
Structural Engineer. Parry served as the structural engineer for the design to expand two existing concrete basins to add an additional 20' to each. The existing basins were built under different code requirements, so considerations had to be made to accommodate new design standards and additional design considerations for environmental structures. Parry also helped with the design of new piping throughout the plant. This retrofit project presented several unique challenges during the design. Additionally, plant processes needed to remain in operation during construction, so sequencing became an important aspect of the design as well.

Aspen Consolidated Sanitation District Disc Filter and Ultraviolet Design, Aspen, CO
Technical Advisor/QC Reviewer for the replacement of the tertiary filter and UV systems at the Aspen Sanitation District's 3 mgd Water Reclamation Facility. The project included evaluation of disc filter technologies, and pre-selection of the equipment that best fit Aspen's needs. The project also included the replacement and expansion of the UV disinfection system and the addition of a waste backwash water pump system to return the backwash waste to the head of the plant.

PREVIOUS EMPLOYMENT EXPERIENCE WITH SUNRISE ENGINEERING

Carterville Lift Station, Orem City, UT
Project Manager. Orem City needed a design to replace their lift station. The existing site is in a low-lying area of the City that has problems with overflows in the past. There is little emergency storage at the current lift station. The new design reuses the existing lift station's wet well and dry pit as additional emergency storage.

Springwater Lift Station, Orem City, UT
Project Manager. Due to growth in the southwest side of the City there is a need for a new lift station to take the additional flows from new planned development. The new lift station intercepts a trunkline that currently goes to an older lift station that is at capacity to remove a substantial flow from that lift station.

Kelley Florence, PE

Process Lead

Kelley has 10 years of experience in planning, design, and construction services in the water and wastewater industry. Her experience includes treatment plant expansion planning, optimization, and design. She has specific expertise in treatment plant sampling, modeling, data analysis, and alternatives evaluation.

Education

BSCE, Virginia Tech, 2016

Certification/License

Professional Engineer: KY, CO

Areas of Expertise

- Wastewater conveyance system design
- Wastewater treatment analysis
- Master planning

Experience

- 10 total years
- 10 years with Hazen

Professional Activities

American Waterworks Association

- 2025 Conference Technical Committee Member

Water Environment Federation (WEF)

- MEGA (Modeling Expert Group of the Americas) Committee Member

Frankfort E.C. McManis WWTP Expansion, Frankfort Sewer Department, Frankfort, KY

Process Lead and Assistant PM. Facility plan for the expansion of a 9 MGD WWTP. The flow and load projection over a 20-year planning period included significant growth due in industrial changes in the collection system. The project included historical data review, detailed field sampling, influent characterization, calibration of a BioWin model, and an alternatives evaluation.

Western Regional WRF Facilities Plan, Montgomery County Environmental Services, Montgomery County, OH

Project services include development of a facility plan for Western Regional WRF in Montgomery County, OH, with a specific focus on the plant's two stages of Clari-Vac clarifiers, aeration blowers, aerobic digesters, and plant automation. Process Lead. Tasks included compilation and analysis of plant historical data, review of vertical asset management plan data, writing of technical memorandums, site visits and operator interviews, design criteria development, and aeration blower design and siting.

North Secondary Upgrades and Intensification, Metro Water Recovery, Denver, CO

Process Engineer. Focused on the update and validation of the Robert W. Hite Treatment Facility (RWHTF) and the Aeration Basin 2 Pilot process models. Modeling goals were to determine capacity and develop design criteria necessary to meet the planning and regulatory drivers for a 20-year planning period. Performed process modeling evaluations in BioWin for both RWHTF and AB2, historical data review, and design criteria development.

Kelley Florence, PE

Aeration Evaluation Preliminary Engineering Report and Detailed Design, Fairfield, OH

Process Mechanical Lead for the evaluation and design of activated sludge improvements for the 10-mgd WWTP. The evaluation used historical data review, BioWin model calibration, and projected load and limits to recommend a pathway of expansion, process changes like the addition of a selector, and operational changes to meet future loads and limits. The project included the replacement of blower, diffusers, modulating valves for air flow control, and a new above ground air header.

Troy Aeration Evaluation Preliminary Engineering Report and Detailed Design, City of Troy, OH

Project Engineer for the WWTP capacity evaluation and aeration evaluation. A calibrated model was developed in BioWin after reviewing historical data and influent characterization. The process model showed the 7-mgd WWTP nearing capacity, so an expansion evaluation was completed. Several scenarios were evaluated for expansion accounting for both future flow and loads as well as future nutrient removal limits. Recommendations on expansion trigger points and initial design configurations were developed. Recommendations included the addition of a selector to improve settling and gain capacity along with the addition of tank volume. In conjunction with determining expansion needs, an aeration evaluation was performed to identify the most cost-effective combination of blower and diffusers for replacement. The project included renovation of two existing aeration basins and the construction of one new aeration basin to include an anaerobic selector and the design of new blowers, diffusers, mixers, and air piping. Additionally, the design included significant construction sequencing and plant operations coordination.

Peru Utilities WWTP Preliminary Engineering Report, Peru Utilities, IN

Process Modeling Lead for the evaluation of the WWTP. The project included historical data review, detailed field sampling, influent characterization, and calibration of a BioWin model. The WWTP has an annual average flow of 5 mgd, and process flow through a series of vertical loop reactors. The calibrated model was used to evaluate capacity gains from operational and infrastructure improvements. A preliminary engineering report was developed in accordance with state revolving fund requirements and provided to state agencies for review.

Rock Xu

Project Engineer

Rock Xu is a Process and Chemical Engineer with extensive academic and industry experience in strategically planning, designing, and testing innovative process concepts to drive scientific advancement and tackle complex challenges. His expertise combines creativity, science, and cutting-edge technology with solid engineering principles to solve intricate problems.

Education

PhD, Chemical Engineering, University of Chinese Academy of Sciences, 2012

M.S., Chemical Engineering, Tianjin University, 2008

B.S., Chemical Engineering, China University of Petroleum, 2006

Certification/License

Professional Engineer: ID, OR, TX

Areas of Expertise

- Water and wastewater treatment
- Process design and management
- Technical advice and process evaluation
- Applied research – Lab-Pilot-Full

Experience

- 17 total years
- 1 year with Hazen

Professional Activities

American Water Works Association – Biological Treatment Committee

PRIOR TO HAZEN

Caldwell WWTP Improvements, Caldwell, ID

Facility Planning Study Lead. Directed the Facility Planning Study (FPS), utilizing Biowin and hydraulics modeling to optimize Enhanced Biological Phosphorus Removal (EBPR) by Ferric and ALUM and the tertiary filtration system for total phosphorus (TP) removal, achieving reductions in both capital and chemical costs. Directed the team on population and load projections, the Capital Improvement Program (CIP), and the evaluation of treatment processes, solids dewatering and drying, along with improvement alternatives.

Aberdeen WWTP Improvements, Aberdeen, ID

PER & Design Lead. Led the Preliminary Engineering Report (PER) including process unit evaluation, Integrated Fixed-Film Activated Sludge (IFAS) alternative analysis, and CIP. Optimized Biowin and hydraulics modeling for TP removal, and coordinated the design of the headworks, IFAS, tertiary pump station, filtration and ALUM dosing system.

Star WWTP Improvements, Star, ID

PER Lead. Led the PER and enhanced Biowin and hydraulic modeling for the MBR system, including alternatives for fine screens and solids dewatering. This involved refining process simulations for both the existing MBR setup and future expansion, increasing the accuracy of hydraulic models, and pinpointing optimization opportunities to improve overall system performance and reliability.

Aurora WWTP Improvements, Aurora, OR

Design Manager. Oversaw and coordinated the design of key components with internal and external teams, including Headworks, Sequencing Batch Reactor (SBR), Lift Station, Storage Lagoon, UV, and Sludge Dewatering and Polymer Dosing System.

Rock Xu

Technical Publications

L Xu, Y Huang. A novel layered double hydroxide coupled with zero valent iron system for selenate removal under anaerobic condition: batch and continuous studies. Chemical Engineering Journal, 2019.

L Xu, Y Huang. A simple and novel method to enhance As (V) removal by zero valent iron and activated iron media through air injection at intervals. Chemosphere, 2019

L Xu, Y Huang. Kinetics and mechanism of selenite reduction by zero valent iron under anaerobic condition activated and enhanced by dissolved Fe (II). Science of The Total Environment, 2019.

L Xu, M Luo, C Jiang, X Wei, P Kong, X Liang, J Zhao... In vitro reduction of hexavalent chromium by cytoplasmic fractions of Pannonibacter phragmitetus LSSE-09 under aerobic and anaerobic conditions. Applied Biochemistry and Biotechnology, 2012.

L Xu, L Yang, M Luo, X Liang, X Wei, J Zhao, H Liu. Reduction of hexavalent chromium by Pannonibacter phragmitetus LSSE-09 coated with polyethylenimine-functionalized magnetic nanoparticles under alkaline conditions. Journal of hazardous materials, 2011.

L Xu, M Luo, L Yang, X Wei, X Lin, H Liu. Encapsulation of Pannonibacter phragmitetus LSSE-09 in alginate–carboxymethyl cellulose capsules for reduction of hexavalent chromium under alkaline conditions. Journal of industrial microbiology and biotechnology, 2011.

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Juliaetta WWTP Improvements, Aberdeen, ID
PER Lead. Optimized modeling for BOD and TSS removal, and coordinated the design of the headworks, aeration basin, chlorine contactor, and effluent chiller system.

Independence Greenfield WTP Project, Independence, OR
Design Manager and Technical Lead. Provided technical advice for process evaluation based on raw water quality and led the preliminary design for a new greenfield 2 MGD WTP including chemical design incorporating alum, polymer and sodium hypochlorite.

Sandy WTP Expansion Project, Sandy, OR
Water Treatment Technical Lead. Led process team for a 3 MGD surface water membrane filtration (MF) system preliminary design used to produce potable water. Design includes chemical pretreatment and corrosion control for post-treatment including CIP system. Chemical system design includes sodium hypochlorite, sodium hydroxide, sodium bisulfite, citric acid, poly aluminum chloride (PACl) and soda ash.

Michael Bundy, PE

Technical Advisor

Michael is an environmental engineer with 25 years of project experience in the water and wastewater industry. His experience encompasses water and wastewater treatment process design and facility master planning, pump station design, and construction management. Most of Michael's career has focused on treatment facility planning anf process design for both new and existing treatment facilities.

Education

MS, Civil & Environmental Engineering, Utah State University

BS, Environmental Engineering, Utah State University

Certification/License

Professional Engineer: ID, ND, CA

Areas of Expertise

- Water treatment
- Wastewater treatment
- Mechanical dewatering
- Chemical feed systems
- Ozone
- Pump stations
- Facility planning
- Construction management

Experience

- 25 total years
- 2 years with Hazen

Professional Activities

Water Environment Federation (WEF)

American Water Works Association (AWWA)

Upper Wallkill Nitrate Upgrade Design Services, Sussex County Municipal Utilities Authority, NJ

Technical Advisor and Construction Sequencing Planning. The project included planning, preliminary engineering, and design to identify the best alternative for plant expansion to meet more stringent nitrogen limits while maintaining the plant's 3.0 mgd capacity. During the Engineering Report phase, Hazen vetted multiple alternatives for the major plant processes to determine the optimal technology selections. This included evaluation of various process intensification technologies to determine if construction of a fourth aeration basin could be avoided; ultimately, the AquaNereda ® granular sludge system was selected. An overall plant assessment identified the need to upgrade various treatment processes, including the influent screens, aerated grit tank, equalization tank, primary clarifier, biological treatment process, secondary clarifier, disk filters, UV disinfection, chemical systems, septage receiving station, thickening systems, service water system, and service building.

Quail Creek Water Treatment Plant Expansion and Ozone Addition, Washington County Water Conservancy District, St. George, UT

Technical Advisor. The project included planning, predesign and design services to expand the treatment plant from 60 mgd to 90 mgd. Planning including a detailed analysis of many different options for plant improvements to meet future flow demands and potential regulatory requirements. The preliminary engineering phase refined the approach for expansion, including keeping the plant operational during construction. The design included the expansion of the chemical systems, pretreatment, filtration, UV, and residuals handling facilities as well as the addition of ozone.

1012-856

Hazen

Michael Bundy, PE

Technical Publications

Whynman, D., Bundy, M., Hugaboom, D., and Mayer, N. Responding to Unexpected Issues at the Startup of Baker WTP. Proceedings of the American Membrane Technology Association/American Water Works Association Membrane Technology Conference and Exposition, 2018

Bundy, M., Doucette, W., McNeill, L., and Ericson, J., Removal of Pharmaceuticals and Related Compounds by a Bench-scale Drinking Water Treatment System. Journal of Water Supply: Research and Technology – AQUA, 2007

Bundy, M., Design and Test of a Bench Scale Drinking Water Treatment Plant for the Evaluation of Pharmaceutical Fate, Thesis, 2003

West Boise WRF Near Term Improvements Project, City of Boise, ID
Project Engineer. Michael assisted in identifying immediate improvements at the reclamation facility to assist operations with meeting current flow and treatment requirements. Some of the recommendations included improvements to the backup generator system, chemical feed systems, monitoring systems, and aeration blowers. Michael led the efforts to improve the chemical feed system to optimize phosphorus removal. In addition, Michael assisted with planning and design of improvements to add nitrogen and phosphorus monitoring equipment and developing control strategies for increasing chemical phosphorus removal and biological ammonia removal.

Wastewater Treatment Plant Clarifiers Condition Assessment and Rehabilitation, City of Twin Falls, ID
Project Manager. Michael led the efforts to perform a condition assessment of structural, mechanical, and electrical components on two primary clarifiers and two secondary clarifiers that were 40 – 50 years old. The project included performing field observations to assess the condition of both equipment and structures. The assessment included identification of project improvements and criticality of each improvement. The condition assessment determined the clarifiers could be rehabilitated and the project proceeded through preliminary engineering and final design.

West Boise WRF Standby Generation Project, City of Boise, ID
Design Manager. Michael managed the preparation of a basis of design report and preliminary design for a standby generator facility. The project considers many options for standby generation. Advantages and disadvantages of each option were weighed, and a business case evaluation was performed to determine the best alternative. Detailed design criteria were established and facility layouts were prepared for the recommended alternative.

Weber West Water Campus Project, Weber Basin Water Conservancy District, Layton, UT
Design Manager. The project included planning and design of two new greenfield treatment facilities. The Renew Plant is a 10 MGD reuse facility that will treat tertiary wastewater for seasonal storage in Willard Bay. The Water Treatment Plant is a 10 MGD advanced water treatment plant that will initially be used to seasonally treat water from Willard Bay for drinking water. Both facilities are being designed to accommodate expansion to 20 MGD.

Fee Proposal

WATER RECLAMATION FACILITY MASTER PLAN

Hyrum City | May 29, 2026

SUNRISE ENGINEERING Hazen

SUNRISE ENGINEERING

2100 North Main Street, North Logan, UT 84341
TEL 435.563.3734 | **FAX** 435.563.6097

May 29, 2026

Angela Pritchett, Water Reclamation Manager
Todd Perkins, Financial Administrator
Hyrum City
60 West Main
Hyrum, UT 84319

RE: Hyrum City Water Reclamation Facility Master Plan

Dear Selection Committee,

Our project budget and fee approach has been developed to provide Hyrum City with the evaluations and recommendations needed to support informed, long-term decisions for the future of the Water Reclamation Facility while remaining mindful of project costs.

The Sunrise/Hazen Team proposes to complete this work on a time and expense basis, with a not-to-exceed fee of $274,951, ensuring that costs are controlled and will not exceed this amount without city authorization.

Sunrise's and Hazen's rates are noted in the man-hour estimate on the following page in the Hourly Billing Rate row. On the last page, for reference - if needed, we have also included a more detailed fee schedule for Sunrise.

Our proposed budget includes the effort necessary to evaluate each major component of the existing WRF and develop practical, prioritized recommendations consistent with the scope requested in the RFP. We recognize the importance of balancing technical evaluation with affordability, particularly for long-term capital planning. Our approach is intended to provide meaningful analysis and actionable recommendations without unnecessary study costs.

One additional service that could provide further value to the city is the development of a calibrated biological process model using BioWin software. While this effort is not included in our proposed fee, it could help optimize process performance, operational strategies, and future facility footprint requirements. Importantly, the proposed master planning scope is complete without this task, and the city could elect to add this effort later if desired.

Our team is committed to working collaboratively with Hyrum City to ensure the scope, deliverables, and level of evaluation align with the city's goals, priorities, and budget considerations. If desired, we would welcome the opportunity to discuss options for refining or prioritizing elements of the scope to best meet the city's needs.

The Sunrise/Hazen team combines local responsiveness and personalized service with national wastewater planning and treatment expertise. We are excited about the opportunity to work alongside Hyrum City to develop practical, cost-conscious recommendations that support reliable operations and the long-term future of the WRF.

Sincerely,

Scott Archibald, PE
Principal Engineer
435.213.4448
sarchibald@sunrise-eng.com

EXHIBIT A

Man-hour Estimate/Summary of Costs

Hyrum City Water Reclamation Facility Master Plan

Hyrum, Utah

Phase	Task	Work Task Description	Robert W Principal Engineer	Travis K Engineer V	Scott A Engineer V	William K Engineer Intern (E.I.T.) II	Spencer Engineer Intern (E.I.T.)	Parry O Principal Engineer	Kelley F Senior Engineer	Rock X Senior Engineer	Michael B Principal Engineer	Sean N Principal Cost Estimator	Anna R Assistant Engineer I	Direct Costs	Mileage	(hours)	($)
0001		Engineering Report Update															$46,972
	001	Site Visit	8	8	5		4	10		12	8			$700	681	55	$14,427
	002	Gather and Evaluate Existing Information							2	10			20			32	$5,800
	003	Provide calculations to determine biological capacity of plant							10	30			60			100	$18,300
	004	Prepare Memo						5	5	10	2		20			42	$8,445
0002		Master Plan															$176,093
	001	Condition Assessment	9.5	36		120	20									185.5	$28,523
	002	Current and projected flow and loadings	1	8		7	3		2	2			2			25	$4,425
	003	Document current and potential regulatory requirements	4	6		15		4		2	2					33	$6,415
	004	Assess performance and capacity under current and projected conditions		7		40		4	10	45			90			196	$34,205
	005	Develop recommended improvements and prepare EOPC	6	32		60		2	10	50		75	100			335	$60,570
	006	Prepare 20 Year CIP	2	10		20				10	2		20			64	$11,180
	007	Prepare Impact Fee Facility Plan and summary of all findings		20		60		5		20			40			145	$24,150
	008	QAQC	5						10		10					25	$6,625
0003		Project Management															$51,887
	001	On Site Workshops (5 meetings) (Kickoff included in Phase 1)	10.5	24.5	15.5		10.5	14	3	6	3		4.5		520	91.5	$19,929
	002	Project Administration (Monthly updates, coordination)	6	12	6	6	24	8								62	$11,340
	003	Project Management and Internal Coordination		36	6			31		15				$150	225	88	$20,618
0004		Alternate Tasks															$0
	001	Prepare Calibrated BioWin Model															TBD
Sub-total Hours/Miles/Days			52	199.5	32.5	328	61.5	83	52	212	27	75	356.5	850	1426	1479	
Hourly Billing Rate			$255	$200	$200	$135	$135	$270	$225	$235	$310	$200	$150	1.1	$0.70		
Total Dollars			$13,260	$39,900	$6,500	$44,280	$8,303	$22,410	$11,700	$49,820	$8,370	$15,000	$53,475	$935	$998	$ 274,951	
																TOTAL	$274,951

Sunrise Fee Schedule

Work Classification	Hourly Rate	Work Classification	Hourly Rate
Administrative I	$78	Electrical Project Manager II	$215
Administrative II	$98	Electrical Project Manager III	$230
Administrative III	$116	Construction Observer I	$109
Administrative IV	$138	Construction Observer II	$132
Technical Editor	$90	Construction Observer III	$146
Funding Specialist	$159	Construction Observer IV	$168
Civil Engineering Intern	$110	Construction Observer V	$189
Civil EIT I	$125	Project Manager I	$171
Civil EIT II	$135	Project Manager II	$184
Civil EIT III	$154	Project Manager III	$195
Civil Engineer III	$185	Project Manager IV	$213
Civil Engineer IV	$196	Project Manager V	$244
Civil Engineer V	$200	Plan Reviewer	$110
Civil Engineer VI	$214	Building Inspector III	$96
Civil Engineer VII	$229	Building Official	$210
Senior Civil Engineer	$243	GIS Tech	$94
Principal Civil Engineer	$255	GIS Senior Tech	$115
Civil Engineering Tech I	$101	GIS Analyst	$140
Civil Engineering Tech II	$114	GIS Senior Analyst	$165
Civil Engineering Tech III	$133	GIS Developer	$182
Civil Engineering Tech IV	$148	GIS Team Lead	$188
Civil Engineering Tech V	$164	Planner I	$132
CAD Drafter I	$102	Planner II	$148
CAD Drafter II	$122	Planner III	$164
CAD/Designer III	$136	Planner IV	$180
CAD/Designer IV	$151	Planner V	$196
CAD/Designer V	$169	Planning Manager	$212
Electrical Engineering Intern	$106	PI Specialist I	$118
Electrical EIT I	$143	PI Specialist II	$129
Electrical EIT II	$161	PI Specialist III	$141
Electrical Engineer III	$182	PI Specialist IV	$153
Electrical Engineer IV	$209	PI Manager	$165
Electrical Engineer V	$231	PI Director	$177
Principal Electrical Engineer	$254	Survey Tech	$99
Electrical Engineering Tech I	$110	Survey CAD Tech	$145
Electrical Engineering Tech II	$128	Survey Manager	$196
Electrical Engineering Tech III	$149	Registered Surveyor	$212
Electrical Engineering Tech IV	$165	Principal Surveyor	$234
Electrical Engineering Tech V	$182	One Man Survey Crew	$172
Electrical Project Manager I	$185		

REIMBURSABLE EXPENSE SCHEDULE*

Expense	Rate
Mileage	$0.70/Mile
Per Diem	$59/Day
Field Vehicle (On-Site)	$250/Day
UTV (On-Site)	$200/Day
Nuclear Density Gauge	$150/Day

*Fees automatically change after the beginning of each year and are subject to change on other occasions.
*Subconsultant and other direct expenses will be invoiced as cost incurred plus 15% handling fee.
*A convenience fee of 4% will be applied to all payments made with a credit card.
SE 2026 06-2026

Proposal for:

Hyrum City

May 29, 2026

Hyrum City WRF Master Plan - Fee Proposal

J-U-B FAMILY OF COMPANIES

THE LANGDON GROUP

J-U-B

J-U-B ENGINEERS, INC.

GATEWAY MAPPING INC.

Itemized Fee Schedule /Anticipated Work Effort by Personnel

Task Number	Subtask Number	Task/Subtask Name	**Christina Osborn -** *Program Manager*	**Gary Vance -** *Program Manager*	**Paul Willardson -** *Project Manager*	**Katie Reams -** *Project Engineer, Lead*	**Braden Wilding -** *Project Designer*	**Makena Swensen -** *Assistant Designer*	**Jamie Holt -** *Project Accountant*	**Katie Halland -** *Document Specialist*	**Totals**
			$251/hr	**$251/hr**	**$230/hr**	**$214/hr**	**$144/hr**	**$91/hr**	**$114/hr**	**$91/hr**	
010	**Project Management**		**32.5**	**0**	**4**	**17**	**13**	**5**	**4.5**	**0**	**$15,900**
	001	Project Administration	16.5	0	0	1	1	1	4.5	0	$5,100
	002	Meetings*	16	0	4	16	12	4	0	0	$10,800
020	**Engineering Report Update**		**7.5**	**2**	**0**	**15**	**22**	**38**	**0**	**0**	**$12,200**
	001	Engineering Report Update	7	2	0	14	20	38	0	0	$11,600
	002	Regulatory Coordination	0.5	0	0	1	2	0	0	0	$600
030	**Master Plan Update**		**48**	**18**	**0**	**80**	**145**	**280**	**0**	**4**	**$80,500**
	001	Existing Conditions	10.5	4	0	19	36	70	0	0	$19,300
	002	Permit Conditions	4	3	0	6	8	14	0	0	$5,500
	003	Existing Treatment Evaluation	13.5	4	0	25	46	90	0	0	$24,600
	004	Develop Improvement Alternatives	10.5	3	0	19	35	68	0	0	$18,700
	005	Capital Improvement Plan	7.5	2	0	9	16	30	0	0	$9,300
	006	Report Production	2	2	0	2	4	8	0	4	$3,100
040	**Impact Fee Facilities Plan**		**6**	**2**	**0**	**6**	**10**	**10**	**0**	**0**	**$5,600**
	001	Impact Fee Facilities Plan	6	2	0	6	10	10	0	0	$5,600
		Total Hours:	**94**	**22**	**4**	**118**	**190**	**333**	**4.5**	**4**	

Not to Exceed Total Cost: $114,200

** This includes $300 of reimbursable expenses for mileage.*

Thank You!

J-U-B FAMILY OF COMPANIES

THE LANGDON GROUP

J-U-B ENGINEERS, INC.

GATEWAY MAPPING INC.

Proposal for:

Hyrum City

May 29, 2026

Hyrum City Water Reclamation Facility Master Plan

J-U-B FAMILY OF COMPANIES

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HELPING EACH OTHER
CREATE BETTER COMMUNITIES

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THE LANGDON GROUP | J-U-B ENGINEERS, INC. | GATEWAY MAPPING INC.

May 29, 2026

Angela Pritchett
Hyrum City Water Reclamation Manager
60 West Main
Hyrum, Utah 84319

RE: Proposal for Hyrum City Water Reclamation Facility (WRF) Master Plan

Dear Ms. Pritchett and the Selection Committee,

Hyrum City is at a pivotal point. Rapid growth is outpacing previous projections, the WRF is approaching capacity, and the Utah Division of Water Quality (DWQ) requires an updated engineering report (ER) to resolve discrepancies in the facility's biochemical oxygen demand (BOD) and total suspended solids (TSS) loading capacity. The time to plan is now and the engineering team you select must be ready to deliver on day one.

J-U-B ENGINEERS, Inc. (J-U-B) understands the urgency: a non-negotiable one-month ER update followed by a comprehensive seven-month master plan that positions Hyrum City, and Millville City, for responsible, fundable growth over the next 20 years. Our team brings a uniquely aligned combination of membrane bioreactor (MBR) process experience, master planning depth, and a collaborative, operator-focused approach built for a facility and community like yours.

Why J-U-B is the right fit for Hyrum City:

- **MBR knowledge grounded in facilities like yours.** Our team has designed, optimized, and delivered multiple MBR facilities across the Intermountain West, including the award-winning Spanish Fork and Mapleton WRF (commissioned Fall 2025). We understand Kubota membrane systems, cold-weather flux limitations, aeration optimization, and the operational realities of running an MBR plant at capacity – the exact challenges your facility faces today.
- **A master plan built to fund, and plan.** Your master plan must identify improvements, so that it can be a road map for future planning. It must also support an impact fee facilities plan (IFFP) and rate study that positions Hyrum City to fund those improvements responsibly. J-U-B has dedicated infrastructure funding specialists who have helped Utah communities secure over **$1B in grants and loans** through DWQ, Capital Improvement Budget, Community Development Block Grant, and other state and federal programs. We will connect every capital improvement plan (CIP) recommendation directly to a viable funding pathway.
- **Workshops designed for your team.** The four key workshops outlined in this RFP are not check boxes for us – they are the backbone of our approach. We prioritize responsiveness, accessibility, and open communication with your WRF staff and city leadership. Our milestone-driven workshop process uses clear visualizations of proposed improvements so your operators and decision-makers can shape the plan collaboratively.
- **Ready to deliver the ER on your timeline.** We have already identified the data and analysis required to complete the ER update per UAC R317 3 7.2 within the one-month deadline. Our team is prepared to begin immediately upon contract signing, with the process modeling capability and regulatory knowledge to resolve the DWQ discrepancy efficiently and accurately.

1047 South 100 West, Suite 180
Logan, UT 84321

- **Right-size for your community.** We are an employee-owned firm with deep roots in Utah's communities and an office in Logan City. Our proposed team is led by experienced professionals who have delivered master plans for municipalities of similar scale and complexity in the same region. We know the issues and concerns facing facilities like yours, and we have the relationships with DWQ staff to help resolve those issues. You will work directly with the people who lead your project.
- **Relevant Experience.** J-U-B has worked with many of our clients to optimize chemical usage, including switching to polyaluminum chloride or rare earth metals to decrease chemical usage and expense. J-U-B has successfully implemented process modifications to promote biological phosphorus removal and reduce or eliminate chemical usage.

Hyrum City deserves an engineering partner that treats this master plan as what it is: the roadmap for your community's infrastructure future. We are committed to delivering a plan that is technically sound, operationally practical, and financially actionable – on time and within budget. We look forward to collaborating with Hyrum City.

Other potential services that we can add include funding assistance and a review of the structures by a structural engineer and of the engineering, controls, and instrumentation by an electrical engineer.

Should you have any questions regarding this proposal, please contact me at 801-750-4769 or cosborn@jub.com.

Sincerely,

J-U-B ENGINEERS, Inc.

Christina Osborn, PE
PROJECT MANAGER
801-750-4769 | cosborn@jub.com

Chris Slater, PE
PROJECT PRINCIPAL
435-760-6968 | cslater@jub.com

J-U-B is comfortable with using the Hyrum City Engineering Services Agreement as-is or we have a Standard Agreement available for use as well.

Firm's Experience

J-U-B is an employee-owned professional services firm focused on improving the quality of life for communities where we live and work. We provide high quality planning, engineering, and surveying services, with experience in land use, transportation, municipal, funding, and infrastructure design.

MORE THAN 72 YEARS OF RESPONSIVE, RELIABLE, REGIONAL SERVICE

J-U-B has been serving the Intermountain West since 1954. Headquartered in Meridian, Idaho, J-U-B has more than 560+ employees and 23 offices throughout Idaho, Utah, Washington, Nevada, Oregon, Colorado, and Wyoming. We are proud of our work in our local communities that count on us to support their efforts to become even more desirable places to live.

J-U-B's Office Locations

72 YRS WORKING FOR CLIENTS

560 EMPLOYEES

#222 ENR'S 2025TOP 500 DESIGN FIRMS

23 OFFICES IN 7 STATES

Our Subsidiaries

THE LANGDON GROUP Founded in 1997, The Langdon Group (TLG) helps engage the public on complex infrastructure projects. For more than 20 years, TLG has provided public involvement, facilitation, mediation, conflict management, and strategic visioning services. TLG staff are certified by the International Association of Public Participation.

GATEWAY MAPPING INC. Since 1991, Gateway Mapping, Inc. (GMI) has developed customized solutions to improve efficiency, reduce costs, answer critical questions, and deliver better results. GMI offers GIS planning and implementation, infrastructure and asset management, parcel mapping, training, software and web/mobile application development, map production, and records management.

Project Team's Past Performance on Similar Local Projects

Wastewater Collection System and Treatment System Master Plans Richmond, UT (2015-2025)

Richmond's 0.5 MGD wastewater treatment plant (WWTP) is 20 years old. J-U-B prepared a WWMP evaluating the existing MBR facility for current/future capacity as well as age/condition impacts, redundancy, permit compliance, and process optimization. To accommodate future capacity, the facility's existing lagoons were evaluated for continued use for sludge holding and processing and for effluent storage and land application. Upgrade recommendations include improved flow monitoring, screening, redundant biological system pumping, increased MBR membrane capacity, redesigned aeration and blower system, and a new ultraviolet (UV) disinfection system. J-U-B updated the sewer collection system master plan, including the city's GIS data, existing/future flows, and CIP projects. J-U-B created a new model in AquaTwin and ran future scenarios to identify capacity concerns.

Why is this relevant to Hyrum? Richmond is a neighboring facility that also uses Kubota flat-plate membranes. They are also looking at expansion due to growth, upgrades, and process optimization. J-U-B recently completed master planning for Richmond.

Team: Christina Osborn, *Project Manager (PM)* | Katie Reams, *Project Engineer (PE)* | Braden Wilding, *PE Assistant*

Wastewater Master Plan (WWMP) and Membrane Bioreactor WRF Design/ Construction | *Spanish Fork and Mapleton, UT* (2019-2025)

J-U-B led the development of treatment alternatives, analysis, cost opinions, the 2020 WWMP, and design to support phased improvements at a new greenfield location. The design paired advanced biological treatment with membrane filtration and UV disinfection. The 6.65 MGD facility meets current and future permit limits and consistently achieves total inorganic nitrogen (TIN) below 5 mg/L and total phosphorus below 0.2 mg/L without chemical addition. The project finished on time and $3.6M below the guaranteed maximum price.

Why is this relevant to Hyrum? J-U-B completed master planning in 2020 and the construction of this MBR facility in 2025. The plant is fully operational. From this experience, J-U-B can offer the latest ideas in MBR optimization.

Team: Gary Vance, *PM* | Christina Osborn, *PE* | Katie Reams, *PE* | Makena Swensen, *PE Assistant* | Braden Wilding, *PE Assistant*

WWMP and WRF Improvement Projects | *Tooele, UT* (2021-Current)

J-U-B has partnered with Tooele City on a series of WRF improvements. In 2023, work included rehabilitation of an aging secondary clarifier, and upgrades to the oxidation ditch, solids handling systems, dewatering building, and reuse pump station. The 2024 WWMP established a roadmap for phased improvements and funding over the next 20 years. More recently, a new headworks facility was completed with screening and grit removal sized for peak hour flows up to 12 MGD. Design is also complete for biosolids process upgrades, including a new solar dryer, and UV system, with construction anticipated in 2026. All improvements have focused on cost-effective solutions that make use of existing infrastructure and maximize the use of impact fees.

Why is this relevant to Hyrum? J-U-B has been working with Tooele City for the last several years on implementing the roadmap of projects developed as part of the collaborative master planning process. Tooele also produces Type I water for irrigation.

Team: Gary Vance, *PM* | Katie Reams, *PE*

Master Plan and Membrane Bioreactor WRF Design/Construction | *Santaquin, UT* (2007-Current)

J-U-B partnered with Santaquin City to deliver a WRF using MBR technology to create a new irrigation water source. The new facility reuses 100% of its effluent for residential irrigation. This 1.5 GD facility includes biological nutrient removal (BNR), MBRs, and UV disinfection, and reliably achieves effluent TIN between 6–8 mg/L.

For this plant, J-U-B has completed a 2009 wastewater master plan, 2011 design, 2013 construction, 2019 Phase 2 capacity upgrades, 2023 capacity evaluations, and 2025 Phase 3 improvements design. Phase 3 is currently under construction.

Why is this relevant to Hyrum? Similar to Hyrum, Santaquin both uses MBR and creates Type I effluent for reuse in the city's pressure irrigation system. J-U-B has been working on master planning and design upgrades with the city at their wastewater facilities since 2007. The roadmap J-U-B developed as part of the 2009 Master Plan has been implemented and updated over the years in a collaborative process.

Team: Gary Vance, *PM* | Christina Osborn, *PE* | Katie Reams, *PE*

Miscellaneous WRF Improvement Projects | *Central Davis Sewer District (CDSD)* (2000-Current)

J-U-B has supported CDSD's 10 MGD facility extensively for over 25 years. Our work includes headworks screening, a new dewatering building, compost facility improvements, public works building, dry pit sewer lift stations, and large sewer trunk lines. In 2024, J-U-B completed construction of a combined dry pit sewer lift station and composting equipment storage building, all housed in a red barn motif to blend into the surroundings. J-U-B is currently finalizing the design of a new dry pit sewer lift station, and designing a new electrical building along with anaerobic digester rehabilitation and a new cover.

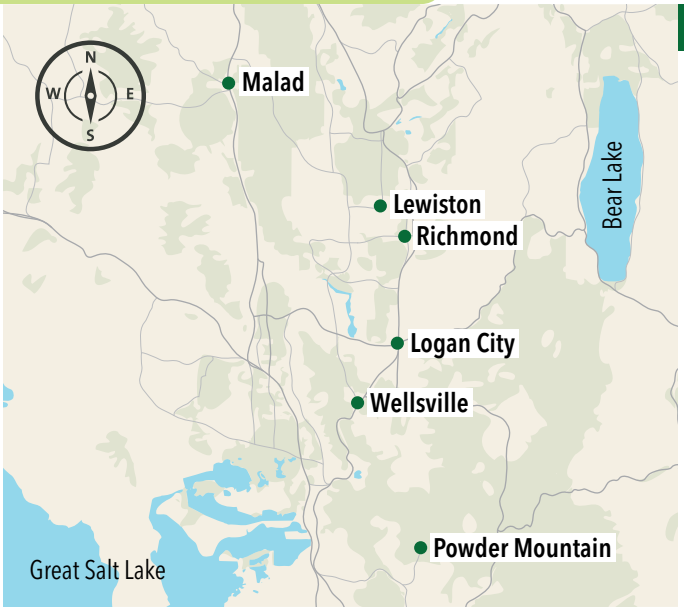
Why is this relevant to Hyrum? J-U-B has a 20+ year history of working with CDSD on projects large and small.

Team: Gary Vance, *PM* | Katie Reams, *PE*

Project Matrix – J-U-B Wastewater Treatment Master Plan/Design Experience

Dates, Project, Client and Location	Flow (MGD)	Master Plan/Basis of Design Report	Influent Lift Station / Headworks Improvements	BNR	Membrane Systems	Solids Handling/ Dewatering Improvements	Relevant Project Elements
2019-2025, Spanish Fork WRF, Spanish Fork, UT	8.0	✓	✓	✓	✓	✓	New MBR facility designed for stringent nutrient limits, solids handling retrofit, new headworks building with grit removal, WWMP & BODR
2007-Ongoing, Santaquin WRF, Santaquin, UT	1.5	✓	✓	✓	✓	✓	New BNR & MBR trains, upgrade to Veolia ZW500EV membranes, solids handling improvements, WWMP & BODR
2021-Ongoing, Tooele WRF, Tooele, UT	3.5	✓	✓	✓		✓	Solar dryer with heated floor retrofit to produce Class A Biosolids (in design), UV upgrades, solids handling (2022), new headworks building with grit removal (2025), WWMP
2005-Ongoing, Post Falls WRF, Post Falls, ID	5.2	✓	✓	✓	✓	✓	Solids handling evaluation & improvements (in design), dewatering building expansion, BNR & tertiary membrane filtration, & Class A UV disinfection (2024)
2025-Ongoing, Eastern Idaho Regional Sewer District, Oxbow MBR, Shelley, ID	4.0	✓	✓	✓	✓	✓	BNR & MBR expansion to improve nutrient removal performance and increase plant capacity
2021-Ongoing, Blackfoot WWTP, Blackfoot, ID	2.7	✓	✓	✓		✓	Thickening and dewatering design (ongoing), evaluation of tech for OM goals, WWMP, solids handling upgrades, new headworks, grit removal, UV expansion, & aeration upgrades (2021)
2000-Ongoing, Central Davis Sewer District, Kaysville, UT	10		✓			✓	New dewatering facility & equipment, comparative alternatives analysis, new plant drain lift station, influent lift station, & composting equipment building, headworks screen evaluation

Cache Valley Area Projects



WASTEWATER PROJECTS

Logan City
- Biosolids pads.

Malad
- Improvements (headworks, lagoon aeration) to the existing WWT system.

Powder Mountain
- Facilities planning (lagoons) to meet growth pressure.

Lewiston
- Facilities planning (lagoons and land application) to meet phosphorus limits imposed by the Cub River TMDL.

Richmond
- Facilities planning (MBR) to meet low phosphorus limits; headworks upgrades; operation.

Wellsville
- Facilities planning (lagoons and land application) to meet phosphorus limits imposed by the Little Bear River TMDL.

Proposed Project Team

Organizational Chart

Christina Osborn, PE
Project Manager

Paul Willardson, PE
Client Manager

Gary Vance, PE
Quality Assurance/Quality Control

Katie Reams, PE
Project Engineer

Braden Wilding, EIT
Engineering Support

Makena Swensen, EIT
Engineering Support

= Key team member, bio is included below. Resumes for all team members are included in the appendix.

Team Member Bios

Christina Osborn, PE

Project Manager | 22 Yrs Exp. | Responsibilities: Will work closely with Hyrum City for facility evaluation, design, and lifecycle management through the master plan development.

Christina is a seasoned water and wastewater engineer with experience in planning, permitting, designing, and operating treatment facilities, water reclamation systems, and collection infrastructure. She has supported numerous communities throughout Utah and Idaho with master plans, facility evaluations, engineering studies, design packages, and construction services.

Why Christina? Christina's experience spans the full project lifecycle. Christina has evaluated existing facilities, assessed capacity and condition, identified system deficiencies, and developed cost effective solutions to address growth, regulatory requirements, and operational needs. She has worked closely with state and federal permitting and funding agencies, and understands how to navigate approvals, documentation, environmental requirements, and funding pathways. She brings a practical understanding of how to move projects efficiently from early study phases through design and into construction. She has worked on 20+ master plans throughout her career. Christina has been discussing WRF master planning with Angela since 2023, and previously worked with her to secure funding from DWQ for it.

Paul Willardson, PE

Client Manager | 19 Yrs Exp. | Responsibilities: Coordinates closely, setting priorities and communicating clearly between Hyrum City and J-U-B staff to meet project needs.

Paul has 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 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.

Why Paul? Since 2016, Paul has been involved with many projects in Hyrum City. From stormwater inspections, to sidewalk and waterline designs, Paul understands how things work in Hyrum and has a great relationship with Hyrum City staff.

Gary Vance, PE

Quality Assurance/Quality Control | 23 Yrs Exp. | Responsibilities: Reviews client-provided data and J-U-B plans for accuracy and quality.

Gary has experience in master planning, funding, permitting, designing, constructing, and managing treatment facility projects. He has in-depth knowledge of all aspects of treatment facility projects, and has extensive design experience as the lead engineer for various treatment processes and is familiar with the needs of growing communities in an increasingly strict regulatory environment.

Why Gary? Gary has prepared more than 15 wastewater facility plans in recent years for communities across Utah and Idaho. He understands the challenges faced by growing communities operating in an increasingly stringent regulatory environment and has led the planning, design, and construction administration of numerous WWTPs throughout the Intermountain West. His experience includes MBR facilities in Spanish Fork and Santaquin, Utah and Filer, Idaho, as well as an advanced industrial MBR treatment system for a yogurt production facility in Colorado.

Katie Reams, PE

Project Engineer | 13 Yrs Exp. | Responsibilities: Will work closely with Christina to prepare the master plan report.

Katie is a water and wastewater project engineer and design manager with experience in the design, implementation and management of complex water and wastewater projects for treatment, mechanical process piping, chemical dosing systems, sewer lift stations, master planning, and construction administration. She has worked with numerous municipalities across the country designing wastewater treatment facilities, ground water treatment facilities, and conveyance systems.

Why Katie? In the past five years, Katie has completed six master plans. Her leadership on water and wastewater treatment improvements, both regionally and nationally, demonstrates her versatility and commitment to client success. She has been working with several Cache Valley communities on WRF master planning, so she is attuned to the unique challenges of operating a WRF in Cache Valley and she has great relationships with DWQ to help navigate complex issues.

References

Richmond, UT

HollyJo Karren, City Administrator

435-258-2092 | hkarren@richmondutah.gov

Project Relevance/Ask About? Recent WWMP with Christina, Katie and Braden, J-U-B's long history of working with the city, and our ongoing support of improvements at the WWTP.

Santaquin, UT

Jason Callaway, Public Works Director

801-420-3033 | JCallaway@santaquin.gov

Project Relevance/Ask About? Past and recent improvements at an MBR facility, master plans as a roadmap for future improvements, working with Gary, Katie, and Christina, and the city's long history of working with Santaquin for 20+ years.

Central Davis Sewer District

Jill Jones, Manager

801-451-2190 | jillj@cdsewerut.gov

Project Relevance/Ask About? J-U-B's long history of working with CDSD and working with Gary and Katie on multiple projects.

Spanish Fork, UT

Zac Staheli, Wastewater Division Manager

801-358-5044 | zstaheli@spanishfork.gov

Project Relevance/Ask About? The recent experience with master planning and then constructing a new MBR facility with J-U-B and working with Gary, Christina, Katie, and Makena.

Granger-Hunter Sewer District

Todd Marti, Assistant General Manager

801-968-3551 | t.marti@ghid.gov

Project Relevance/Ask About? Working with Christina on multiple projects the last several years as project manager from planning, to design, and construction.

Project Understanding and Approach

Project Understanding

Hyrum City is seeking qualified engineering services to complete an updated ER and a comprehensive WRF master plan that will support regulatory compliance and guide future infrastructure planning. The WRF currently serves Hyrum City and the adjacent community of Millville, with an average daily flow of approximately 1.5 MGD and a design capacity recently expanded to 2.0 MGD.

Based on continued regional growth and the addition of flows from Millville, the facility is approaching its functional capacity. This trend, combined with evolving regulatory requirements, creates a critical need for a current, defensible understanding of the plant's treatment capacity and a clear, implementable strategy for future improvements.

A primary driver of this project is the requirement from the Utah DWQ to reconcile discrepancies between historical design criteria and the 2020 ER. As a result, Hyrum City must prepare an updated ER that establishes the facility's BOD and TSS loading capacity in accordance with applicable regulatory standards. The required delivery timeline for this report, within one month of contract execution, is fixed and essential for maintaining compliance with DWQ requirements.

Beyond the immediate regulatory need, Hyrum City requires a master plan that evaluates existing infrastructure, defines available treatment capacity, and identifies practical, cost-effective improvements to accommodate future growth over a 20-year planning horizon. This includes development of flow and loading projections, evaluation of treatment processes and support systems, identification of capacity and condition limitations, and preparation of a prioritized CIP. The master plan will also support financial planning through development of an IFFP.

This project requires a disciplined and integrated approach that delivers timely regulatory documentation while providing a clear and actionable roadmap to support long-term system performance, regulatory compliance, and community growth.

Approach

Project Coordination

J-U-B's approach is structured to meet the project's accelerated schedule for the ER while advancing the master plan through a coordinated, technically rigorous planning process. The approach integrates data-driven evaluation, regulatory alignment, and collaborative engagement with city staff to develop recommendations that are both technically sound and implementable. The goal is the development of a road map for the future.

Upon receiving a notice to proceed, J-U-B will begin a 3-phase process to:

1. Evaluate the existing conditions and WRF.
2. Develop project alternatives to address deficiencies.
3. Define the project implementation schedule.

The scope and PM will guide the project to support an efficient process, stay on schedule and within budget, and meet all project objectives. Coordination will include monthly calls between J-U-B and plant staff and workshops at key intervals to review findings and gather input from the city: planning conditions evaluation (flows and loads), treatment system evaluation, project alternatives development, and CIP recommendations. Our day-to-day interaction with you will be with Christina Osborn as your primary point of contact.

Quality Assurance (QA) and Risk Management

To provide quality project management and manage potential risks we will follow these proven steps:

- Conduct regular internal team meetings to review completed and projected tasks, maintain project goals and priorities, and address any quality control assignments.
- Actively engage team members as project issues arise, adopt responses, and make assignments to address issues before they become problems.
- Conduct regular QA audits by senior J-U-B personnel.
- Complete regular oversight reviews of the project to provide consistency with the city's project goals and budget.

Cost and Schedule Control Measures

We utilize other project management tools, specifically related to schedule and cost, to deliver our projects on time and within budget. This includes:

- Implementing a detailed project schedule highlighting critical path tasks tied to the project scope. This supports early identification of potentially lingering tasks, allowing the project team to develop and implement necessary mitigation strategies.
- Utilizing accounting software to track project costs weekly by work scope task and tied to the schedule.
- Delivering timely invoices and regular communication.

J-U-B's experience working with Hyrum City and the other Cache Valley communities has resulted in a deep understanding of the essential tasks and milestones necessary to arrive at a successful master plan. We have developed a phased approach that is tailored to your specific needs and will result in a functional and accessible plan that captures the vision of the city, serves as a roadmap for the future, and is in accordance with current State of Utah requirements.

Proposed Scope of Work and Deliverables

This scope of services below will result in a new WRF master plan that accomplishes the following objectives:

- Establish current and projected flows and loads for a 20-year planning period using population projections based on estimates provided for the Cities of Hyrum and Millville.
- Document permit requirements and identify potential long-term permit issues for tracking.
- Evaluate the existing plant unit process capacity, condition, redundancy, and performance under current and projected conditions.
- Develop recommended improvements to maintain a proper level of service and comply with known and anticipated discharge limits.
- Establish a 20-year CIP, the service roadmap.
- Inform the upcoming Impact Fee and Rate study with an IFFP of upcoming Wastewater Facility Improvements necessary to accommodate growth (IFA by others).

1. ER Update (Task 020)

a. Subtask -001: ER Update

J-U-B will initiate the project with a focused and accelerated effort to complete the ER within the required timeframe. This effort will leverage existing documentation, including the 2020 ER, and incorporate current operational data to resolve identified discrepancies. The evaluation will include:

i. Verification and analysis of influent flow and loading data, including BOD and TSS.
ii. Update the aeration calculations and determine the revised plant load based on the firm capacity of the blowers.
iii. Evaluation of process performance and limiting factors within the MBR system.
iv. Application of applicable regulatory criteria, including UAC requirements.
v. Address Hyrum and DWQ comments.
vi. Produce a final ER Update.

b. Subtask -002: Regulatory Coordination

i. One virtual coordination meeting with DWQ.

J-U-B will coordinate closely with Hyrum City staff throughout this effort to confirm assumptions, validate findings, and align with DWQ's expectations. The resulting ER will provide a clear, defensible evaluation of the facility's treatment capacity and satisfy regulatory requirements.

2. Master Plan Update (Task 030)

a. Planning Conditions Evaluation (Subtask -001)

J-U-B will develop current and projected flows and loads over a 20-year planning period using growth projections provided by the Cities of Hyrum and Millville.

This task will include:

- Establishment of planning criteria for average and peak conditions.
- Development of flow and load projections for the planning horizon.
- This information will provide the technical basis for evaluating alternatives.

i. Prepare an outline project schedule and summary of the organization of the study.
ii. Provide facility background and history.
iii. Define the project study boundary including the treatment facility and existing service area. Provide vicinity and site maps for the existing WRF.
iv. Compile influent flow/load data for the previous five calendar years for both

Hyrum, Millville and significant/major industrial dischargers.

v. Incorporate population projections from previous studies. Growth rate to be used for projections to be selected by city.

vi. Provide overall flow and load (BOD5, TSS, TKN, and total phosphorus) projections at the selected growth rate for the 20-year planning period for average and peak conditions.

vii. Incorporate input from Hyrum City during the planning conditions evaluation workshop.

b. Regulatory Review (Subtask -002)

This information will provide for recommended improvements that are aligned with both current and future requirements.

This task will include:

- Documentation of current permit requirements and applicable regulatory framework.
- Identification of potential future regulatory considerations that may influence facility planning.

i. Identify known and anticipated permit conditions by reviewing the existing and draft UPDES permit.

ii. Summarize the current impairments identified in the TMDL for the receiving water that affect the current permit.

iii. Establish permit conditions for evaluation in the planning period.

iv. Summarize potential long-term UPDES permit modifications that may impact the existing treatment process.

c. Treatment System Evaluation (Subtask -003)

Following completion of the ER, J-U-B will expand the analysis to evaluate the condition, capacity, redundancy and performance of the WRF as a whole. This evaluation will consider all major treatment processes and support systems, including headworks, primary and secondary treatment, membrane systems, disinfection, and solids handling.

The objective of this task is to define the facility's current operating condition, identify performance limitations, and determine the remaining treatment capacity within the existing infrastructure.

The evaluation will also identify opportunities for optimization that may extend capacity or improve operational efficiency without significant capital investment.

i. Conduct one site visit/workshop with Hyrum City and WRF operations staff to review current operations, observed deficiencies, planned maintenance and upgrades, and potential bottlenecks for all major unit processes. The site visit will be conducted as part of the kick-off meeting. Create a facility overview.

ii. For each of the main WRF unit processes—liquid stream, solids stream and support facilities, provide a brief description, summarize available design criteria based on historic information, submittals, O&M manuals, and record drawings, and list design and/or operational deficiencies as identified by operations staff and observed during the site visit. Coordinate with vendors/manufacturers, as needed, to understand the capacity. Identify redundancy and firm capacity. Compare the actual performance and operational criteria for each unit process against design criteria and/or established guidelines, including permit requirements for treatment facilities.

iii. Compile process operational and effluent data for the previous five calendar years to establish the prevailing operational conditions and performance at the plant and identify any extraordinary or unusual operational conditions that have occurred, e.g. permit exceedances, peak/wet weather flows and etc. Summarize historical performance of the facility and the ability to comply with existing permit limits over the past five years.

iv. Summarize current and projected loading versus estimated capacity (on a percentage basis) on a process-by-process basis based on the evaluation noted in the preceding items to understand the hydraulic and BOD loading capacity.

v. Summarize the assessment of the main WRF unit processes into the following four categories: redundancy, condition/age, capacity, and performance/optimization. Evaluate the risk of each of the deficiencies at the WRF.

d. Project Alternatives Development (Subtask -004)

Based on the findings from the capacity evaluation and projections, J-U-B will develop and evaluate feasible alternatives to address identified limitations and accommodate future growth. These may include operational modifications, process

optimization, phased expansions, and long-term capital improvements. Alternatives will be evaluated at a planning level with consideration of:

- Ability to meet projected capacity and regulatory requirements
- Compatibility with existing infrastructure and site constraints
- Operational complexity and reliability
- Planning-level capital and lifecycle costs

J-U-B will work collaboratively with Hyrum City to refine and prioritize recommended improvements, ensuring alignment with city goals and available resources.

i. Summarize 20-year planning period conditions based on content developed in preceding subtasks.
ii. No-Action Alternative – Evaluate the impact to the facility if no improvements are made within the 20-year planning window.
iii. Identify, for the main WRF unit processes, improvements needed to address existing deficiencies (capacity, condition and age, redundancy and performance) and accommodate projected growth based on 20-year projected flows and loads, permit compliance, and process optimization.
iv. Develop a process schematic and planning-level exhibits of improvement alternatives.
v. Develop a planning-level cost opinion for recommended improvements.
vi. Incorporate recommendations and project improvement alternatives selection from the workshop with Hyrum City.

e. Capital Improvement Plan Recommendations (Subtask -005)

Recommended project improvements will be incorporated into a 20-year CIP that establishes project priorities and risk, implementation timing, and planning-level cost estimates.

i. Identify project priorities, risks, and key milestones for implementing the preferred improvement alternatives.
ii. Develop a phasing plan for the preferred projects based on implementing improvements in 0-5 years, 5-10 years, and 20 years.
iii. Finalize cost opinions based on the 10-year project list.

f. Report Production (Subtask -006)

i. Prepare and final quality control of the draft master plan.
ii. Prepare and final quality control of the final master plan.
1) Deliverables: WRF Master Plan Report – draft and final.

3. Financial Planning Support (Task 040)

In addition, J-U-B will prepare an IFFP to support the city's future impact fee and rate studies. This work will provide a clear linkage between projected growth, required infrastructure improvements, and funding strategies.

a. Subtask -001: Impact Fee Facilities Plan

i. Prepare the IFFP based on the conclusions in the master plan.
ii. Coordinate with Zions Bank Public Finance on the Impact Fee Analysis.

4. Project Management and Coordination (Task 010)

J-U-B understands the importance of consistent communication and proactive project management. The project team will provide:

- Monthly progress updates and schedule tracking
- Coordination and facilitation of key workshops and milestone meetings
- Ongoing collaboration with city staff to support informed decision-making
- Preparation and presentation of the draft master plan to city council

Workshops outlined in the RFP will be used as structured decision points to confirm assumptions, review findings, and guide development of recommendations throughout the planning process.

a. Subtask -001: Project Administration

i. Set up project in accounting software.
ii. Monitor and report project status, budget and schedule.
iii. Oversee project tasks and coordinate with Hyrum City representatives to manage the scope, schedule, budget, and work plan for the engineering phase.
iv. Invoices will be prepared and submitted to Hyrum City monthly and will reflect work accomplished during the billing period.
v. Ongoing document handling and filing.
vi. Communicate and coordinate J-U-B team activities.
vii. Project close out.

b. Subtask -002: Meetings

i. Site Kickoff Meeting – Meet with city personnel to conduct a project kickoff, site

walkthrough, discuss existing equipment condition, known process capacity constraints, and concerns with redundancy and risk.

ii. Planning Conditions Evaluation Workshop – Meet with city personnel to go over the results of the flows and loads analysis.

iii. Treatment System Evaluation Workshop – Meet with city personnel to discuss the existing system evaluation.

iv. Project Alternatives Development Workshop – Review potential projects with the city and modify as necessary.

v. CIP Recommendations Workshop – Meet with city personnel to present screening level treatment alternatives based on data results. Discuss recommended improvements, project phasing, priorities, risks, cost opinions, and develop a capital improvements plan project list.

vi. City Council Presentation - Presentation of the draft master plan to the City Council.

1) Assumptions: All meetings to be conducted virtually, except in-person kickoff/onsite evaluation conducted at Hyrum City's offices and the city council presentation.

2) Deliverables: Monthly invoices, meeting minutes.

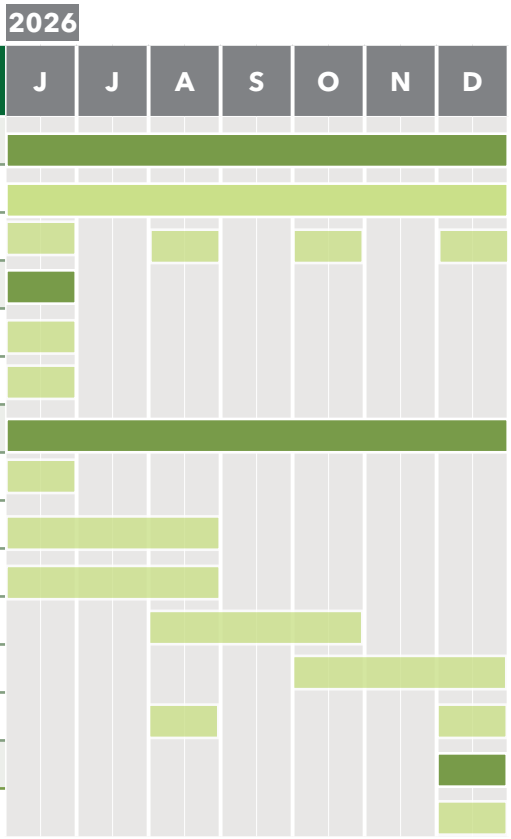
Summary

J-U-B's approach is designed to provide Hyrum City with a clear understanding of existing facility capacity, a defensible ER that meets regulatory requirements, and a practical, implementable master plan. By combining technical rigor, efficient project delivery, and collaborative engagement, J-U-B will support the city in making informed decisions to maintain reliable service, achieve regulatory compliance, and plan for future growth.

Schedule and Availability

Schedule

Task	Sub-Task	Task/Subtask Name
010	**Project Management**	
	001	Project Administration
	002	Meetings
020	**Engineering Report Update**	
	001	Engineering Report Update
	002	Regulatory Coordination
030	**Master Plan Update**	
	001	Planning Conditions Evaluation
	002	Regulatory Review
	003	Treatment System Evaluation
	004	Project Alternatives Development
	005	Capital Improvement Plan Recommendations
	006	Report Production
040	**Financial Planning Support**	
	001	Impact Fee Facilities Plan



Availability

- Christina Osborn, PE - 50%
- Paul Willardson, PE - 50%
- Gary Vance, PE - 20%
- Katie Reams, PE - 50%
- Makena Swensen, EIT - 75%
- Braden Wilding, EIT - 75%

Our staff has recently completed two master plans and are ready to hit the ground running and available to meet the Hyrum City project needs.

Resumes

Christina Osborn, PE

Project Manager

EXPERIENCE
22 Years

REGISTRATION
UT PE, 7279342

EDUCATION
MS, Environmental Engineering

Christina has more than 22 years of experience with planning, permitting, designing, and operating water, WWTPs, WRF projects, waterlines and sewerlines. She is currently a senior PE and PM in the Salt Lake City office. She has completed water and wastewater planning documents, studies and designs for many communities throughout Utah and Idaho. Christina excels in her ability to assess existing infrastructure and treatment systems, determine their condition and capacity, and identify solutions through a thorough and analytical approach. She has worked with funding and permitting agencies and can apply her experience to make the planning, design, and construction processes efficient.

MECHANICAL WASTEWATER MASTER PLANNING

- **Wastewater Utility Plan; American Samoa Power Authority, American Samoa (2025)** *PM.* Evaluated the collection (three) and treatment systems (two), proposed project improvements, and developed a schedule of improvements with costs.
- **Secondary Treatment Feasibility Study; American Samoa Power Authority, American Samoa (2025)** *PM.* Evaluated the modifications needed to provide secondary treatment and nutrient removal facilities at a regional, expanded WWTP.
- **Wastewater Master Plan; Fallon, NV (2024)** *PM.* Evaluated the treatment system (SBR), proposed project improvements, and developed a schedule of improvements with costs.
- **Wastewater Master Plan; Richmond, UT (2025)** *PM.* Evaluated modifications needed at their existing MBR and lagoon facilities to become a regional WWTP.
- **Wastewater Master Plan; Santaquin, UT (2022, 2014, 2008)** *PE.* Evaluated multiple options for moving the community from lagoons to mechanical treatment. After lots of collaboration with city leaders and the community, MBR was selected as the treatment technology. Also investigated multiple locations within the city and many solids and liquids disposal options.
- **Wastewater Master Plan; Intermountain Power Service Corporation, Delta, UT (2019)** *PM.* Finalizing the wastewater master plan for IPSC. Provided a low-cost solution (lagoons) to replace an aging and unused WWTP.
- **Wastewater Master Plan; Coalville, UT (2011)** *PE.* Evaluated multiple options that eventually led to moving the WWTP to a new location and constructing an activated sludge facility.

Christina Osborn, PE

Project Manager

LAGOON WASTEWATER MASTER PLANNING

- **Wastewater Lagoon Master Plans; Various Locations (Various Dates)** *PE.* Evaluated wastewater treatment options as part of putting together a master plan, per requirements. The plans included evaluating existing lagoons, defining demands, developing alternatives with costs and recommending an alternative.
  - *Wellsville, UT (2025, 2008)*
  - *Richmond, UT (2024)*
  - *Morgan, UT (2017, 2008)*
  - *Tabiona, UT (2015, 2008)*
  - *Glenns Ferry, ID (2014, 2008)*
  - *Lewiston, UT (2009)*
  - *Murtaugh, ID (2009)*
  - *Wendell, ID (2008)*
  - *Santaquin, UT (2008)*

WASTEWATER DESIGN

- **WRF; Santaquin, UT (2024, 2014)** *PE.* Investigated, analyzed, and produced drawings, reports and costs for the following elements of a 1.4 mgd MBR WRF: modification of an existing influent pump station, non-potable water pump station, open channel UV disinfection system, and reclaimed water pump station.
- **WRF; Spanish Fork, UT (2023)** *PE.* Investigated, analyzed, and produced drawings, reports and costs for the following elements: aeration, non-potable water system, and backend metering and monitoring.
- **Wastewater Treatment Facility; Coalville, UT (2015)** *PE.* Investigated, analyzed, and produced drawings, reports and costs for the following elements of a 1.5 mgd wastewater treatment facility: secondary clarifiers, return activated sludge pumps, open channel UV disinfection system, reaeration system, and non-potable water pump station.
- **WRF Upgrades; Richmond, UT (2014)** *PM and PE.* Managed the design and construction of a new grit removal system in front of the MBR treatment system.
- **WWTP; Buhl, ID (2013)** *PE.* Investigated, analyzed, designed, and produced drawings, reports, specifications and costs for an influent pump station and a non-potable plant water pump station.
- **WWTP Upgrades; Morgan, UT (2012)** *PE.* Designed the following modifications at an existing lagoon wastewater treatment facility: installation of a dechlorination system using sodium bisulfite and a reaeration system using fine bubble tube diffusers.

Paul Willardson, PE

Client Manager

EXPERIENCE
19 Years

REGISTRATION
UT PE, 87381450
UDOT CEMT
RSI
IQP Level 1

EDUCATION
BS, Civil Engineering

Paul has 19 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 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.

Since 2016, Paul has been involved with many projects in Hyrum City. From stormwater inspections, to sidewalk and waterline designs, Paul understands how things work in Hyrum and has a great relationship with Hyrum City staff.

HYRUM CITY EXPERIENCE

- **Hyrum City General Engineering; Hyrum City Corp, Hyrum, UT (2023-Current)** *PM.* Paul oversees the general engineering and design tasks as requested by Hyrum City. These include utility inspections, sidewalk and drainage designs, and other various tasks requested by the staff.
- **Hyrum Canyon Parking Lot Project; Hyrum City Corp, Hyrum, UT (2024-Current)** *PM.* Paul oversaw the design of the parking lot improvements and the design of a new curb wall. Coordination with the city and UDOT was a key part of this project to make sure the needs of Hyrum city were achieved while coordinating with the state.
- **Hyrum 300 South Sidewalk Project; Hyrum City Corp,Hyrum, UT (2020-2021)** *Client Manager.* J-U-B assisted in applying for and receiving funding for 4 blocks of sidewalk along 300 S providing a safer route to schools for pedestrians and connecting existing travel corridors. After the city received the funding J-U-B designed the project and provided public involvement and construction management support. Paul was an integral part of each step of the project and was involved in the process from inception of the project to completion.
- **Hyrum Stormwater Inspection Program; Hyrum City Corp, Hyrum, UT (2016-Current)** *PM/Construction Oversight.* Paul is responsible for monthly stormwater site inspections for all applicable construction activity within Hyrum City. Tasked with the responsibility to assure that all necessary protocols are being followed to align Hyrum City's stormwater program to State and Federal requirements. Paul coordinates issues and resolutions between the city and contactor on a regular basis, assuring that necessary steps were taken to achieve compliance with the regulations.

Gary Vance, PE

Quality Assurance/Quality Control

EXPERIENCE
23 Years

REGISTRATION
UT PE, 7279300

EDUCATION
MS, Civil/ Environmental Engineering

Gary is a PM for water and wastewater treatment systems. He has over 23 years of experience in master planning, funding, permitting, designing, constructing, and managing treatment projects. He is a proactive communicator, responsive to client needs, and excels at managing large and diverse teams.

Gary has prepared more than 15 wastewater facility plans in recent years for communities in Utah and Idaho. He is very familiar with the needs of growing communities in an increasingly stringent regulatory environment. He has managed the planning, design, and construction administration of numerous WWTPs in the intermountain west. These range from MBR treatment facilities in Spanish Fork and Santaquin, Utah; Filer, Idaho; and a private industrial yogurt facility in Colorado. He's also designed solids handling/ drying/composting projects at CDSD, Spanish Fork, Santaquin, Coalville, Tooele, Logan, Salt Lake City WRF, and Central Weber Sewer District, Utah as well as Buhl, Filer, and Hayden, Idaho. In addition, Gary has managed and served as the engineer of record on more than 25 sewer lift stations of all sizes and types, including wet pit/dry pit, submersible, and suction lift. These experiences have provided Gary in-depth knowledge of all aspects of treatment facility projects.

WASTEWATER TREATMENT MASTER PLANS

- Wellsville, UT (2025)
- Powder Mountain, UT (2025)
- Henefer, UT (2025)
- Tooele, UT (2024)
- Santaquin, UT (2022)
- Mount Pleasant, UT (2022)
- Spanish Fork, UT (2020)
- Lewiston, UT (2019)
- Malad, ID (2018)
- Plain City, UT (2018)
- Morgan, UT (2017)
- Tabiona, UT (2015)
- Glenns Ferry, ID (2014)
- Albion, ID (2013)
- Coalville, UT (2011)
- Buhl, ID (2009)

WASTEWATER TREATMENT FACILITY DESIGN AND CONSTRUCTION

- **Spanish Fork and Mapleton Membrane Bioreactor WRF; Spanish Fork, UT (2025)** *Client Manager and PM.* J-U-B led development of treatment alternatives, cost opinions, and the 2020 WWMP to support funding for a new greenfield facility. Managed planning, design, and construction of an 8 MGD MBR facility with dual-stage screening, grit removal, and UV disinfection, with provisions for future Type 1 reuse. J-U-B also delivered early work packages in 2023 with the CM/GC to maintain schedule, including offsite piping/siphons, ground improvements, and a solids handling retrofit with new screw presses and conversion of an anaerobic digester to an aerated biosolids holding tank to maintain schedule. J-U-B/Stantec collaboration with startup and commissioning in fall 2025; $116M CM/GC project with Alder Construction.
- **Santaquin Membrane Bioreactor WRF, Santaquin, UT (Ongoing)** *Client Manager and PM.* Design and construction of Phase 3 improvements including dewatering building expansion/conveyance, new solids holding tank and associated facilities, new biological process

Gary Vance, PE

Quality Assurance/Quality Control

train, new membrane train with protective coatings and new Veolia ZW500EV membranes, UV upgrades, and new winter storage. The project will be constructed in 2026 with an estimated cost of $13.5M.

- » *J-U-B has partnered with Santaquin from master planning in 2010 through multiple construction phases. The first project, completed in 2013, included master planning, funding, and design/construction of headworks, BNR/MBR treatment, solids handling, UV disinfection, and a reuse pump station. Phase 2, completed in 2019 as a CM/GC project, added new membranes and a solids handling retrofit.*

- **Tooele WRF, Tooele, UT (Ongoing)** *PM.* Design of existing solar dryer system retrofit with heated floors to achieve Class A biosolids in winter. Includes dewatering building improvements, new UV disinfection system, secondary clarifier #2 rehabilitation, and site civil improvements. The project will bid in 2026 with an estimated construction cost of $12M.
  - » *J-U-B has completed multiple upgrades at the Tooele WRF in recent years including rehabilitating a secondary clarifier, upgrading the dewatering building, and enhancing the reuse pump station (2023), WWMP (2024) and a new 12 MGD peak-hour headworks facility with fine screens and grit removal (2025; $9M).*
- **CDSD, Kaysville, UT (Ongoing)** *PM.* J-U-B has partnered with CDSD for more than 20 years, completing multiple projects at its 10 MGD facility. Work includes design and construction of a dewatering building with screw presses, load-out facilities, and supporting infrastructure; a 30-inch HDPE-lined RCP trunkline in 2023; and a compost equipment building and sewer lift station in 2024 using CM/GC. J-U-B is currently designing a new dry pit sewer lift station using CM/GC.
- **Timpanogos Special Service District, Lehi, UT (Ongoing)** *PM.* Design of west bioreactor safety and access improvements at oxidation ditches, including structural modifications of baffle walls. Also, well rehabilitation project to provide plant water supply and water rights proofing. Construction to begin summer 2026.
- **Logan WRF Compost Facility, Logan, UT (Ongoing)** *PM.* Led the master plan/feasibility study evaluating alternatives to achieve Class A compost at Logan's new WRF. Designed a compost facility using aerated static piles for public sale, including a stormwater pump station, scale house, green waste receiving, future odor control provisions, and community gardens/pavilion. The project is being delivered in two phases, with Phase 1 complete and Phase 2 under construction (startup anticipated summer 2026).
- **WWTP Phase 1 Improvements, Morgan, UT (2024)** *PM.* Completed completed a WWMP to phased improvements develop a phased solution to accommodate growth and increasingly stringent permit requirements. Phase 1 included the design and construction administration of a 0.6 MGD facility with a new headworks building with fine screening and grit removal, admin building, and disinfection/reaeration upgrades ($3.5M total). Phase 2 improvements added blowers and diffused aeration ($1.2M).

Katie Reams, PE

Project Engineer

EXPERIENCE
13 Years

REGISTRATION
UT PE, 11303239

EDUCATION
MS, Civil Engineering

Katie is part of J-U-B's water and wastewater treatment team as a PE. She has 13 years of experience in the design, implementation and management of complex projects, specifically in water and wastewater engineering, treatment design, mechanical process piping, chemical dosing systems, sewer lift station design, master planning, and construction administration. Throughout her career she has worked with numerous municipalities across the country designing wastewater treatment facilities, ground water treatment facilities, and conveyance systems.

WASTEWATER MASTER PLANNING

- **WWTP Master Plan; Richmond, UT (2025)** *PE.* Developed a master plan evaluating the city's existing 0.5 MGD MBR WWTP for capacity, condition, and permit compliance. Master plan design included the recommendation of capital improvement projects and phasing plan to address immediate and future infrastructure needs including headworks upgrades, biological treatment capacity, hydraulic capacity, Kubota MBR equipment upgrades, UV disinfection, and solids wasting improvements.
- **Wastewater Treatment Facilities Plan; Wellsville, UT (2025)** *PE.* Lead engineer responsible for providing facility plan for the city's existing facultative lagoon treatment system. The facility plan included evaluating hydraulic and treatment capacity for new Total Phosphorus permit limitations.
- **Wastewater Collection & Treatment IFFP; Henefer, UT (2024-2025)** *PE.* PE responsible for evaluating the existing facultative lagoon treatment system. Facility Plan design included evaluating lagoon hydraulic design capacity, headworks screening, mechanical aeration, UV disinfection, and effluent flow monitoring upgrades.
- **City of Fallon WWTP Master Plan; Fallon, NV (2023-2024)** *PE.* Developed a master plan for the city's existing 2.2 MGD SBR WWTP to evaluate capacity and condition of the aging facility. The report evaluated the headworks, SBR system, disinfection, solids disposal, and ancillary systems to create a recommended capital improvement projects list and phasing plan meeting sufficient levels of treatment for the 20-year planning period.
- **South Fork Sewer District WWTP Facility Plan; Page, ID (2023-2024)** *PE.* Developed a facility plan evaluating the district's two conventional activated sludge WWTPs under the impact of significant I/I and stringent EPA regulations. Facility plan design included the recommendation of capital improvement projects addressing immediate and future infrastructure needs including biosolids handling, metals removal, and discharge temperature compliance.
- **Wastewater Master Plan; Lewiston, UT (2019)** *PE.* Developed a preliminary ER for improving Lewiston City's collection system and wastewater treatment facility. Completed grant applications to both DWQ and USDA for project funding.
- **Spanish Fork WRF Master Plan; Spanish Fork, UT (2019)** *PE.* Developed a master plan evaluating potential treatment process

Katie Reams, PE

Project Engineer

alternative to increase hydraulic and treatment capacity for future growth, as well as to meet nutrient limits. Alternatives included ranged from upgrading existing infrastructure to construction of a new greenfield treatment facility. Alternatives were evaluated for feasibility to treat 8-MGD with stringent TIN and TP discharge concentrations to a tributary of Utah Lake.

WASTEWATER DESIGN

- **Lakeside Landing Lift Station; Visionary Homes, Springville, UT (2025-Current)** *PE.* Designed a 2.6 MGD dry pit sewer lift station. The design includes a wet well, open channel grinder, process piping, and building design. Ice-pigging stations are also included in the design.
- **South Farmington Park Lift Station; Central Davis Sewer District, Farmington, UT (2025-Current)** *PE.* Designed a 2 MGD dry pit sewer lift station. The design includes a wet well, open channel grinder, process piping, and building design.
- **Green Waste Biosolids Compost Pad Stormwater Lift Station; Logan City, Logan, UT (2024-2025)** *PE.* Designed and performed construction management of a 5.2 MGD lift station to remove stormwater from the city's biosolids compost pad. Design includes a duplex submersible lift station with a jockey pump and separate valve vault.
- **WRF Influent Lift Station; Santaquin, UT (2023-2025)** *PE.* Designed the rehabilitation and upgrade of the influent sewer lift station for the Santaquin WRF. Design included rehabilitating the existing wet well to increase capacity to 3,000-gpm with a third pump and new process piping, a new valve and meter vault, generator building with new electrical and controls, and new force main to the WRF to accommodate the increased capacity.
- **Sewer Transfer Lift Station; Palisade, CO (2023-2025)** *PE.* Designed a 750-gpm dry pit sewer lift station. Design included a wet well and dry well configuration, process piping, influent grinder, wet well mixing, ozone odor control, and building design. Design also included an on-site pig launching station and force main.
- **250 N Sewer Lift Station; Lewiston City, Utah (2023-2025)** *PE.* Designed the rehabilitation of the city's primary sewer trunk line lift station. Design included a 500-gpm duplex submersible lift station, rehabilitation and relocating the existing wet well on site, and installing a new force main.
- **WRF Design and Construction; Spanish Fork, UT (2021-2025)** *PE.* Designed the site civil process piping for $120 Million 8-MGD MBR WRF and offsite civil improvements. Offsite design includes the design of a 500-gpm duplex submersible plant drain lift station and retrofitting the solids holding tank and pumps for a new dewatering facility. Katie also assists with the construction management of the project.

Braden Wilding, EIT

Engineering Support

EXPERIENCE
3 Years

EDUCATION
MS, Civil and Environmental Engineering

Braden has experience in the planning and design of municipal water and wastewater facilities. His recent work has included preparation of facility plans, hydraulic analysis, and process evaluation. He has supported alternatives analyses and coordination with project teams during planning and preliminary design phases, helping develop practical and effective solutions for community water and wastewater systems.

WASTEWATER

- **Wastewater Treatment Facilities Plan; Wellsville, UT (2025)** *Project Designer.* Supported development of the facility plan for the city's existing facultative lagoon treatment system, including evaluation of hydraulic and treatment capacity to address new Total Phosphorus permit limitations. Work included analysis of influent flows and loading conditions, assessment of existing lagoon performance, and support in identifying potential improvements to maintain compliance with current and anticipated regulatory requirements.
- **WWTP Master Plan; Richmond, UT (2025)** *Project Designer.* Supported development of a master plan evaluating the city's existing 0.5 MGD MBR wastewater treatment facility for capacity, condition, and permit compliance. The master plan included recommendations for capital improvements and phased upgrades to address immediate and future needs, including headworks, biological treatment, hydraulic capacity, MBR equipment, UV disinfection, and solids handling processes.
- **WWTP Master Plan; West Richland, WA (2025)** *Project Designer.* Supported development of a facility plan, including analysis of influent flows and loads and evaluation of hydraulic capacity. Work also included development of a hydraulic grade line to assess system performance and identify capacity limitations within existing processes.

WATER

- **Garden City Water Master Plan; Garden City, Utah (2026-Current)** *Project Designer.* Supported development of a water master plan evaluating system capacity and existing infrastructure. Work included analysis of current and future demands and identification of capital improvements to address capacity limitations and accommodate future growth.

Makena Swensen, EIT

Engineering Support

EXPERIENCE

1 Year

EDUCATION

BS, Environmental Engineering

Makena has experience in planning, design, and construction of wastewater treatment facilities. She has supported facility evaluations through the collection and analysis of flow and loading data, enabling data driven master planning decisions. Makena has supported wastewater treatment scoping and alternative analysis through planning and preliminary design.

WASTEWATER MASTER PLANNING

- **Wastewater Master Plan; Garland, UT (2025-Current)** *Project Designer.* Aided in analyzing and projecting current flow and loading data to evaluate capacity of current equipment. Supported modification evaluation of the existing packaged wastewater treatment facility.
- **East Hollow Wastewater Treatment Scoping Study; Trilogy, Idaho (2025-Current)** *Project Designer.* Aided in identifying and evaluating potential treatment methods and alternatives. Supported analysis of optimal facility location and solids disposal methods.

WASTEWATER

- **Disinfection Bypass Study; American Samoa Power Authority, American Samoa (2025)** *Project Designer.* Supported the evaluation of three potential disinfection alternatives, including UV, chlorine, and peracetic acid, for a new bypass system for the UV disinfection system at one of the plants in American Samoa. Conducted a literature review of the advantages and disadvantages of each alternative.

Thank You!

J-U-B FAMILY OF COMPANIES

THE LANGDON GROUP

J-U-B ENGINEERS, INC.

GATEWAY MAPPING INC.