Towns of Jay & Black Brook, New York

Hamlet of Ausable Forks, NY

Request for Engineering Services Proposal:

Wastewater Treatment Plant Upgrades

PROJECT NUMBER: P-1057-2021

DATE ISSUED: 3/10/2022

UPDATED: TBA

Program Requirements:

- NYS Environmental Facilities Corporation (EFC) Engineering Planning Grant (EPG)
- **https://www.efc.ny.gov/bid-packets**

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REQUEST FOR PROPOSALS – ENGINEERING SERVICES

NOTICE IS HEREBY GIVEN, that the Undersigned, on behalf of the Town of Jay & Black Brook, will accept proposals **until 2:00 P.M. on April 7th, 2022** for **Municipal Civil Engineering Services** for the **Ausable Forks WWTP Upgrades** project.

PLEASE TAKE FURTHER NOTICE that the Town affirmatively states that in regard to any contract entered into pursuant to this notice, without regard to race, color, sex, religion, age, national origin, disability, sexual preference or veteran status, disadvantaged and minority or women-owned business enterprises will be afforded equal opportunity to submit bids in response hereto.

Disadvantaged and Minority/Women-Owned Business Enterprises (M/WBE) businesses, Service-Disabled Veteran Owned Businesses (SDVOB) and Section 3 businesses are strongly encouraged to participate in this project. The Town is an equal opportunity employer.

For more information on the requirements associated with NYS EFC funds, please see their website for a complete list of documents & requirements relevant to this project and necessary for all consultants & contractors under this project:

- **https://www.efc.ny.gov/bid-packets**

In addition to the proposal, Respondents shall submit executed non-collusion certificates signed by the proposer or one of its officers as required by the General Municipal Law Sec. 103d. The Respondents shall also submit an executed certificate of compliance with the Iran Divestment Act signed by the proposer or one of its officers as required by the General Municipal Law Sec. 103g. The Town reserves the right to except any and all proposal(s), reject any and all proposals not considered to be in the best interest of the Town, and to waive any technical or formal defect in the proposals which is considered by the Town to be merely irregular, immaterial, or unsubstantial.

Please contact the Essex County Planning Office **(518) 873-3426** or **CommunityResources@essexcountyny.govf**or additional information concerning the Proposals. Specifications may be obtained at the **NYS Contract Reporter account**:

"Essex County Department of Community Development & Planning"

SOLICITATION Title: "Ausable Forks WWTP Upgrades RFP"

All proposals submitted in response to this notice shall be marked "**AUSABLE FORKS WWTP UPGRADES RFP**" clearly on email traffic and/or the outside of the envelope containing your electronic/digital response files.

Published: March 10th, 2022

Essex County Office of Community Resources
Elizabethtown, New York 12932
CommunityResources@co.essex.ny.us
(518) 873-3426

INTRODUCTION

A. Overview

This solicitation is being issued by the TOWNS OF JAY and BLACKBROOK ("the Towns") for ENGINEERING SERVICES for a municipal project. The project will be funded by New York State Environmental Facilities Corporation (NYS EFC) and the NYS DEC Water Quality Improvement Program (WQIP) grant, and all aspects must be compliant to their requirements, which are included herein as **Appendix A.**

Companies with demonstrated experience in ***Municipal Civil Engineering Projects*** and public funding agency administration interested in making their services available to the Town are invited to respond to this solicitation. "Respondents" means the companies or individuals that submit proposals in response to this solicitation. It is understood that the selected Respondent acting as an individual, partnership, corporation or other legal entity, is licensed to provide such services in New York State. The Respondent shall be financially solvent and each of its members if a joint venture, its employees, agents or sub-consultants of any tier shall be competent to perform the services required under this solicitation.

The Towns are seeking to encourage participation by respondents who are DBE/MBE/WBE, Section 3 and/or Service-Disabled Veterans' business enterprises. For the purposes of the project, the Town is requiring a *documented* DBE/MBE/WBE & Section 3 participation compliance & good faith effort per the Program requirements listed in **Appendix A** by providing evidence of direct solicitation to these required DBEs after contract award, but before given Notice to Proceed.

Nothing in this solicitation shall be construed to create any legal obligation on the part of the Town or any respondents. The Towns reserve the right, in its sole discretion, to amend, suspend, terminate, or reissue this solicitation in whole or in part, at any stage. In no event shall the Town be liable to respondents for any cost or damages incurred in connection with the solicitation process, including but not limited to, any and all costs of preparing a response to this solicitation or any other costs incurred in reliance on this solicitation. No respondent shall be entitled to repayment from the Towns for any costs, expenses or fees related to this solicitation. All supporting documentation submitted in response to this solicitation will become the property of the Towns. Respondents may also withdraw their interest in the solicitation, in writing, at any point in time as more information becomes known.

B. Time of Response

Respondents will have approximately four (4) weeks to provide a response to this solicitation. The Towns and resources from Essex County will review the proposals and respond within two (2) weeks of solicitation closure, after Town Board Meetings are held

1. Solicitation Posted: **March 10th, 2022**
2. Statements Due: **April 7th, by 2:00 pm.**
3. Town Board Proposal Review: **April 7th – 14th, 2022**
4. Contract Awarded estimated: **April 28th, 2022**

C. Contract Negotiations

After review and interviews are complete, the Towns will approve the successful Proposal via Board Resolution and then provide a Notice of Award to the Respondent

D. Contract Execution

Once the contract Terms and Conditions have been approved, the final contract cannot be executed until the **NYS EFC** program requirements are completed and provided as part of the contract documents, such as the E E O , M/WBE Plans, other required forms and plans, etc. Once these have been provided the Town Board will execute the final contracts with the Respondent

E. Term of Contract

Any contract awarded pursuant to this solicitation shall be for a contract period of approximately **eighteen (18) months** and will expire upon completion of the projects' administrative close out. ***Substantial completion of the Work must be completed no later than 5/01/23, and administrative closeout must be complete no later than 8/01/23.***

F. Funding Agency Requirements

Award recipients must follow the guidance provided in **Appendix A**. All Respondents must demonstrate capability to adhere to the following Funding Agencies' requirements:

- Davis Bacon Related Acts (DBRA) Compliance
- Disadvantaged Business Enterprises (DBE) & Minority Women Business Enterprise (MWBE) Compliance
- Equal Employment Opportunity (EEO) Compliance
- Anti-Lobbying Policy
- Others as required by Appendix A.

Respondents are strongly encouraged to read these regulations prior to submitting their response to this solicitation. Dates and schedules provided by the above funding agencies will be incorporated into project scope of work and schedule requirements.

PROFESSIONAL SERVICE REQUIREMENTS

A. Scope of Work

The Town of Jay and the Town of Black Brook jointly own and operate a sewer collection and wastewater treatment system for the Au Sable Forks hamlet area, consisting of the Jay Sewer District and Black Brook Sewer District. The hamlet of Au Sable Forks is located along the AuSable River, (16) miles West of Lake Champlain, and is named for the convergence of the East and West Branch of the Au Sable River. The hamlet, divided by the river, resides in Clinton County and Essex County. The system consists of a Small Diameter Gravity Sewer (SDGS) and an aerated lagoon wastewater treatment plant (WWTP), which were put into service in 1990. The collection and treatment plant were constructed with assistance from US Rural Development, financed with Rural Development funds. The system has generally been considered in compliance with its New York State Department of Conservation, State Pollution Discharge Elimination System (NYS DEC SPDES) Permit #NY 020 1910.

On February 2nd, 2018 the Town of Jay received a letter from DEC notifying the Towns of the requirement to include seasonal Disinfection to the wastewater treatment plant beginning May 1st, 2023. In 2019, the Towns acquired an engineering planning grant from NYS EFC and consequently acquired an engineering report on the WWTP, included in Appendix B for review.

This solicitation will determine the most qualified Engineering Firm to complete the designs for the selected Alternative from the engineering report and ensure that all deliverables follow all State and Federal rules and regulations governing the funding program. Recipients will provide a Cost Proposal according to the Tasks listed below and also in in the "Deliverables Table" in Appendix K. For a detailed description of the services and deliverables in each Phase, see Appendix L "Draft Form of Contract" & Exhibit A "Requested Services".

The Scope of Work must generally include the following tasks, at a minimum:

- **General Requirements – (Tasks 1 -2)** The consultant shall participate in monthly project update meetings, public meetings and provide distribution of meeting minutes to the Town and Essex County. The consultant shall maintain and produce a project schedule in Gantt Format. The consultant shall work with the Essex County Office of Community Resources for permitting & funding compliance for this project. Essex County will develop all funding applications, funding compliance oversight, act as Minority Business Officer (MBO) and provide finance consultation with the Town with technical input from the consultant. The consultant will be responsible for any technical information required for project development and permitting purposes. The consultant shall additionally coordinate with regulatory & funding program representatives as requested for review and approval of the engineering report, report reviews, and any compliance measures.

- **Preliminary Design – (Tasks 3 – 5, 18 & 19)** The consultant shall conduct such field work they deem necessary to obtain the required information to properly design the Work. This shall include, but not be limited to site surveying to support schematic design site plans for forming a basis of design and supporting all permitting needs. All survey/mapping data collected during this Task shall be a separate deliverable to the Town in a hard copy format

(3 hard copies of full-size plans) and digital format (.shp file, .pdf, etc.).The consultant will further provide preliminary / schematic plans for review by the Towns in accordance with all applicable standards prior to initiating the Final Design phase.

- **Final Design – (Task 6)** The consultant shall prepare the Final plans & specifications and develop a Basis of Design Report, in accordance with 10-State Standards and approved by the relevant funding and regulatory agencies. Once the Basis of Design Report is approved by the Town and County, it will be submitted to the regulatory agencies for review and approval.

- **Permitting & Construction Documents– (Tasks 7, 8)** The consultant shall compile the project Construction Documents for assisting the Towns and Essex County in securing all necessary permits for the project from regulatory / funding agencies prior to Bidding.

- **Bidding Assistance – (Task 9 -11)** The consultant shall provide bidding assistance for this project including advertisements, providing copies and plans and specifications to be distributed to contractors, attending a pre-bid meeting, issuing minutes for the pre-bid meeting, answering contractor questions, issuing addenda, as necessary, reviewing the bids, and making recommendations to the Towns.

- **Construction Administration & Management – (Tasks 12 –17)** The consultant shall provide construction administration and management services including, but not limited to, the following:
  - Preconstruction Conference & meeting minutes.
  - Issuing a Notice to Proceed (NTP).
  - Reviewing and approving all Submittals, shop drawings and substitutions, as necessary.
  - Reviewing and making recommendations to the Town for any requested Change Orders
  - Reviewing and certify contractor invoices and making recommendations to the Town for payment.
  - Review and certify contractor Certified Payrolls.
  - Providing adequate construction observations services to ensure proper construction of the project (Please provide estimate construction period and number of hours. construction inspector will be on-site)
  - ***Approximately one hundred twenty (120) days of Resident Project Representative (RPR) Services.***
  - Review of the final work and development of and punch list
  - Provide a letter of construction compliance at the end of the project.
  - Provide NYS DEC compliant Operations and Maintenance Manuals for the project, as required for new or modified equipment and facilities.

- **Inspection & Maintenance Plan – (Task 18)** The consultant shall work with the Towns to produce an I&M Plan to address the deliverable in the Town's Order on Consent NYS DEC.

The consultant shall be responsible for coordinating all technical aspects of this project and addressing any questions or concerns of the NYS DOH, NYS DEC and any other regulatory agencies as required. Additionally, the consultant shall work to meet all DBE, MBE, WBE, SDVOB, and Section 3 participation requirements and goals, as required for funding

compliance. Davis-Bacon prevailing wage rate documentation is required for this project, as determined by DOL, and must be included with the bidding documents.

B. Quality of Work

All work shall follow recognized professional practices and standards and meet the specifications required by local, state and federal approval of the project's plans and specification prior to advertising the project for construction bidding.

C. Records

The design professional is to maintain all books, documents, papers, account records and other evidence pertaining to this work and to make such materials available at their respective offices at all reasonable times during the agreement and for a period up to seven (**7) years** from the date of final payment under the agreement. Throughout the project, the respondent will be required to coordinate with the Town and the Essex County Planning Office via regular project meetings and other electronic project management software.

All reports, documents, information, presentations, electronic drawings, and other materials prepared by the award recipient in connection with this Agreement are deliverables to be provided to the Town as a result of the project. Copies of all reports, designs, project documents, supporting information and any materials or equipment furnished to the award recipient by the Owner shall remain the property of the Owner and award recipient's limited possession of the purpose of carrying out the Work, shall be returned to the Owner at the conclusion of the Agreement. **Nothing written in this paragraph, however, will be interpreted to forbid the award recipient from retaining a single copy of the information for its files.**

D. Additional Requirements

Professional services shall comply with all codes, standards, regulations, and workers' safety rules that are administered by federal agencies (EPA, OSHA, and DOT), state agencies (State OSHA, DNR, and DCH), and any other local regulations and standards (i.e. local ordinance and building codes) that may apply. ***Further requirements are identified in the accompanying Appendix of this solicitation.***

SUBMITTAL REQUIREMENTS

A. Preliminary Requirements

1. *Certificate of Authority (Corporation) or Certificate of Existence (ex: Professional Limited Liability Company or "PLLC") issued by the NY Secretary of State

2. *Evidence of Insurance: Commercial General Liability with limits not less than $2,000,000; Workers Compensation and Employers Liability with limits not less than $500,000; and, Automobile Liability with limits not less than $1,000,000 per occurrence.

3. *References: At least three (3) references of *related projects*, including date of project, contact person and phone number, and a brief description of the project.

4. *Conflict of Interest Statement & Supporting Documentation: Respondent shall disclose any professional or personal financial interests that may be a conflict of interest in representing the Town. In addition, all Respondents shall further disclose arrangement to derive additional compensation from various investment and reinvestment products, including financial contracts.

5. *Non-Collusion Biding Affidavit: Provide completed, signed & notarized form back with Response

6. *Iran Divestment Act Compliance Form: Provide completed & signed form back with Response

**SOLICITATION RESPONSE WILL BE CONSIDERED INCOMPLETE AND NOT SCORED IF THESE ITEMS ARE NOT PROVIDED IN COMPLETION*

B. Letter of Interest

Submit a Cover Letter of Interest signed by a duly authorized officer or representative of the Respondent, not to exceed two pages in length. The Letter of Interest must also include the following information:

- The principal place of business and the contact person, title, telephone/fax numbers and email address.
- A brief summary of the qualifications of the Respondent and team.
- Description of organization (i.e. Professional Corporation, or Professional Limited Liability Company).
- The names and business addresses of all Principals of the Respondent. For purposes of this solicitation "Principals" shall mean persons possessing an ownership interest in the Respondent.
- If the Respondent is a partially owned or fully-owned subsidiary of another organization, identify the parent organization and describe the nature and extent of the parent organization's approval rights, if any, over the activities of the Respondent.

C. Main Proposal

The purpose of the proposal is to demonstrate the qualifications, competence and capacity of the Respondents in conformity with the requirements of this solicitation. As such, the substance of proposals will carry more weight than their form or manner of presentation. The proposal should demonstrate the qualifications of the firm and of the particular staff to be assigned to this project. It should also specify an approach that will meet the request for proposals requirements.

The proposal should address all the points outlined in the request for proposals. The p roposal should be prepared simply and economically, providing a straightforward, concise description of the proposer's capabilities to satisfy the requirements of the request for proposals. While additional data may be presented, the following items must be included; this represents the criteria against which the proposal will be evaluated.

1. **Qualifications Proposal:** Provide a synopsis of the years of experience and detailed qualifications in performing the range of related municipal project types in compliance with applicable standards, including team's resumes. Respondents should provide narrative examples of a minimum of three (3) projects in detail that are similar in nature to projects described in the solicitation (see "References"). References for similar projects and portfolio vignettes will be reviewed to evaluate the level of experience.

2. **Technical Proposal:**
    a. **Project Management Plan:** Discuss approach to the project in terms of understanding of the established Scope and Deliverables execution, with regard to any constraints identified in this solicitation, to include funding requirements. Provide a plan for engaging the Town's project team and regulatory agencies required. Provide the number of full-time and part-time employees, partnerships or subconsultants proposed and their value to the project.

    b. **Schedule:** Capacity to complete the scope of work within the defined period of performance: **May 2022 – August 2023.** The successful Respondent will have a detailed project schedule & work plan to illustrate the ability complete the work with respect to constraints, either stated or assumed. The Schedule Proposal must include a Gantt chart to illustrate your proposed schedule.

    c. **Funding Agency Experience:** Respondents should state whether they are an DBE/MBE/WBE or Section 3 business enterprise; if so, provide a copy of a current DBE/MBE/WBE certification letter. Respondents may also cite previous project experience in working with DBE firms, cite any existing partnerships with DBEs or cite the planned DBE partnerships relevant to addressing requirements of this project & solicitation. If Respondents are planning to cite proposed DBE partnerships for this project (e.g., no existing contract vehicle), please provide contact information for reference checks with the appropriate point of contact for validation.

3. **Cost Proposal:**
    a. Cost will not be the primary factor in the selection of firm. The proposed price will be graded based upon the following formula:
        - Average Bid / Your Price = X (whereby X cannot exceed 100%)
        - X * 20 points = Points awarded based on cost

b. This should include the lump sum/unit rates for different Tasks, per the table provided in **Appendix K, "Deliverables Table"**. Respondents should include a description of the costs and detail proposals for *cost savings* in their Proposal. Labor cost estimates will include payments of prevailing wage rates as determined by the NYS Department of Labor and Industries as applicable (such as Survey work for example).

SELECTION PROCESS

The Selection Committee comprised of the Towns and resources from Essex County staff will review qualifications in accordance with the evaluation criteria set forth herein. Proposals that are submitted timely and comply with the mandatory requirements of the solicitation will be evaluated in accordance with the terms of the solicitation. Any professional services contracts resulting from this solicitation will not necessarily be awarded to the Respondent with the lowest price. Instead, professional services shall be awarded to vendor whose proposal received the most points in accordance with criteria set forth in solicitation.

EVALUATION CRITERIA AND SCORING

In evaluating responses to this Request for Proposal, the Town will take into consideration the experience, capacity, and costs that are being proposed by the Respondent. The following Evaluation Criteria will be considered in reviewing submittals:

The point system is to evaluate the experience and capacity of the Respondent. Maximum is 100 Points:

- Respondents will be awarded up to **10 Points for <u>Completeness of Response</u>.**

- Respondents will be awarded up to **40 Points** for **<u>Qualifications Proposal</u>.**
  - ***Related Project Experience:*** ***25 Points***
  - ***Public Funding Experience:*** ***7.5 Points***
  - ***Demonstrated DBE Partners:*** ***7.5 Points***

- Respondents will be awarded up to **40 Points** for the **<u>Technical Proposal</u>**:
  - ***Project Management Plan:*** ***30 Points***
    - ***Understanding of Scope***
    - ***Technical Approach***
    - ***QA / QC Plan***
    - ***Project Communications Plan***
    - ***Funding Requirements Plan***
  - ***Schedule:*** ***10 Points***

- Respondents will be awarded up to **20 Points** for **<u>Cost Proposal</u>**.

QUESTIONS

Questions regarding this solicitation should be submitted in writing via email to Essex County Community Resources at (**CommunityResources@essexcountyny.gov**) between the hours of 0900 – 1500 *only*. Any RFI responses will in turn be made available to all Respondents as they are received by means of direct emails.

SUBMITTAL DUE DATE

Responses to this solicitation are due by 2:00pm on 4/07/2022; solicitation responses must be submitted via electronic PDF sent to the following web address:

https://app.smartsheet.com/b/form/640bdbfbc5de439ebe340010e329e2bd

If you run into technical difficulties providing your response by the web link above, it is also acceptable to submit your solicitation responses in writing via email, OR mail-in digital files (.PDF format) on flash-drive to the solicitation point of contact:

Essex County Office of Community Resources

7533 Court Street – PO Box 217

Elizabethtown, NY 12932

CommunityResources@essexcountyny.gov

(518) 873-3426

Each Respondent shall receive a confirmation of their submission via email, regardless of manner of solicitation response. Respondents are advised to adhere to the Submittal Requirements. Failure to comply with the instructions of this solicitation will be cause for rejection of submittals. **NO HARD COPIES WILL BE ACCEPTED**.

SOLICITATION SUBMITTAL REQUIREMENTS CHECKLIST

FORMS FROM SOLICITATION PACKAGE TO RETURN:

- ❑ Submittal Requirements Checklist (*Provide Checklist with solicitation response)*
- ❑ *Appendix C: References (Minimum 3 related projects)
- ❑ *Appendix D: Conflict of Interest Statement & Supporting Documentation
- ❑ *Appendix E: Certification of Authority
    - Aka, Certificate of Good Standing (Corporation) or Certificate of Existence (Limited Liability Company) issued by the Secretary of State (If Respondent is a joint venture, a Certificate of Good Standing or Certificate of Existence, as applicable, must be submitted for each entity comprising the joint venture.)
- ❑ *Appendix F: Vendor Responsibility Questionnaire (if over $100K in proposed contract value)
- ❑ *Appendix G: W-9 Form
- ❑ *Appendix H: Non-Collusive Bidding Certification
- ❑ *Appendix I: Iran Divestment Act Compliance Form
- ❑ *Appendix K: Deliverables Table with proposed costs
- ❑ * Appendix L: NYS Sexual Harassment Training Certification

FOR THE RESPONDENT TO PROVIDE:

- ❑ Letter of Interest
- ❑ Qualifications Proposal:
    - Description of Company
    - Capacity of Company
    - Resumes of specific staff identified to work on project
    - State License and or Certification
- ❑ Technical Proposal:
    - Project Management Plan (*Describe your approach in detail*)
    - Schedule Proposal (*Provide in a Gantt Chart format*)
    - Experience with DBE/MBE/WBE, Local Hiring, HUD Section 3, if applicable
- ❑ Pricing Proposal Description (*Also include figures in "Deliverables Table"*)
- ❑ *Evidence of Insurance

*These documents must be submitted and complete before the Town will review the remainder of the proposal.

APPENDIX A: FUNDING PROGRAM REQUIREMENTS

NEW YORK STATE OF OPPORTUNITY. | Environmental Facilities Corporation

KATHY HOCHUL
Governor

MAUREEN A. COLEMAN
President & CEO

Mandatory State Financial Assistance Terms and Conditions

for Contracts Funded with New York State Financial Assistance Only

Effective November 1, 2021

New York State Environmental Facilities Corporation
625 Broadway, Albany, NY 12207-2997
P: (518) 402-6924 F: (518) 402-7456
www.efc.ny.gov

REQUIRED CONTRACT LANGUAGE

Recipient to Identify Contract Type:

☐ Construction

☐ Non-Construction

Contents

COMMONLY USED TERMS

The following commonly used terms are defined herein as follows:

"Contract" means an agreement between a Recipient and a Contractor.

"Contractor" means all bidders, prime contractors, Service Providers, and consultants as hereinafter defined, unless specifically referred to otherwise.

"Service Provider" means any individual or business enterprise that provides one or more of the following: legal, engineering, financial advisory, technical, or other professional services, supplies, commodities, equipment, materials, or travel.

"Subcontract" means an agreement between a Contractor and a Subcontractor.

"Subcontractor" means any individual or business enterprise that has an agreement, purchase order, or any other contractual arrangement with a Contractor.

"Recipient" means the party, other than EFC, to a financial assistance agreement or a project finance agreement with EFC through which funds for the payment of amounts due thereunder are being paid in whole or in part.

"State" means the State of New York.

SECTION 1 REQUIREMENTS AND PROCEDURES FOR BUSINESS PARTICIPATION OPPORTUNITIES FOR NEW YORK STATE CERTIFIED MINORITY- AND WOMEN-OWNED BUSINESS ENTERPRISES AND EQUAL EMPLOYMENT OPPORTUNITIES FOR MINORITY GROUP MEMBERS AND WOMEN

For purposes of this section:

"Non-Construction" shall mean Contracts for labor, services (including, but not limited to, legal, financial, and other professional services), supplies, equipment, materials, or any combination of the foregoing.

The Minority- and Women- Owned Business Enterprises ("MWBE") and Equal Employment Opportunities requirements of this section apply to the Contracts or Subcontracts meeting the thresholds under New York State Executive Law Article 15-A as follows:

(a) Non-Construction Contracts greater than $25,000;
(b) Non-Construction Contracts, that are initially under $25,000 but subsequent change orders or contract amendments increase the Contract value to above $25,000;
(c) Construction Contracts greater than $100,000; and,
(d) Construction Contracts that are initially under $100,000 but subsequent change orders or contract amendments increase the Contract value to above $100,000.

I. General Provisions

A. Contractors and Subcontractors are required to comply with New York State Executive Law Article 15-A and 5 NYCRR Parts 140-145 ("MWBE Regulations") for all State contracts as defined therein, with a value (1) in excess of $25,000 for labor, services (including, but not limited to, legal, financial, and other professional services), supplies, equipment, materials, or any combination of the foregoing, or (2) in excess of $100,000 for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon.
B. Failure to comply with all of the requirements herein may result in a finding by the Recipient that the Contractor is non-responsive, non-responsible, and/or has breached the Contract, leading to the withholding of funds or such other actions, liquidated damages pursuant to subsection III(F) of this section, or enforcement proceedings as allowed by the Contract.
C. If any terms or provisions herein conflict with Executive Law Article 15-A or the MWBE Regulations, such law and regulations shall supersede these requirements.
D. Upon request from the Recipient's Minority Business Officer ("MBO") and/or EFC, Contractor will provide complete responses to inquiries and all MWBE and EEO records available within a reasonable time. For purposes of this section, MBO means the duly authorized representative of the State financial assistance Recipient for MWBE and EEO purposes.

II. Equal Employment Opportunities (EEO)

A. Each Contractor and Subcontractor performing work on the Contract shall undertake or continue existing EEO programs to ensure that minority group members and women are afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status. For these purposes, EEO shall apply in the areas of recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff, or termination and rates of pay or other forms of compensation.
B. Contractor represents that it has submitted an EEO policy statement to Recipient prior to the execution of this Contract.
    1. Contractor represents that it's EEO policy statement includes the following language: The contractor will not discriminate on the basis of race, creed, color, national origin, sex, age, disability, or marital status against any employee or applicant for employment, will undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination and will make and document its conscientious and active efforts to employ and utilize minority group members and women in its work force on Contracts relating to State financial assistance projects.

2. The Contractor shall state in all solicitations or advertisements for employees that, in the performance of the Contract relating to this State financial assistance project, all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status.
3. The Contractor shall request each employment agency, labor union, or authorized representative of workers with which it has a collective bargaining or other agreement or understanding, to furnish a written statement that such employment agency, labor union, or representative will not discriminate on the basis of race, creed, color, national origin, sex, age, disability or marital status, and that such union or representative will affirmatively cooperate in the implementation of the Contractor's obligations herein.

C. The Contractor will include the provisions of Subdivisions II(A), II(C), and II(E) in every Subcontract in such a manner that the requirements of these subdivisions will be binding upon each Subcontractor as to work in connection with the Contract.

D. The Contractor shall comply with the provisions of the Human Rights Law (Executive Law Article 15), and all other State and Federal statutory and constitutional non-discrimination provisions. The Contractor and Subcontractors shall not discriminate against any employee or applicant for employment because of race, creed (religion), color, sex, national origin, sexual orientation, military status, age, disability, predisposing genetic characteristic, marital status or domestic violence victim status, and shall also follow the requirements of the Human Rights Law with regard to non-discrimination on the basis of prior criminal conviction and prior arrest.

E. Required EEO Forms
1. EEO Staffing Plan
Non-Construction Contracts and Subcontracts only
To ensure compliance with this section, the Contractor represents that it has submitted prior to execution of this Contract an EEO Staffing Plan to the Recipient's MBO to document the composition of the proposed workforce to be utilized in the performance of the Contract by the specified categories listed, including ethnic background, gender, and federal occupational categories.
2. EEO Workforce Employment Utilization Report ("Workforce Report")
   a. The Contractor shall submit a Workforce Report, and shall require each of its Subcontractors to submit a Workforce Report to the Recipient, in such format as shall be required by EFC during the term of the Contract. For construction Contracts, Workforce Reports must be submitted on a monthly basis; for non-construction Contracts, Workforce Reports must be submitted on a quarterly basis.
   b. Separate forms shall be completed by Contractor and any Subcontractor.
   c. In limited instances, the Contractor may not be able to separate out the workforce utilized in the performance of the Contract from the Contractor's and/or Subcontractor's total workforce. When a separation can be made, the Contractor shall submit the Workforce Report and indicate that the information provided related to the actual workforce utilized on the Contract. When the workforce to be utilized on the Contract cannot be separated out from the Contractor's and/or Subcontractor's total workforce, the Contractor shall submit the Workforce Report and indicate that the information provided is the Contractor's total workforce during the subject time frame, not limited to work specifically under the Contract.

III. Business Participation Opportunities for MWBEs

A. Contract Goals
1. For purposes of this Contract, EFC establishes the following goals for New York State certified MWBE participation ("MWBE Combined Goals") based on the current availability of qualified MBEs and WBEs.

Program	MWBE Combined Goal*
NYS financial assistance only	30%
Engineering Planning Grant	30%

*May be any combination of MBE and/or WBE participation

2. For purposes of providing meaningful participation by MWBEs on the Contract and achieving the MWBE Contract Goals established in Section III-A hereof, the Contractor should reference the directory of New York State Certified MWBEs found at the following internet address: https://ny.newnycontracts.com .
3. The Contractor understands that only sums paid to MWBEs for the performance of a commercially useful function, as that term is defined in 5 NYCRR § 140.1, may be applied towards achievement of applicable MWBE participation goals.
    a. For construction and construction-related services Contracts or Subcontracts, the portion of the Contract or Subcontract with an MWBE serving as a supplier, and so designated in ESD's Directory, that shall be deemed to represent the commercially useful function performed by the MWBE shall be 60% of the total value of the Contract or Subcontract. The portion of a Contract or Subcontract with an MWBE serving as a broker, as denoted by NAICS code 425120, that shall be deemed to represent the commercially useful function performed by the MWBE shall be the monetary value for fees, or the markup percentage, charged by the MWBE.
    b. For non-construction Contracts or Subcontracts, the portion of a Contract or Subcontract with an MWBE serving as a broker that shall be deemed to represent the commercially useful function performed by the MWBE shall be 25% of the total value of the contract
4. Where MWBE Contract Goals have been established herein, pursuant to 5 NYCRR § 142.8, the Contractor must document "good faith efforts" to provide meaningful participation by MWBEs as Subcontractors or suppliers in the performance of the Contract.
5. In accordance with Section 316-a of Article 15-A and 5 NYCRR § 142.13, the Contractor acknowledges that if it is found to have willfully and intentionally failed to comply with the MWBE participation goals set forth in the Contract, such a finding constitutes a breach of Contract and the Contractor shall be liable to the Recipient for liquidated or other appropriate damages, as set forth herein.

B. MWBE Utilization Plan
1. The Contractor represents and warrants that Contractor has submitted an MWBE Utilization Plan to the Recipient prior to the execution of this Contract.
2. The Contractor agrees to use such MWBE Utilization Plan for the performance of MWBEs on the Contract pursuant to the prescribed MWBE goals set forth in Section III-A of this section.
3. The Contractor further agrees that a failure to submit and/or use such MWBE Utilization Plan shall constitute a material breach of the terms of the Contract. Upon the occurrence of such a material breach, the Recipient shall be entitled to any remedy provided herein, including but not limited to, a finding that the Contractor is not responsive.
4. Contractor must report any changes to the Utilization Plan after Contract award and during the term of the Contract to the Recipient's MBO. Contractor shall indicate the changes to the MBO in the next Monthly MWBE-SDVOB Contractor Compliance Report after the changes occurred. At EFC's discretion, an updated MWBE Utilization Plan form and good faith effort documentation may be required to be submitted. When a Utilization Plan is revised due to execution of a change order, the change order should be submitted to the MBO with the Monthly MWBE-SDVOB Contractor Compliance Report or revised Utilization Plan.
5. The Contractor shall submit copies of all fully executed Subcontracts, agreements, and purchase orders that are referred to in the MWBE Utilization Plan to the MBO within 30 days of their execution.

C. Requests for Waiver
1. If the Contractor, after making good faith efforts, is unable to comply with MWBE goals, the Contractor may submit a Request for Waiver to the Recipient documenting good faith efforts by the Contractor to meet such goals. If the documentation included with the waiver request is complete, the Recipient shall forward the request to EFC for evaluation, and EFC will issue a written notice of acceptance or denial within twenty (20) days of receipt.

2. If the Recipient, upon review of the MWBE Utilization Plan and updated Quarterly MWBE Contractor Compliance Reports determines that the Contractor is failing or refusing to comply with the MWBE Contract Goals and no waiver has been issued in regards to such non-compliance, the Recipient may issue a notice of deficiency to the Contractor. The Contractor must respond to the notice of deficiency within seven (7) business days of receipt. Such response may include a request for partial or total waiver of MWBE Contract Goals.

D. Monthly MWBE Contractor Compliance Report ("Monthly MWBE-SDVOB Report")
The Contractor agrees to submit a report to the Recipient by the third business day following the end of each month over the term of this Contract documenting the payments made and the progress towards achievement of the MWBE goals of the Contract. The Monthly MWBE-SDVOB Report must be supplemented with proof of payment by the Contractor to its Subcontractors (e.g., copies of both sides of a cancelled check) and proof that Subcontractors have been paid within 30 days of receipt of payment from the Recipient. The final Monthly MWBE-SDVOB Report must reflect all Utilization Plan revisions and change orders.

E. Liquidated Damages - MWBE Participation
In accordance with Section 316-a of Article 15-A and 5 NYCRR §142.13, if it has been determined by the Recipient or EFC that the Contractor has willfully and intentionally failed to comply with the MWBE participation goals, the Contractor shall be obligated to pay to Recipient liquidated damages or other appropriate damages, as specified herein and as determined by the Recipient or EFC.

Liquidated damages shall be calculated as an amount not to exceed the difference between:

1. All sums identified for payment to MWBEs had the Contractor achieved the approved MWBE participation goals; and,
2. All sums actually paid to MWBEs for work performed or materials supplied under this Contract.

The Recipient and EFC reserve the right to impose a lesser amount of liquidated damages than the amount calculated above based on the circumstances surrounding the Contractor's non-compliance.

In the event a determination has been made by the Recipient or EFC which requires the payment of damages identified herein and such identified sums have not been withheld, Contractor shall pay such damages to the Recipient within sixty (60) days after they are assessed unless prior to the expiration of such sixtieth day, the Contractor has filed a complaint with the Empire State Development Corporation – Division of Minority and Women's Business Development ("ESD") pursuant to Subdivision 8 of Section 313 of the Executive Law in which event the damages shall be payable if the Director of ESD renders a decision in favor of the Recipient.

SECTION 2 PARTICIPATION OPPORTUNITIES FOR NEW YORK STATE CERTIFIED SERVICE-DISABLED VETERAN-OWNED BUSINESSES

For purposes of this section:

"Non-Construction" shall mean Contracts for labor, services (including, but not limited to, legal, financial, and other professional services), supplies, equipment, materials, or any combination of the foregoing.

The requirements of this section apply to Contracts or Subcontracts meeting the thresholds under New York State Executive Law, Article 17-B as follows:

(a) Non-Construction Contracts greater than $25,000;
(b) Non-Construction Contracts, that are initially under $25,000 but subsequent change orders or contract amendments increase the Contract value to above $25,000;
(c) Construction Contracts greater than $100,000; and,
(d) Construction Contracts that are initially under $100,000 but subsequent change orders or contract amendments increase the Contract value to above $100,000.

I. General Provisions

Contractors and Subcontractors are required to comply with New York State Executive Law Article 17-B and 9 NYCRR Part 252 for all State contracts as defined therein, with a value (1) in excess of $25,000 for labor, services (including, but not limited to, legal, legal, financial, and other professional services), supplies, equipment, materials, or any combination of the foregoing, or (2) in excess of $100,000 for the acquisition, construction, demolition, replacement, major repair or renovation or real property and improvements thereon.

II. Contract Goals

A. EFC hereby establishes an overall goal of 6% for SDVOB participation, based on the current availability of qualified SDVOBs. For purposes of providing meaningful participation by SDVOBs, the Contractor should reference the directory of New York State Certified SDVOBs found at: https://online.ogs.ny.gov/SDVOB/search.
B. Pursuant to 9 NYCRR § 252.2(n), Contractor must document "good faith efforts" to provide meaningful participation by SDVOBs as subcontractors or suppliers in the performance of the Contract.

III. SDVOB Utilization Plan

A. In accordance with 9 NYCRR § 252.2(i), Contractor represents and warrants that it has submitted a completed SDVOB Utilization Plan to Recipient prior to the execution of this Contract.
B. Contractor certifies that it will follow the submitted SDVOB Utilization Plan for the performance of SDVOBs on the Contract pursuant to the prescribed SDVOB contract goal set forth above.
C. Contractor further agrees that a failure to use SDVOBs as agreed in the Utilization Plan shall constitute a material breach of the terms of the Contract. Upon the occurrence of such a material breach, the Recipient shall be entitled to any remedy provided herein, including but not limited to, a finding of Contractor non-responsibility.
D. Contractor must report any changes to the Utilization Plan after Contract award and during the term of the Contract to the Recipient's MBO. Contractor shall indicate the changes to the MBO in the next Monthly MWBE-SDVOB Contractor Compliance Report after the changes occurred. At EFC's discretion, an updated SDVOB Utilization Plan form and good faith effort documentation may be required to be submitted. When a Utilization Plan is revised due to execution of a change order, the change order should be submitted to the MBO with the revised Utilization Plan.
E. The Contractor shall submit copies of all fully executed subcontracts, agreements, and purchase orders that are referred to in the SDVOB Utilization Plan to the MBO within 30 days of their execution.

IV. Request for Waiver

A. If Contractor, after making good faith efforts, is unable to comply with the SDVOB Contract goal, Contractor may submit a request for a partial or total waiver to the Recipient, documenting good faith efforts by Contractor to meet such goal. If the documentation included with the waiver request is complete, the Recipient shall forward the request to EFC for evaluation, and EFC will issue a written notice of acceptance or denial within twenty (20) days of receipt.
B. Contractor shall attempt to utilize, in good faith, the SDVOBs identified within its SDVOB Utilization Plan, during the performance of the Contract. Requests for a partial or total waiver of established goal requirements made subsequent to Contract award may be made at any time during the term of the Contract to the Recipient, but must be made no later than prior to the submission of a request for final payment on the Contract.
If the Recipient, upon review of the SDVOB Utilization Plan and Monthly SDVOB Contractor Compliance Report determines that Contractor is failing or refusing to comply with the SDVOB Contract goal and no waiver has been issued in regards to such non-compliance, the Recipient may issue a notice of deficiency to Contractor. Contractor must respond to the notice of deficiency within seven business days of receipt. Such response may include a request for partial or total waiver of SDVOB Contract goals.

V. Monthly SDVOB Contractor Compliance Report ("Monthly MWBE-SDVOB Report")

In accordance with 9 NYCRR § 252.2(q), Contractor is required to report monthly SDVOB contractor compliance to the Recipient during the term of the Contract for the preceding month's activity, documenting progress made towards achieving the Contract SDVOB goals. The Contractor agrees to submit a report on to the Recipient by the third business day following the end of each month over the term of this Contract. The Monthly MWBE-SDVOB Report must be supplemented with proof of payment by the Contractor to its Subcontractors (e.g., copies of both sides of a cancelled check). The final Monthly MWBE-SDVOB Report must reflect all Utilization Plan revisions and change orders.

VI. Breach of Contract and Damages

In accordance with 9 NYCRR § 252.2(s), any Contractor found to have willfully and intentionally failed to comply with the SDVOB participation goals set forth in the Contract, shall be found to have breached the contract and Contractor shall pay damages as set forth therein.

SECTION 3 REQUIREMENTS REGARDING SUSPENSION AND DEBARMENT

The requirements of this section apply to all Contracts and Subcontracts.

The Contractor and any Subcontractors have not been deemed ineligible to submit a bid on or be awarded a public contract or subcontract pursuant to Article 8 of the State Labor Law, specifically Labor Law § 220-b. In addition, neither the Contractor nor any Subcontractors have contracted with, or will contract with, any party that has been deemed ineligible to submit a bid on or be awarded a public contract or subcontract under Labor Law § 220-b.

In addition, the Contractor and any Subcontractors have not been deemed ineligible to submit a bid and have not contracted with and will not contract with any party that has been deemed ineligible to submit a bid under Executive Law § 316.

APPENDIX B: PROJECT REFERENCE DATA

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Water, Bureau of Permits
625 Broadway, Albany, New York 12233-3505
P: (518) 402-8111 | F: (518) 402-9029
www.dec.ny.gov

February 2, 2018

Attn: Supervisor
Town of Black Brook & Town of Jay
11 School Street
PO Box 730
Au Sable Forks, NY 12912

Re: New Requirement to Disinfect Sewage Treatment Plant Effluent
SPDES Permit No. NY 020 1910

Dear Supervisor,

This letter is to inform you of an anticipated State Pollutant Discharge Elimination System (SPDES) permit modification to require the addition of disinfection treatment of your sewage treatment plant effluent. We are also providing information about the availability of DEC/EFC Wastewater Infrastructure Engineering Planning Grants (EPG) that may help you with funding the preparation of an engineering report and planning activities, and the availability of Water Quality Improvement Project (WQIP) program grants that may help you with funding the construction of the disinfection system.

To protect public health and the environment, State regulations require that sewage treatment plant discharges be disinfected. Our records indicate that your SPDES permit does not conform to this requirement; your permit does not currently require disinfection although your discharge impacts waters that could be used for swimming, fishing, and contact recreation. Consequently, the Department of Environmental Conservation (Department) plans to modify your SPDES permit in the next three months to require disinfection treatment. Anticipated draft permit requirements include:

- Disinfection required May 1 – October 31 each year, beginning in 2023.
- Effluent limits for pathogens.
- If UV disinfection is selected, then chlorine monitoring will not be required. If chlorine disinfection is selected, then a total residual chlorine daily maximum effluent limit of 0.030 mg/l (estimated) will be required. Please note that in order to maintain adequate disinfection and achieve this chlorine level it is likely that effluent dechlorination will be necessary.
- A compliance schedule to submit final engineering documents in 2021 and begin operation in 2023.

If you have not completed an engineering report yet, we encourage you to apply for an EPG to assist you with planning for the addition of disinfection treatment. The 2018 Request for Applications will be announced in the Spring. Go to the EPG website for further information (http://www.dec.ny.gov/pubs/81196.html). The Department intends that permittees who have received this letter are eligible for EPG funding as long as the rest of the EPG eligibility criteria are met.

If you have completed an engineering report, we encourage you to apply for a WQIP program grant to assist you with implementation of the disinfection requirement. The 2018 Request for Applications will be announced in the Spring. Go to the WQIP webpage for further information (http://www.dec.ny.gov/pubs/4774.html). The Department intends that permittees who have received this letter are eligible for WQIP funding as long as the rest of the WQIP eligibility criteria are met.

If you would like to discuss the disinfection treatment requirement and the SPDES permit modification, please contact Alison Wasserbauer at (518) 402-8126. If you have questions concerning applying for the EPG and WQIP, please contact Leila Mitchell at (518) 402-8269.

Sincerely,

Shayne A. Mitchell, P.E.
Chief, Wastewater Permits – West Section

Cc: NYSDEC, Regional Water Engineer, R5
NYSDEC, Leila Mitchell
NYSDEC, Catherine Traina
NYSEFC, Co-Funding Coordinator

Engineering and Land Surveying, P.C.

TOWN OF JAY

ESSEX COUNTY, NEW YORK

ENGINEERING REPORT

FOR

AU SABLE FORKS WWTP IMPROVEMENTS

STATE OF NEW YORK
MICHAEL D. PANICHELLI
LICENSED PROFESSIONAL ENGINEER
EXCELSIOR
074751

MJ Project #1075.04

MAY 2020

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LIST OF APPENDICES

EXECUTIVE SUMMARY

- This engineering report evaluates alternatives to provide effluent disinfection at the jointly owned Town of Jay and Town of Black Brook (Towns') wastewater treatment plant (WWTP) in accordance with the schedule of compliance in the Towns' State Pollution Discharge Elimination System (SPDES) permit, NY0201910. Further, this report evaluates additional improvements to the WWTP to achieve compliance with the following planned SPDES permit modifications by the New York State Department of Environmental Conservation (NYSDEC):

  - Total Phosphorous:
    - 1.0 mg/L concentration limit, monthly average

  - Ammonia
    - Summer: 11.8 mg/L concentration limit, monthly average
    - Winter: 18.1 mg/L concentration limit, monthly average

- As discussed in Section 2 of this report, preliminary screening indicates that the WWTP site is located within an area indicated to contain rare plants and/or animals.

  - A screening letter will need to be submitted to the NYSDEC for review and determination of the project's impact. It is not anticipated that the project will have a significant impact as all work will occur within the previously disturbed and developed portion of the WWTP site.

- As discussed in Section 2 of this report, there is a 30-feet wide utility easement and 100-feet wide clearing easement located within the eastern portion of the WWTP property. While no new structures are proposed within the utility easement, the recommend improvements include new underground sewer piping within the easement. Coordination with and approval from New York State Electric and Gas Corporation (NYSEG) will be required for all proposed disturbances and underground utilities proposed within the easements.

- An evaluation and comparison of alternatives for improvements to the WWTP to address secondary treatment improvements for compliance with planned permit modifications (i.e. phosphorous, ammonia) are presented in Section 4.1 and alternatives to provide effluent disinfection are presented in Section 4.2. The recommended alternatives for improvements to the WWTP are presented in Section 6 and include the following, listed in priority:

  - **Effluent Disinfection:**
    - Alternative 2C – Ultraviolet (UV): Includes new UV disinfection system contained within a new fiberglass building for effluent disinfection. Alternative 2C has the lowest associated operational and maintenance (O&M) costs, as well as life cycle cost when compared to Alternative 2B which utilizes chlorination.

  - **Secondary Treatment Improvements:**

    - Alternative 1D – Lagoon Upgrades: Includes new liners, air piping, diffusers, aeration blowers and curtain baffles for lagoons. In addition, fixed film media curtains will be provided in Lagoon No. 2 for ammonia removal, as well as a floating cover in the polishing cell to prevent algae growth and associated impact on effluent disinfection. A new fiberglass chemical feed building will be provided for chemical addition of poly

aluminum chloride (PAC) on the influent pump station forcemain for removal of phosphorous within the lagoons.

- Alternative 1D has the lowest associated costs and maintains the current level of process control and oversight which is relatively minimal for the lagoon process.

- Implementation of Alternative 1D requires taking the lagoons offline sequentially to complete the work within the lagoons. As a result, only one (1) lagoon will be operational at a given time during construction and may result in a temporary reduction in WWTP performance. As presented at the end of Section 4.1.4, the WWTP was able to maintain compliance with the SPDES permit limits from August 2013 to October 2013 when the lagoons were sequentially taken offline to facilitate sludge removal. In conjunction with the sequence of construction presented in Section 6.4, it is not anticipated that any significant SPDES permit non-compliance event(s) will occur during construction.

- As discussed in Section 6, a grade 2/2A Chief Operator may be required for the WWTP based on implementation of effluent disinfection per current SPDES permit and providing nitrification per planned SPDES permit modification for ammonia. However, if the SPDES permit is modified to require monitoring of ammonia only, then no change in operator grade is anticipated to be required.

- As discussed in Section 7, the opinion of probable project cost for the recommended improvements is $4,280,000 and will result in an increase in annual operational and maintenance (O&M) costs of approximately $18,000. The increase in O&M costs is associated with the new effluent disinfection system, as well as the following additional expenses not currently incurred for secondary treatment:
  - Additional energy usage of 16,331 kWh/yr associated with increasing the lagoon aeration blowers from 7.5 HP to 10 HP.
  - Chemical usage costs associated with phosphorous removal.
  - Short lived asset replacements including fixed film media curtains utilized for ammonia removal, floating cover in Lagoon No. 2 polishing cell utilized to prevent algae growth and chemical feed equipment utilized for phosphorous removal.

- The Engineering Report Certification is included in Appendix T and the completed Smart Growth Assessment Form for the Project is included in Appendix U.

- This report has been revised based on comments received by the NYSDEC on April 22, 2020. Included in Appendix V are responses to the comments provided.

1.0 INTRODUCTION

1.1 PROJECT BACKGROUND

The Town of Jay and the Town of Black Brook (Towns') jointly own, operate and maintain a septic tank effluent collection system and wastewater treatment plant (WWTP) servicing the Au Sable Forks hamlet area. The Au Sable Forks – Jay Sewer District is located in Essex County and the Au Sable Forks – Black Brook Sewer District is located in Clinton County, New York. The NYSDEC regulates the effluent wastewater quality standards and limits to which the Towns' WWTP is allowed to discharge to the Au Sable River. A copy of the State Pollution Discharge Elimination System (SPDES) permit, NY 0201910, for the Towns' WWTP is included in Appendix A.

Currently, the WWTP does not provide disinfection of the wastewater effluent discharged to the Au Sable River. In 2018, the NYSDEC issued a modification to the Towns' SPDES permit requiring the WWTP to implement seasonal (May 1st to October 31st) effluent disinfection by May 1, 2023 for compliance with the following limits:

- Fecal Coliform:
  - 7 Day Geometric Mean: 400 No. / 100 mL
  - 30 Day Geometric Mean: 200 No. / 100 Ml

- Total Residual Chlorine:
  - Daily Maximum: 2.0 mg/L, 2.45 lbs/day

In addition, the NYSDEC indicated in July 2019 that the following additional SPDES permit modifications will likely be incorporated during the next SPDES permit renewal which occurs in 2023:

- Total Phosphorous:
  - The current load limit of 4.47 lbs/day monitored as a 12-month rolling average, revised to a concentration limit of 1.0 mg/L monitored on a monthly average basis.

- Ammonia:
  - Addition of an effluent ammonia limit of 11.8 mg/L in the summer and 18.1 mg/L in the winter. At a minimum, the NYSDEC will require monitoring of ammonia.

Included in Appendix B is correspondence from the NYSDEC regarding planned permit modifications for phosphorous and ammonia.

1.2 NEED FOR PROJECT

The Towns' current WWTP, consisting of aerated facultative lagoons, will not be able to provide the level of treatment necessary for SPDES permit compliance with effluent disinfection requirements and anticipated permit modifications for total phosphorous and/or ammonia. M.J. Engineering and Land Surveying, P.C. (MJ) has been authorized by the Town of Jay to prepare this Engineering Report to identify necessary improvements to the Towns' WWTP to allow for compliance with both current and planned SPDES permit limits.

2.0 PLANNING

2.1 PROJECT AREA

The improvements to the WWTP will be contained within the property boundaries of the existing WWTP site, Tax Parcel ID 8.3-1-32.120 and 8.3-1-36.200, which is located at 215 Grove Road within the Town of Jay. Included in Appendix C is a site location map which shows the WWTP site and property boundaries.

2.1.1 Utility Easements

Based on review of deeds, there is a 30-feet wide utility easement for the New York State Electric and Gas Corporation (NYSEG) which runs north-south along the east side of the WWTP property boundary. In addition, NYSEG was granted a 50 feet wide clearing easement, each side of the pole line, for purposes of protecting the overhead aerial electrical lines within the utility easement.

Included in Appendix D are the easements granted to NYSEG as well as a boundary survey prepared C.T. Male Associates, P.C. issued June 26, 1990 which show the easements.

2.2 POPULATION AND TRENDS

Per the U.S. Census Bureau, populations trends from 2009 to 2017 for the Town of Jay and Town of Black Brook are as follows:

- Town of Jay
  - 2009 Population: 2,543 residents
  - 2017 Population: 2,709 residents
  - Population Change (2009-2017): 166 residents (+6.5%)

- Town of Black Brook
  - 2009 Population: 1,852 residents
  - 2017 Population: 1,385 residents
  - Population Change (2009-2017): - 467 residents (-25%)

Using the population trends from 2009 to 2017 for each Town, the projected population by 2039 for the Town of Jay is 3,697 residents and for the Town of Black Brook is 449 residents. The total projected population for both Towns by 2039 is 4,146 residents or a total increase in 52 residents, when compared to the total population in 2017 of 4,094.

The current average daily flow to the WWTP is 55,000 gpd and the WWTP is permitted to discharge up to 147,000 gpd. If 100 gpd per resident is applied to the increase in population, the projected average daily flow by 2039 is estimated to be 60,200 gpd, which is only 40% of the permitted flow. Therefore, the current permitted flow and associated WWTP treatment capacity will not require modification to accommodate anticipated future population growth.

2.3 SITE CHARACTERISTICS

2.3.1 Soils

Site soils and geology characteristics within the WWTP site were obtained from the USDA Natural Resources Conservation Service online Web Soil Survey. The site is comprised of Adams loamy sand (85% total area) with slopes ranging from 3 to 8%, and Monadnick-Adams complex (15%) with slopes ranging from 25 to 60%. Adams loamy sand and Monadnick-Adams complex have a depth to bedrock, densic material and groundwater of more than 6.7 ft below grade. Included in Appendix E is a soil survey map of the WWTP site.

During the design phase of this project, it is recommended that a geotechnical investigation including soil borings be performed in the locations of new structures to support foundation design and verify the presence of rock and/or groundwater.

2.3.2 Agricultural

Included in Appendix F is an Agricultural Districts Map for Essex County from the NYS Department of Agriculture and Markets (NYSAM). The project area (WWTP site) is not located within an agricultural district. As such, no further actions or coordination with NYSAM is anticipated to be required.

2.3.3 Environmental

Included in Appendix G is an environmental resource map of the WWTP site obtained from the NYSDEC's GIS-based Environmental Resource Mapper. No state regulated wetlands are shown to be within the vicinity of the WWTP site. However, the WWTP site is shown to be located within the vicinity of rare plants and endangered or threatened animals. Therefore, a project screening letter will need to be sent to the NYSDEC to determine whether this project will impact rare plants and/or animals and whether a habitat assessment will be required.

Included in Appendix H is a federal wetlands map obtained from the National Wetlands Inventory Mapper which shows the western boundary of the WWTP site to be within freshwater forested/shrub type wetlands. It is anticipated that this project will not impact or occur within the federal wetlands as the improvements are located to the north and east of the wetlands, within the previously disturbed portion of the site.

2.3.4 Flood Hazard

Included in Appendix I is FEMA flood mapping for the WWTP site which shows the majority of the site to be located in an area of minimal flood hazard. Further, the 100-year flood elevation (1% annual chance of flood hazard) is indicated to be 526-feet. With the exception of the outfall piping to the Au Sable River, all existing WWTP treatment processes are located above the 100-year flood elevation. In addition, the minimum hydraulic grade of the existing secondary treatment system (i.e. lagoons) at the WWTP is 531-feet, which provides sufficient positive pressure

to convey effluent wastewater to the Au Sable River without backup into the lagoon system during a 100-year flood event.

2.3.5 Cultural / Historic Resources

Included in Appendix J is a map obtained from the NYS Office of Parks, Recreation and Historic Preservation (OPRHP) GIS-based Cultural Resource Information System (CRIS) which indicates that the WWTP site is not located within an archeologically sensitive area. As such, no further actions or coordination with OPRHP is anticipated to be required.

2.4 PLANNED SPDES PERMIT MODIFICATIONS

As the WWTP is located within the Lake Champlain Basin and discharges effluent to the Au Sable River, which was reclassified by the NYSDEC as a C(t) waterbody in 2017, the NYSDEC is planning to incorporate the following modifications to the Towns' SPDES permit in 2020:

- Influent Sampling
  - Monthly sampling for influent BOD_5 and TSS will be required.

- Total Phosphorous:
  - New concentration limit monitored as a monthly average will be added.
  - The limit will be determined following completion of a future optimization study to be performed at the WWTP. The modified permit will include a compliance schedule for completion of the optimization study. For purposes of this report, a limit of 1.0 mg/L was utilized.
  - The current load limit of 4.47 lbs/day monitored as a 12-month rolling average will remain.

- Ammonia:
  - Monitoring of effluent ammonia via monthly sampling will be required.
  - For purposes of this report, and based on effluent discharge to the Au Sable River (C(t) waterbody), the following targeted effluent ammonia was utilized:
    - Summer: 11.8 mg/L
    - Winter: 18.1 mg/L

Included in Appendix B is correspondence from the NYSDEC regarding planned permit modifications for phosphorous and ammonia.

3.0 EXISTING CONDITIONS

3.1 WWTP DESCRIPTION

The WWTP was constructed in the early 1990's and consists of aerated facultative lagoons which provide both primary and secondary treatment, as well as sludge storage and digestion. The WWTP receives septic tank effluent wastewater flows from the collection systems in both sewer districts. This section provides an overview of the existing WWTP process components.

Included in Appendix K is a site plan showing the existing layout of the WWTP and based on a topographic survey performed by Geomatics Land Surveying, P.C. in November 2019.

3.1.1 Influent Pump Station

Influent flows from the septic tank effluent collection system are conveyed to the influent pump station at the WWTP site. In 2018, the above-grade vacuum primed pumping system was replaced with a new submersible pumping system. The influent pump station includes a precast wetwell with two (2) submersible pumps and level sensing instrumentation and a precast valve vault for access to check and isolation valves on each pumps discharge line. Each pump has a design capacity of approximately 430 gpm. The influent pump station pumps wastewater to an influent valve chamber, where it can then be conveyed to Lagoon No. 1, Lagoon No. 2 or directly to the effluent chamber. During normal operations, flow is conveyed to Lagoon No.1.

A manual transfer switch is provided to allow for the influent pump station to be powered by a portable generator in the event of a power outage.

- **Wetwell**
  - Dimensions: 6 ft diameter & 12.75 ft deep
- **Influent Pumps**
  - # of Pumps: Two (1 duty, 1 standby)
  - Type: Submersible, Solids Handling
  - Pump Capacity: 430 gpm

3.1.2 Septage Receiving Station

A septage receiving station is provided adjacent to Lagoon No. 1 and consists of a concrete chamber containing a coarse bar rack with 3/4-inch bar spacing, followed by a grit trough with collection sump. The intent of this station is to provide preliminary treatment of septic tank septage prior to introduction into the lagoons. An 8-inch pipe conveys the preliminary treated septage by gravity to the influent valve chamber for discharge into Lagoon No. 1. The septage receiving station is not used as solids from septic tanks within the collection system are not brought to the WWTP for treatment and disposal.

3.1.3 Influent Flow Distribution

An influent valve chamber is provided adjacent to Lagoon No. 1 and is piped and valved to provide the following functions:

- Direct pumped flows from the influent pump station to Lagoon No. 1.
- Isolate Lagoon No. 1 and directed pumped flows from the influent pump station to Lagoon No. 2.
- Direct preliminary effluent (screened, degritted septage) from the septage receiving station to Lagoon No. 1 or No. 2.
- Direct secondary effluent recirculated from the effluent chamber to Lagoon No. 1 or No. 2.

3.1.4 Primary/Secondary Treatment

Primary and secondary treatment as well as sludge storage and stabilization are provided in Lagoons No. 1 and No. 2 which are operated in series. Through operation of the three-way plug valve in the influent valve chamber, Lagoon No. 1 can be isolated and influent flows pumped directly to Lagoon No. 2 or the effluent chamber. A transfer valve chamber located on the piping between Lagoon No. 1 and No. 2 provides the following function:

- Conveyance of flow from Lagoon No. 1 to Lagoon No. 2 (normal operation)
- Isolation of Lagoon No. 2 and conveyance of effluent flow from Lagoon No. 1 to the effluent chamber.
- Isolation of Lagoon No. 1 and conveyance of influent flows to Lagoon No. 2.

The lagoons are of the aerobic, flow-through partially mixed type and do not provide solids recycle. During normal operations, septic tank effluent is pumped by the influent pump station to Lagoon No. 1, followed by conveyance to Lagoon No. 2. Lagoon No. 1 acts as the primary treatment cell and is equipped with fifteen (15) Reef II fine bubble diffusers, each with an air flow range of 4 to 15 cfm. In the primary cell, BOD is reduced, and solids settle (and accumulate) in the quiescent areas where they are digested anaerobically. Lagoon No. 1 provides an operating depth and volume of approximately 10-feet, 1,950,000 gallons, respectively.

Lagoon No. 2 is divided into an aerated cell and a polishing cell of equal size which are separated by a Hypalon coated polyethylene curtain baffle. Effluent from Lagoon No. 1 is conveyed via gravity to the aerated cell in Lagoon No. 2 which is equipped with five (5) Reef II fine bubble diffusers. The aerated cell provides additional BOD removal and solids settling in the quiescent areas. Two (2) windows located in the curtain baffle allow for flow to be conveyed from the aerated cell to the polishing cell which provides final sedimentation. The polishing cell is also equipped with three (3) Reef II fine bubble diffusers which are normally isolated from the air supply to improve final settling. Lagoon No. 2 provides an operating depth of 10-feet, which corresponds to an operating volume of 975,000 gallons in both the aerated cell and polishing cell.

Three (3) 7.5 HP rotary lobe blowers (Roots 33U-RAI) are located within the Control Building and used to supply air to the diffused air systems in both lagoons. Each blower has a design capacity of 112 SCFM at 5.8 psig with the maximum sheave arrangement. The blowers can also operate at 50% and 75% of the design capacity via reduced sheave sizes stored on site. During normal operations, one (1) blower operating at design capacity (100%) or two (2) blowers operating at 75% design capacity are required to supply air to the lagoons. All three (3) original blowers have been replaced since the WWTP was brought online in the early 1990s.

The diffused air system is operating at reduced performance due to aged (clogged) diffusers and leaks in the air supply lines, resulting from pipe damage caused by freezing during the winter. Based on age and condition, the air supply piping and diffused air system is in need of replacement.

Each lagoon is equipped with a 36 mm polyester reinforced Hypalon liner which has a 20-year service life. The liners are original to the WWTP and in need of replacement.

- **Lagoon:**
  - # of Lagoons: 2
  - Type: Aerobic flow through partially mixed
  - Lagoon No. 1:
    - Upper Dimensions (top of berm): 252 feet long x 152 feet wide
    - Bottom Dimensions: 180 feet long x 80 feet wide
    - Operating Depth: 10 ft
    - Operating Volume: 1,950,000 gallons
    - Hydraulic Retention Time at Permitted Flow: 13.2 Days
    - # of Air Diffusers: 15
    - Liner: 36 mm polyester reinforced Hypalon chlorosulfonated polyethylene
  - Lagoon No.2 - Aerated Cell
    - Upper Dimensions (top of berm): 126 feet long x 152 feet wide
    - Bottom Dimensions: 90 feet long x 80 feet wide
    - Operating Depth: 10 ft
    - Operating Volume: 975,000 gallons
    - Hydraulic Retention Time at Permitted Flow: 6.6 Days
    - # of Air Diffusers: 5
    - Liner: 36 mm polyester reinforced Hypalon chlorosulfonated polyethylene
  - Lagoon No.2 - Polishing Cell
    - Upper Dimensions (top of berm): 126 feet long x 152 feet wide
    - Bottom Dimensions: 90 feet long x 80 feet wide
    - Operating Depth: 10 ft
    - Operating Volume: 975,000 gallons
    - Hydraulic Retention Time at Permitted Flow: 6.6 Days
    - # of Air Diffusers: 3
    - Curtain Baffle: 0.9 mm Hypalon coated polyester skirt

    - Liner: 36 mm polyester reinforced Hypalon chlorosulfonated polyethylene

- **Aeration Blowers:**
  - # of Blowers: 3 (2 duty, 1 standby)
  - Type: Rotary Lobe
  - Design Capacity: 112 SCFM @ 5.8 psi, 1750 rpm
  - Make/Model: Roots 33U-RAI, 7.5 HP

3.1.5 Effluent Flow Monitoring

Effluent from the polishing cell in Lagoon No. 2 is conveyed by gravity via an 8-inch PVC pipe to the adjacent effluent chamber, which contains a 45° sharp edged V-notch weir and ultrasonic level sensor for effluent flow monitoring. The effluent chamber also receives overflow from Lagoon No. 2 via a 6-inch ductile iron pipe, as well as bypass flows from the influent chamber and/or transfer valve chamber via an 8-inch PVC pipe. A submersible effluent pump located within the chamber is provided to recirculate effluent back to the lagoons via the influent valve chamber or to the septage receiving station to assist with flow conveyance. The effluent recirculation system is not used, and the recirculation pump is believed to no longer be functional.

Flows from the effluent chamber are conveyed via 8-inch PVC piping to an outfall manhole, where it transitions to 8-inch ductile iron piping which extends approximately 50-feet into the Au Sable River and discharges effluent via three (3) 8-inch 45 degree bends.

3.1.6 Solids Dewatering

Four (4) reed bed cells, located to the South of the septage receiving station, are utilized for dewatering digested solids from the lagoons. Each cell is approximately 24 feet wide x 48 feet long and provides a surface area of 1,152 square feet. Solids were last removed from the lagoons and transferred to two (2) reed bed cells for dewatering in 2017.

3.1.7 Emergency Power

A new 80 kW emergency generator and automatic transfer switch were installed at the WWTP in 2019 and serve both the WWTP and influent pump station.

3.2 WWTP PERFORMANCE

Provided in Table 1 below is a summary of the effluent monitoring performed at the WWTP from 2015 thru May 2019, which is included in Appendix L for reference. Overall, the WWTP has performed well and been in compliance with flow, concentration, load and pH permit limits. However, from 2015 thru May 2019, there were a total of two (2) non-compliance events for 5-Day Biological Oxygen Demand (BOD_5) percent removals (less than 85%) and five (5) non-compliance events for Total Suspended Solids (TSS) percent removals (less than 85%). Influent monitoring is not required by the SPDES permit and percent removals are derived using an assumed value of 200 mg/L for both BOD_5 and TSS. As a result, the actual percent removals are unknown and the effluent BOD_5 and TSS concentration and load limits were in compliance with the permit when these events occurred.

TABLE 1
2015 TO 2019 WWTP PERFORMANCE [1]

Parameter	Year					
	2015	2016	2017	2018	2019 [2]	2015 - 2019[2]
Flow						
- Avg. Daily (MGD)	0.050	0.043	0.047	0.054	0.056	0.049
- Max Month (MGD)	0.063	0.059	0.053	0.064	0.060	0.064
Effluent BOD_5						
- Avg. Daily (lbs/day)	6.4	6.5	5	3.9	3.9	5.2
- Max Month (lbs/day)	14.0	14.0	11	5.9	4.5	14.0
- Avg. % Removal	92.9	91.6	94	95.6	96.0	93.8
- Min. % Removal	85.0	81	86	94	96.0	81.0
Effluent TSS						
- Avg. Daily (lbs/day)	4.7	7.4	7	2.0	3.4	5.0
- Max Month (lbs/day)	6.9	19.0	15	5.8	5.5	19.0
- Avg. % Removal	94.3	90.7	93	97.8	96.6	94.2
- Min. % Removal	91.0	76	81	94	95.0	76.0
Effluent Total Phosphorous						
- Avg. Daily (mg/L)	4.0	4.9	4.6	5.7	4.7	4.8
- Avg. Daily (lbs/day)	1.6	1.8	1.8	2.5	2.2	2.0
- Max Month (lbs/day)	1.8	2.5	2.4	4.1	2.4	4.1
Effluent Settleable Solids						
- Avg. Daily (ml/l)	0.1	0.1	0.1	0.1	0.1	0.1
- Max Day (ml/l)	0.1	0.1	0.1	0.1	0.1	0.1
Effluent pH						
- Min. (SU)	7.4	7.0	7.1	7.0	6.8	6.8
- Max. (SU)	8.0	8.5	9.0	8.0	7.3	9.0

Notes:

[1] Per effluent monitoring performed at the WWTP, see Appendix L for historical results.

[2] Includes effluent flow monitoring thru May 2019.

[3] Presents a summary of the effluent flow monitoring performed from 2015 thru May 2019.

3.3 CURRENT FLOWS AND LOADS

Provided in Table 2 below is summary of the current flows and loads to the WWTP. As influent sampling is not required by the SPDES permit, typical values for medium to high strength domestic wastewater were used for purposes of determining influent phosphorous and ammonia loads.

TABLE 2
CURRENT FLOWS AND LOADS

Parameter	Value
Flow	
- Avg. Daily (MGD) [1]	0.055
- Max Month (MGD) [1]	0.064
- Peak Hour (gpm) [2]	430
Influent BOD_5	
- Concentration (mg/L) [3]	200
- Avg. Daily (lbs/day) [4]	91.7
- Max Month (lbs/day) [5]	106.8
Influent TSS	
- Concentration (mg/L) [3]	200.0
- Avg. Daily (lbs/day) [4]	91.7
- Max Month (lbs/day) [5]	106.8
Influent Total Phosphorous	
- Concentration (mg/L) [6]	10.0
- Avg. Daily (lbs/day) [4]	4.6
- Max Month (lbs/day) [5]	5.3
Influent Ammonia	
- Concentration (mg/L) [6]	40
- Avg. Daily (lbs/day) [4]	18.3
- Max Month (lbs/day) [5]	21.4

Notes:

[1] Based on effluent monitoring performed at the WWTP from 2018 thru May 2019.

[2] Based on capacity of influent pump station.

[3] Assumed and based on value used in SPDES permit for determining percent removals.

[4] Derived using average daily flow.

[5] Derived using maximum month flow.

[6] Assumed and based on typical value for medium to high strength domestic wastewater.

3.4 DESIGN FLOWS AND LOADS

Provided in Table 3 below is a summary of the design flows and loads to the WWTP, where the projected increase in population discussed in Section 2 is accounted for in the average daily flows and loads. The permitted flow is not anticipated to require modification based on the current maximum month flow (0.064 MGD) and minimal projected future growth. Therefore, the design flows and loads for evaluating the necessary capacity of the WWTP improvements discussed in Section 4 are based on the current permitted flow of 0.147 MGD.

TABLE 3
DESIGN FLOWS AND LOADS

Parameter	Influent Value	Effluent Value	
Flow			
- Avg. Daily (MGD) [1]	0.062	0.062	
- Design Max Month (MGD) [2]	**0.147**	**0.147**	
- Peak Hour (gpm) [3]	430		
BOD_5			
- Concentration (mg/L) [4, 5]	200	30	
- Avg. Daily (lbs/day) [6]	103.4	16	
- Design Max Month (lbs/day) [7]	**245.2**	**37**	
TSS			
- Concentration (mg/L) [4, 8]	200.0	30	
- Avg. Daily (lbs/day) [6]	103.4	16	
- Design Max Month (lbs/day) [7]	**245.2**	**37**	
Total Phosphorous			
- Concentration (mg/L) [9, 10]	10.0	1	
- Avg. Daily (lbs/day) [6]	5.2	0.52	
- Design Max Month (lbs/day) [7]	**12.3**	**1.23**	
Ammonia		Summer	Winter
- Concentration (mg/L) [9, 10]	40	11.8	18.1
- Avg. Daily (lbs/day) [6]	20.7	6.1	9.4
- Design Max Month (lbs/day) [7]	**49.0**	**14.5**	**22.2**

Notes:

[1] Includes an additional 5,200 gpd to account for projected future growth.

[2] Based on permitted flow.

[3] Based on capacity of influent pump station.

[4] Influent concentration per assumed value in SPDES permit.

[5] Per SPDES permit effluent limit.

[6] Derived using average daily flow.

[7] Derived using maximum month flow.

[8] Design effluent concentration per disinfection requirements. Permit limit is 70 mg/L.

[9] Influent concentration assumed and based on typical value for medium to high strength domestic wastewater.

[10] Design effluent concentration per draft limits provided by NYSDEC in July 2019 for planned SPDES permit modification.

4.0 ANALYSIS OF ALTERNATIVES

This section presents alternatives to provide seasonal disinfection, as well as for improvements to the secondary treatment system to allow for compliance with the planned SPDES permit modifications for ammonia and phosphorous. Included in Appendix M are detailed cost estimates deriving the opinion of probable project cost associated with each alternative and include the following factors:

- Construction Costs
  - Escalation to Construction Start (yr 2022): 6%
  - General Conditions: 10%
  - Contractor Overhead & Profit: 15%
  - Design Contingency: 20%
- Non-Construction Costs
  - Legal, Administration, Engineering: 20%

Included in Appendix N are life cycle costs associated with each alternative and based on the following:

- Life Cycle Period: 30-years (assumed loan period for project financing)
- Inflation Rate: 3% (for deriving future maintenance costs)
- Utility Escalation Rate: 1% (for deriving future electrical costs)
- Interest Rate: 3.5% (for deriving present value)

The short-lived assets for each alternative, including rehabilitation and/or replacement schedules and costs, are included under the maintenance breakdown in the life cycle costs. Annual operational and maintenance (O&M) costs presented for each alternative are derived by dividing the total present value of future O&M costs by the life cycle period of 30 years.

4.1 SECONDARY TREATMENT IMPROVEMENTS

This section evaluates alternatives for improvements and/or upgrades to the secondary treatment system to achieve compliance with the planned SPDES permit modifications for ammonia and phosphorous. The sizing and capacity of the alternatives are based on the design flows and loads listed in Table 3, Section 3.4. Secondary effluent will be conveyed to the disinfection alternatives evaluated in Section 4.2.

4.1.1 Alternative 1A – No Action

The existing aerated facultative lagoons used for both primary and secondary treatment will not be able to comply with the draft permit limits for ammonia and phosphorous. If no action is taken, the WWTP will not be able to comply with the planned SPDES permit modifications. As such, this alternative will not be considered further.

4.1.2 Alternative 1B – Sequencing Batch Reactors

Refer to Appendix O for a preliminary site plan showing the improvements associated with Alternative 1B.

Overview:

Alternative 1B includes replacing the existing lagoons with Sequencing Batch Reactors (SBRs) which utilize activated sludge and will provide reduction of BOD_5 TSS, and ammonia. The SBRs have a small footprint and can be installed outside the footprint of the existing lagoons to maintain continuity of treatment during construction. Chemical addition with poly aluminum chloride (PAC) will be provided to facilitate phosphorous removal via settling in, and wasting from the SBRs. Influent flow equalization will be provided after the existing influent pump station to maximize SBR performance and allow for a more consistent wastewater feed over a 24-hour period through storage and dilution of diurnal peak flows and loads. The existing reed beds will continue to be used for solids dewatering. Solids from the SBRs will be wasted to aerobic digesters such that the volatile solids content to the reed beds is no more than 70%, as recommended in TR-16 – Guides for the Design of Wastewater Treatment Works.

A new metal-paneled control building with approximate dimensions of 22-feet x 22-feet will be provided to the west of the reed beds and consist of three (3) separate rooms for the following:

- Electrical and control panels
- Aeration blowers for influent flow equalization and digestion
- Phosphorous removal chemical feed system

Influent Flow Equalization

Influent flow equalization and pumping will be provided upstream of the SBRs and receive septic tank effluent from the existing influent pump station. Provided below is a summary of the influent flow equalization components:

- Flow Equalization Tankage:
  - Type:
    - Sideline with flow equalization pump station
  - Configuration:
    - One (1) cast-in-place concrete tank with two (2) separate compartments
  - Location:
    - Within footprint of Lagoon No. 1
  - Dimensions (per Compartment):
    - 13-feet wide x 26-feet long with a maximum operating depth of 12-feet
  - Volume:
    - Each compartment 30,000 gallons (60,000 gallons total)
- Aeration/Mixing System:
  - Mixing Type:

- Coarse bubble diffused air within compartments
- Air Mixing Capacity:
  - 13.5 cfm / 1000 ft^3 storage volume
- Aeration Blowers:
  - Quantity: Three (3) blowers to provide one (1) duty equalization blower, one (1) duty digester blower and one (1) standby blower to serve either process
  - Type: Positive Displacement, Rotary Lobe
  - Capacity/Size (per Blower): 110 scfm, 7.5 HP
  - Location: New control building

➢ Flow Equalization Pump Station:
- Function:
  - Pump influent equalized flows to the SBRs
- Location:
  - To the south of the equalization tank, outside the footprint of Lagoon No. 1
- Configuration:
  - 6-foot inside diameter precast wetwell with two (2) submersible pumps and level sensing instrumentation
  - 5-foot square precast valve vault for submersible pump discharge check and isolation valves
- Pumps:
  - Type: Submersible, non-clog mounted on rails for removal
  - Quantity: 2 (1 duty, 1 standby)
  - Capacity/Size (per Pump): 250 gpm, 3 HP
  - Controls/Operation: Timed dosing

SBRs

Secondary treatment will be provided by two (2) SBRs located within a cast-in place concrete tank with divider wall located south of Lagoon No. 1. The SBRs utilize activated sludge for both BOD_5 and ammonia reduction and operate as a batch process to combine aeration and settling within the same tank, thereby eliminating the need for downstream clarifiers and a return activated sludge process. The operational sequence of the SBR batch cycle will consist of fill, react, settle, decant and idle/sludge wasting.

Influent and effluent (decant) control valves will be provided for each SBR to control flow into and out of the tanks. A stationary decanter will be provided in each SBR and used to withdraw the treated water from the tank. The decanters will be of the solids excluding type and air operated to prevent mixed liquor solids from entering the decanter during the react cycle. Each SBR will be equipped with a level transducer, backup level floats and a dissolved oxygen (DO) sensor.

Jet aspiration will be provided for aeration (minimum 2.0 mg/L DO) and mixing with each SBR equipped with a jet aspiration pump, air intake manifolds and stainless injection nozzles. With jet aspiration, the high velocity of the mixed liquor (liquid) being pumped (via the submersible jet mixing pump) through the inner nozzle creates a venturi effect and pulls atmospheric air into the outer nozzle where the

air and liquid are mixed to provide high oxygen transfer and tank turnover. Further, the high velocity of the liquid jet plume in the nozzle shears the air creating fine bubbles, which are dispersed with the mixed liquor being pumped. The jet aspiration pumps are of the submersible, chopper-type and mounted on rails to facilitate removal/installation without the need to enter or drain the SBR tank. A jib crane will be provided to facilitate removal of the jet aspiration pumps.

During average day conditions, approximately 1,000 gallons total of waste activated sludge (WAS) will be produced. WAS will be removed via a submersible, non-clog solids handling pump located within each SBR. The pumps will be mounted on rails to facilitate removal and replacement without the need to enter or drain the tank. A portable hoist will be provided to facilitate removal of the smaller sludge wasting pumps. WAS will be pumped to the aerobic digesters for volatile solids reduction prior to solids dewatering in the reed beds. The sludge wasting forcemain will be valved to allow for discharge to the influent flow equalization tank to facilitate tank draining and/or exchange of activated sludge.

Provided below is a summary of the SBR components:

- SBR Tankage:
  - Configuration:
    - One (1) cast-in-place concrete tank with two (2) SBRs separated by a divider wall
  - Dimensions (per SBR basin):
    - Basin Width: 16.0-feet
    - Basing Length: 34-feet
    - Basin Height: 14.5-feet
    - Basin Depth at Low Water Level (LWL): 10-feet
    - Basin Depth at High Water Level (HWL): 12.5-feet
    - Basin Volume at HWL: 50,800 gallons
- Operation:
  - Primary: Batch Fill and Draw (both SBRs operational)
  - Secondary: Continuous Fill and Draw (1 SBR operational)
- Design Parameters:
  - Influent:
    - Flows and loads per Table 3, Section 3.4
  - Effluent:
    - BOD_5 and TSS: 30 mg/L
    - Settleable Solids: 0.3 ml/L
    - Ammonia: 11.8 mg/L-Summer, 18.1 mg/L – Winter
    - Phosphorous: 1.0 mg/L
    - Decanted (effluent) flow rate: 400 gpm
- Process Equipment:
  - Influent Control Valves:
    - Quantity: 2 (1 per SBR)
    - Type/Size: 4-inch motor actuated plug valve
  - Effluent Control Valves:
    - Quantity: 2 (1 per SBR)
    - Type/Size: 6-inch motor actuated plug valve

- Decanters:
  - Quantity: 2 (1 per SBR)
  - Type: Solids excluding
  - Weir Length: 4-feet
- Jet Aspiration Pumps:
  - Type: Submersible, chopper
  - Quantity: 3 (2 duty, 1 spare)
  - Capacity/Size (per Pump): 780 gpm, 10 HP
- WAS Pumps:
  - Type: Submersible, non-clog
  - Quantity: 3 (2 duty, 1 spare)
  - Capacity/Size (per Pump): 100 gpm, 2.1 HP
- Instrumentation: per SBR
  - One (1) level transducer and five (5) backup floats
  - One (1) DO sensor and analyzer

Phosphorous Removal

A PAC chemical feed system will be provided in the new control building and consist of two (2) skid-mounted chemical pumps (1 duty, 1 standby) and a containment pallet for three (3) 55-gallon chemical drums. Approximately 120 gallons of PAC is needed to provide 30 days of storage during average day phosphorous loads (per Table 3). PAC will be injected into the common forcemain from the new flow equalization pump station to facilitate phosphorous removal (reaction, settling) in the SBRs. Controls will be provided such that the chemical feed pumps operate in conjunction with that of the flow equalization pumps.

Aerobic Digesters

Aerobic digestion will be provided to reduce the volatile solids content of the waste activated sludge generated from the SBR process prior to solids conveyance to the reed beds for dewatering. Provided below is a summary of the digestion components:

- Aerobic Digestion:
  - Configuration:
    - One (1) cast-in-place concrete tank with two (2) separate digester compartments and one (1) common compartment for supernatant return pumping
  - Dimensions (per Compartment):
    - 12-feet wide x 20-feet long with a maximum operating depth of 11.25-feet
  - Volume:
    - Each compartment 20,000 gallons (40,000 gallons total)
  - Operation: Series

  - Solids Retention Time:
    - 40 days at average day SBR sludge production of 1000 gallons

- Location:
  - West of the reed beds, adjacent to the new control building

- Aeration/Mixing System:
  - Type
    - Coarse bubble diffused air within compartments
  - Air Mixing Capacity:
    - 20 cfm / 1000 ft^3 storage volume
  - Aeration Blowers:
    - Three (3) blowers provided for influent flow equalization and digestion
    - See flow equalization summary for more info
- Supernatant Removal:
  - Two (2) telescoping valves (1 per digester compartment) which decant to the common supernatant return compartment
  - One (1) 2.1 HP submersible, solids handling, rail mounted supernatant pump for supernatant return to influent flow equalization tank
- Digested Sludge Pumps
  - Function:
    - Pump digested sludge to the reed beds
  - Location:
    - Digester compartments
  - Type:
    - Submersible, non-clog mounted on rails for removal
  - Quantity: 2
    - One (1) duty pump (last compartment in series) and one (1) standby (first compartment in series)
  - Capacity/Size (per Pump):
    - 100 gpm, 2.1 HP
- Instrumentation
  - Digesters: per Compartment
    - One (1) level transducer and two (2) backup level floats for high and low level alarm
    - One (1) DO sensor
  - Supernatant Chamber:
    - Four (4) level floats

Effluent Flow Monitoring

The existing effluent chamber downstream of Lagoon No. 2, which is currently utilized for effluent flow monitoring will be removed. A new packaged fiberglass metering manhole equipped with a 6-inch Parshall flume and ultrasonic level sensor will be provided downstream of the SBRs for effluent flow monitoring. A flow transmitter and flow chart recorder will be provided in the new control building for monitoring and recording effluent flows.

Sequence of Construction

To maintain continuity of treatment during construction, the work will be completed in the following sequence:

- Re-route forcemain and underground power associated with influent pump station around location of secondary treatment (i.e. SBRs) improvements.
  - A temporary pumping system will be required during re-route of forcemain and power associated with influent pump station.

- Construct secondary treatment, digestion and control building improvements.
  - Existing influent pump station will pump to SBRs during start-up via modifications to re-routed forcemain.
  - A temporary pumping system will pump SBR effluent to Lagoon No. 1 during start-up.

- Construct influent flow equalization and effluent disinfection improvements within Lagoon No. 1. Connect effluent piping to existing outfall piping.
  - Following successful start-up of SBRs, Lagoon No. 1 will be taken offline and effluent from SBRs temporarily pumped to Lagoon No. 2 until work is completed within Lagoon No. 1.

Capital, Operation and Maintenance Costs

The following costs are associated with Alternative 1B:

- Capital Cost: $4,440,000
- Annual O&M Costs: $37,300 (as present value)
  - Equipment Operation:
    - One (1) - 7.5 HP Flow Equalization Blower (24/7)
    - One (1) - 3 HP Flow Equalization Pump (4.5 hrs per day)
    - SBR #1 - 10 HP Jet Aspiration Pump (7 hrs per day)
    - SBR #1 - 2.1 HP WAS Pump (0.1 hrs per day)
    - SBR #2 - 10 HP Jet Aspiration Pump (7 hrs per day)
    - SBR #2 - 2.1 HP WAS Pump (0.1 hrs per day)
    - One (1) - 7.5 HP Aerobic Digester Blower (24/7)
    - One (1) - 2.1 HP Digested Sludge Pump (0.2 hrs per day)
  - Chemical Usage:
    - 3.5 gpd PAC Chemical Usage (P removal)
  - Maintenance:
    - Based on rehabilitation and/or replacement of short-lived assets, which includes pumps, blowers, instrumentation and controls.
- Life Cycle Cost: $5,560,000 (as present value)

4.1.3 Alternative 1C – Moving Bed Biofilm Reactor (MBBR)

Refer to Appendix P for a preliminary site plan showing the improvements associated with Alternative 1C.

Overview:

Alternative 1C evaluates replacing the existing lagoons with Moving Bed Biofilm Reactors (MBBRs), followed by secondary clarifiers for reduction of BOD_5, TSS and ammonia. The MBBRs and clarifiers have a small footprint and can be installed outside the footprint of the lagoons to maintain continuity of treatment during construction. Influent flow equalization and aerobic digestion will be provided similar to that for Alternative 1B and the existing reed beds will continue to be used for solids dewatering. To prevent fouling of the biofilm carriers in the MBBRs, phosphorous removal will be provided downstream of the secondary clarifiers via chemical addition with PAC in a flash mixing, flocculation and settling tank.

A new metal-paneled control building with approximate dimensions of 22-feet x 30-feet will be provided to the south of the reed beds and contain the following:

- Electrical and control panels
- Aeration blowers for influent flow equalization, aerobic digestion and MBBRs
- Phosphorous removal chemical feed system
- Return sludge pumps and waste sludge pumps in building lower level (basement)

To maintain continuity of treatment during construction, the MBBRs, secondary clarifiers, aerobic digesters and control building will be constructed outside the footprint of the lagoons to allow them to remain operational until successful start-up of the new secondary treatment and digester systems is achieved.

Influent Flow Equalization
Influent flow equalization will be provided after the existing influent pump station to maximize MBBR performance and allow for a more consistent wastewater feed over a 24-hour period through storage and dilution of diurnal peak flows and loads. Refer to Alternative 1B for discussion of the influent flow equalization components.

MBBRs and Secondary Clarifiers

Secondary treatment will be provided by two (2) MBBRs trains located within a cast-in place concrete tank with divider walls located south of Lagoon No. 1. The MBBRs will be an integrated fixed-film activated sludge process where return activated sludge (RAS) is conveyed back to the MBBRs from the clarifiers and plastic media (carrier) within the MBBRs facilitates fixed film growth. The MBBR tanks will be equipped with diffused air systems for aeration (BOD_5 and ammonia reduction) and mixing (to maintain plastic media in suspension). Three (3) 15 HP aeration blowers (2 duty, 1 standby) equipped with variable frequency drives will be located in the new control building and utilized to supply air to the MBBR

aeration grids. The MBBR tanks will be equipped with screened tank outlets to contain the plastic media.

Two (2) peripheral feed-type secondary clarifiers with mechanical sludge removal system will be located downstream of the MBBRs for liquid solid separation. Each clarifier will be 18-feet in diameter with a sidewater depth of 12-feet and constructed of concrete. Five (5) dry-pit, solids-handling centrifugal pumps will be located within the lower level of the new control building for returning solids back to the MBBR process, as well as wasting solids to the aerobic digester. This pump arrangement provides two (2) duty RAS pumps, two (2) duty WAS pumps and a standby pump to serve either process.
Provided below is a summary of the MBBR and secondary clarifier components:

- Demolition / Removals:
  - Lagoon components including liners, curtain baffle, air piping, air diffusers and aeration blowers. Accumulated sludge to be transferred to existing reed beds.
  - Influent valve chamber, transfer valve chamber and effluent chamber
- MBBR Tankage:
  - Configuration:
    - One (1) cast-in-place concrete tank with two (2) MBBR treatment trains, each consisting of two (2) MBBR compartments in series
  - Dimensions (per MBBR compartment, 4 total):
    - Width: 12-feet
    - Length: 12-feet
    - Height: 11.5-feet
    - Operating Depth: 9.5-feet
    - Volume: 10,200 gallons
- Equipment:
  - Biofilm Carriers:
    - Construction: High Density Polyethylene (HDPE)
    - Quantity: 60-cubic meters
  - Outlet Screens:
    - Eight (8) stainless steel screens, each 12-inch in diameter x 5-feet tall with 3-mm openings
  - Aeration Grids:
    - 304 stainless steep piping with 1/8-inch diameter orifices
  - Aeration Blowers:
    - Quantity: Three (2 duty, 1 standby)
    - Type: Rotary lobe, positive displacement type equipped with variable frequency drives
    - Blower Size: 15 HP
  - RAS & WAS Pumps:
    - Quantity: Five (2 duty RAS, 2 duty WAS, 1 standby)
    - Type: Dry pit, solids handling centrifugal type
    - Pump Size: 3 HP
- Secondary Clarifiers:
  - Quantity: Two (both duty)
  - Type: Peripheral feed with mechanical sludge scraper

- Size (each): 18-feet in diameter with 12-feet sidewater depth
- Clarifier Drives: 0.5 HP

Phosphorous Removal

A PAC chemical feed system will be provided in the new control building similar to that discussed in Alternative 1B. To prevent fouling of the MBBR plastic biofilm carriers, PAC will be injected into the secondary effluent downstream of the clarifiers for removal in a concrete tank consisting of mixing, flocculation and settling compartments. The tank will be equipped with a 1 HP flash mixer and 1.5 HP submersible solids handling pump for pumping chemical sludge to the aerobic digesters.

Aerobic Digesters

Aerobic digestion will be provided to reduce the volatile solids content of the waste sludge generated from the MBBR process prior to solids conveyance to the reed beds. Refer to Alternative 1B for discussion of the aerobic digestion components.

Effluent Flow Monitoring

Effluent flow monitoring will be provided as discussed in Alternative 1B.

Sequence of Construction

To maintain continuity of treatment during construction, the work will be completed in the same manner as that presented for Alternative 1B, with secondary treatment, control building, and digestion improvements brought online prior to taking Lagoon No. 1 offline.

Capital, Operation and Maintenance Costs

The following costs are associated with Alternative 1C:

- Capital Cost: $5,970,000
- Annual O&M Costs: $71,000 (as present value)
  - Equipment Operation:
    - One (1) - 7.5 HP Flow Equalization Blower (24/7)
    - One (1) - 3 HP Flow Equalization Pump (4.5 hrs per day)
    - Two (2) - 15 HP MBBR Aeration Blowers (24/7)
    - Two (2) – 3 HP RAS Pumps (24/7)
    - Two (2) – 3 HP WAS Pumps (0.1 hrs per day)
    - Two (2) – 0.5 HP Clarifier Drives (24/7)
    - One (1) – 1 HP Flash Mixer (24/7)
    - One (1) – 1.5 HP Chemical Sludge Pump (0.1 hrs per day)
    - One (1) - 7.5 HP Aerobic Digester Blower (24/7)
    - One (1) - 2.1 HP Digested Sludge Pump (0.2 hrs per day)
  - Chemical Usage:
    - 3.5 gpd PAC Chemical Usage (P removal)

- Maintenance:
  - Based on rehabilitation and/or replacement of short-lived assets, which includes pumps, blowers, instrumentation and controls.

➢ Life Cycle Cost: $8,100,000 (as present value)

4.1.4 Alternative 1D – Lagoon Upgrades

Refer to Appendix Q for a preliminary site plan showing the improvements associated with Alternative 1D.

Overview: Lagoon Upgrades

Alternative 1D includes upgrading the existing lagoons to provide nitrification for ammonia removal. This is achieved by installing submerged media attached to a floating boom in Lagoon No. 2 for establishment of fixed film growth. Additional air is needed to support the nitrification process and the aeration blowers will be upgraded to 10 HP, each with a capacity of 165 SCFM @ 6 psi. During average day flows and loads, only one (1) blower will be operational. Blower operation will be automatically controlled via the effluent flow meter such that a second blower is called to operate when flows exceed 75,000 gpd. The air piping and diffusers in the lagoons will be upgraded to support the additional air requirements, as well as modifying the diffuser arrangement and location to maximize both BOD_5 and ammonia removal.

The liners in both lagoons and curtain baffle in Lagoon No. 2 are at the end of their service life and will be replaced. As part of replacing the liners, the lagoon basins will be re-graded and provided with new protective sand layer below the new liners. A floating cover will be provided in the polishing cell of Lagoon No. 2 to prevent algae growth and associated impact to the downstream disinfection system alternatives evaluated in Section 4.2.

Due to the volume and associated hydraulic retention time provided by the lagoons, influent flow equalization is not required as part of Alternative 1D. Further, as sludge is stored (and digested) within the lagoons, aerobic digestion is not required prior to sludge dewatering in the existing reed beds. Therefore, no modifications to the solids handling and dewatering process are needed as part of Alternative 1D.

Phosphorous Removal:

PAC will be injected into the existing influent pump station forcemain for settling and removal of phosphorous within the lagoons. The PAC chemical feed system will be located in a new 8-feet wide x 12-feet long insulated fiberglass building equipped with heating and ventilation located to the west of the reed beds.

Effluent Flow Monitoring

The existing effluent chamber downstream of Lagoon No. 2 has historically been problematic in providing reliable effluent flow monitoring. This chamber will remain

as a flow-through structure and effluent flow monitoring will be provided downstream, in a new packaged fiberglass metering manhole.

Provided below is a summary of the Alternative 1D improvements:

- Removals:
  - Lagoon components including liners, curtain baffle, air piping, air diffusers and aeration blowers. Accumulated sludge to be transferred to existing reed beds.
- Lagoon Upgrades:
  - 60 mil liners (30 year life) and protective sand bedding, both lagoons
  - Floating curtain baffle (Lagoon No. 2)
  - Four (4) HDPE fixed film media curtains (Lagoon No. 2)
  - Floating cover (polishing cell, Lagoon No. 2)
    - Modular HDPE geomembrane cover, 20-year service life
  - New HDPE air supply piping
  - New Air Diffusers
    - Lagoon No.1: Eighteen (18) retrievable fine bubble diffused air assemblies
    - Lagoon No. 2: Eight (8) retrievable fine bubble diffused air assemblies
  - Aeration Blowers
    - Quantity: Three (2 duty, 1 standby)
    - Type: Rotary Lobe, Positive Displacement Type
    - Capacity (each): 165 CFM, 10 HP
- Phosphorous Removal:
  - Chemical Feed Building:
    - 6-feet wide x 12-feet long insulated fiberglass structure with electric unit heater and forced ventilation
  - PAC Chemical Feed System:
    - Skid-mounted duplex chemical feed pumps
    - Containment pallet for three (3) 55 gallon PAC chemical drums
    - Chemical Injection Point: Influent pump station valve vault
    - Chemical Pump Operation: Interlocked with influent pump station
- Effluent Flow Monitoring:
  - Packaged fiberglass metering manhole with 6-inch parshall flume and ultrasonic level sensor, located downstream of existing effluent chamber.
  - Flow totalizer and chart recorder in existing control building.

Sequence of Construction

The lagoon upgrades as part of Alternative 1D will require taking each lagoon offline to complete the work. In 2013, the WWTP was able to maintain compliance with effluent limits while the lagoons were sequentially taken offline to facilitate removal of sludge. Monthly operating reports and sampling results from August 2013 to October 2013, which are associated with the sludge removal work in the lagoons, are included in Appendix R. Table 4 provides a summary of the sampling results and indicates which lagoon(s) were operational at the time of the sample. While the sampling (1/month) data during this period is limited, the effluent data showed higher effluent BOD_5 and phosphorous, while effluent TSS remained

consistently low throughout. It also showed that effluent BOD_5 was highest when only Lagoon No. 2, providing less aeration, was operational and Lagoon No. 1 was offline.

To reduce impacts to plant performance during construction, one lagoon will remain operational at all times and the aeration blowers serving the lagoons will be replaced sequentially such that at least two blowers are available at all times. Lagoon No. 2 will be taken offline first with the intent that the aeration improvements and fixed film curtains will allow for better performance when Lagoon No.1 is taken offline. In addition, the PAC chemical feed system will be brought online prior to performing the lagoon work to improve settleability and phosphorous removal within the lagoon(s) during construction.

TABLE 4
WWTP PERFORMANCE - AUGUST 2013 TO OCTOBER 2013

Sample Date	8/1/2013	9/4/2013	9/25/2013	10/2/2013
Flow (MGD)	0.056	0.051	0.044	0.003
Influent				
- BOD_5 (mg/L)	59	65		66
- TSS (mg/L)	25.2	32.7		22.4
Effluent				
- BOD_5 (mg/L)	9.7	33	20	8.5
- TSS (mg/L)	5.2	4.8		4.7
- TPhos (mg/L)	1.6	4.2		3.2
Operational Lagoon (on sample date)	Lagoons #1 & #2	Lagoon #2	Lagoon #1	Lagoon #1
Comment	8/15- Lagoon #1 Taken Offline		9/15: Operation restored in Lagoon #1 / Lagoon #2 Taken Offline	10/2: Start filling Lagoon #2

The following costs are associated with Alternative 1D:

- Capital Cost: $3,570,000
- Annual O&M Costs: $23,300 (as present value)
  - Equipment Operation:
    - One (1) - 10 HP Aeration Blower (24/7) during average day loads
  - Chemical Usage:
    - 3.5 gpd Poly-Aluminum Chloride Chemical Usage (P removal)
  - Maintenance:
    - Based on rehabilitation and/or replacement of short-lived assets, which includes lagoon and chemical feed components.
- Life Cycle Cost: $4,270,000 (as present value)

4.2 EFFLUENT DISINFECTION

This section evaluates alternatives to provide effluent disinfection for compliance with seasonal disinfection limits. The location of the disinfection system components is dependent upon the secondary treatment improvement alternative selected in Section 4.1. If Alternative 1B or 1C is selected, the disinfection system will be installed within the footprint of Lagoon No.1 (to be abandoned). If the existing lagoons remain and are upgraded as part of Alternative 1D, the disinfection system components will be installed to the northeast of Lagoon No. 2. Refer to the preliminary site plans for Alternatives 1B, 1C and 1D included in Appendices O, P and Q for the location of the effluent disinfection system associated with the secondary treatment alternatives.

The disinfection alternatives have been sized to treat a peak flow of 430 gpm (per Influent Pump Station capacity) at an effluent TSS up to 30 mg/L. Based on a 100-year flood elevation of 526-feet, the required hydraulic grade elevation for the effluent disinfection system alternatives has been set at 528.25-feet to prevent backup.

4.2.1 Alternative 2A – No Action

Currently, secondary effluent from the lagoons is conveyed to the Au Sable River for effluent discharge. In order to comply with the seasonal fecal coliform limits, disinfection of the secondary effluent is required. If No Action is taken, SPDES permit non-compliance events for fecal coliform limits will result. As such, this alternative will not be considered further.

4.2.2 Alternative 2B – Chlorination

As part of Alternative 2B, a chlorination system will be provided for effluent disinfection. In addition to compliance with fecal coliform limits, this alternative will also comply with the total residual chlorine limit of 2.0 mg/L.

The chlorination system will consist of a chemical feed system utilizing 12.5% sodium hypochlorite in conjunction with a concrete chlorine contact tank to provide 15 minutes of contact time at peak hourly flows. Dechlorination is not required to comply with the total residual chlorine limit. The chemical feed rate will be controlled based on flow (via effluent meter) and chlorine feedback to maintain chlorine residual below 2.0 mg/L, while also preventing residual drop out.

If Alternative 1D is selected for the secondary treatment improvements, the sodium hypochlorite chemical feed system will be located in a new fiberglass building to the northeast of Lagoon No. 2. The chlorine contact tank will also be located to the northeast of Lagoon No. 2.

If Alternative 1B or 1C is selected for the secondary treatment improvements, the existing control building housing the lagoon aeration blowers to be removed will be utilized for the chemical feed system. The chlorine contact tank will be located within the footprint of Lagoon No. 1.

Provided below is a summary of the chlorination system components as part of Alternative 2B:

- 6,500 gallon, baffled chlorine contact tank
  - 15 minute contact time at 430 gpm peak flow
  - Hydraulic Grade El.: 528.25-feet
- 12.5% Sodium Hypochlorite Chemical Feed System Components
  - Skid-mounted duplex chemical feed pumps
  - Containment pallet for three (3) 55-gallon chemical drums
  - 3/4 HP effluent recirculation pump
    - Utilized for chlorine residual sampling and analysis of chlorine contact tank effluent
  - Batch chlorine residual analyzer
- Chemical Building: 6-feet wide x 12-feet long insulated fiberglass structure
  - Applicable if Alternative 1D is selected.
  - Existing control building to be utilized if Alternative 1B or 1C is selected.

The following costs are associated with Alternative 2B:

- Capital Cost: $630,000
- Annual O&M Costs: $10,700 (as present value)
  - Chemical Usage:
    - 4 gpd sodium hypochlorite chemical usage
  - Maintenance:
    - Based on rehabilitation and/or replacement of short-lived assets, which includes chemical feed components.
- Life Cycle Cost: $950,000 (as present value)

4.2.3 Alternative 2C – Ultraviolet (UV)

As part of Alternative 2C, a UV system will be provided for disinfection of secondary effluent for compliance with fecal coliform limits. This alternative does not utilize chemicals (i.e. sodium hypochlorite) and therefore compliance with a total residual chlorine limit is not applicable. The UV system will consist of two (2) horizontal UV banks (1 duty, 1 standby) installed in series within open concrete channels. Each bank will provide a capacity to disinfect 450 gpm of secondary effluent with a TSS concentration of 30 mg/L or less. This is greater than the capacity of the influent pump station (430 gpm). The 5,200 gpd in additional future flows will not require the capacity of the influent pump station or UV system to be upgraded. Therefore, the UV system is adequately sized to handle both current and future flows. For freeze protection, the UV system (and open channels) will be located within an 8-feet wide x 14-feet long, heated, insulated fiberglass building.

A level control weir will be provided at the end of the channel such that the UV lamps are submerged at all times. The duty UV bank will remain operational regardless of flow and the banks will alternate operation on a timed basis. For maintenance, the UV lamp modules can be removed and replaced from the channel without having to isolate or take the channel offline. The UV banks will

be equipped with a pneumatically driven quartz cleaning system to reduce fouling and minimize frequency of manual cleaning.

If Alternative 1D is selected for the secondary treatment improvements, the UV disinfection system will be located to the northeast of Lagoon No. 2. If Alternative 1B or 1C is selected, the UV system will be located within the footprint of Lagoon No. 1. Bypass and/or dewatering capability will be provided to facilitate cleaning of the UV channel.

Provided below is a summary of the UV disinfection system components as part of Alternative 2C:

- UV Disinfection System
  - Type:
    - Open-channel, horizontally oriented with low pressure, high output lamps
  - # of Banks: 2 (1 duty, 1 standby)
    - Capacity: 450 gpm (each bank)
    - Modules per Bank: 2
    - Lamps per Module: 6
    - Lamps per Bank: 12
    - UV Intensity Sensors per Bank: 1
  - UV Cleaning System
    - Automatic, pneumatic driven quartz cleaning system, each bank
  - Level Control:
    - Fixed weir at end of channel with 0.5-inches of headloss at peak flow
    - UV Channel Operating Depth: 6-inches
    - Hydraulic Grade El.: 528.25-feet
  - UV Building
    - 8-feet wide x 14-feet long insulated fiberglass structure with heating and ventilation
  - Location:
    - Northeast of Lagoon No. 2 if secondary treatment Alternative 1D is selected.
    - Within footprint of Lagoon No. 1 if secondary treatment Alternative 1B or 1C is selected.

The following costs are associated with Alternative 2C:

- Capital Cost: $710,000
- Annual O&M Costs: $3,300 (as present value)
  - Equipment Operation:
    - One (1) UV Bank, 24/7 operation at 2.04 kW/hr
  - Maintenance:
    - Based on rehabilitation and/or replacement of short-lived assets, which includes UV system components.
- Life Cycle Cost: $810,000 (as present value)

5.0 COMPARISON OF ALTERNATIVES

Table 5 provides a comparison of the alternatives presented in Section 4, including advantages, disadvantages and associated cost. No action alternatives are not included in the comparison table as the justification for the improvement alternatives is discussed in Section 4.

TABLE 5
COMPARISON OF ALTERNATIVES

Alternatives	Advantages	Disadvantages	Cost
SECONDARY TREATMENT IMPROVEMENTS			
1B – SBRs	• **SPDES Permit Compliance During Construction** - Secondary treatment process can be constructed and brought online while existing lagoons remain operational, thereby maintaining treatment performance during construction. • **Process Flexibility / Expansion** - SBR process can be modified to accommodate more stringent nutrient limits (i.e. nitrate) if required in the future. - Removal of the lagoons will provide ample free space to accommodate future expansion and/or modifications to the treatment process if required in the future.	• **Cost** - Capital, O&M, Life Cycle • **Sequence of Construction** - More involved due to limited available space outside of lagoon footprint. - Requires temporary pumping during construction to facilitate re-routing of forcemain and power associated with influent pump station, as well as for conveyance of new secondary treatment effluent to Lagoon No. 1 during start-up. • **Process Control and Oversight** - Utilizes an activated sludge process which requires more oversight then the lagoon process. - Adds influent flow equalization and aerobic digestion processes which are not required with lagoons.	• Capital: $4,440,000 • Annual O&M: $37,300 • Life Cycle: $5,560,000
1C – MBBRs	• **SPDES Permit Compliance During Construction** - Same as Alternative 1B • **Process Flexibility / Expansion** - Removal of the lagoons will provide ample free space to accommodate future expansion and/or modifications to the treatment process if required in the future.	• **Highest Costs** - Capital, O&M, Life Cycle • **Sequence of Construction** - Same as Alternative 1B • **Process Control and Oversight** - Utilizes a combination fixed-film and activated sludge process in conjunction with a downstream clarification process which requires more oversight then the lagoon process. - In conjunction with chemical addition, requires an additional process (flash mixing & settling tank) downstream of the	• Capital: $5,970,000 • Annual O&M: $71,000 • Life Cycle: $8,100,000

TABLE 5
COMPARISON OF ALTERNATIVES

Alternatives	Advantages	Disadvantages	Cost
		MBBRs for phosphorous removal. - Adds influent flow equalization and aerobic digestion processes which are not required with Lagoons.	
1D – Lagoon Upgrades	• **Cost** - Capital, O&M, Life Cycle • **Process Control and Oversight** - Maintains the current level of control and oversight which is relatively minimal with the lagoon process.	• **SPDES Permit Compliance During Construction** - Only one (1) lagoon will be operational at a given time during construction which will temporarily reduce treatment performance and may result in SPDES permit non-compliance. • **Process Flexibility / Expansion** - There is little to no available space to expand the lagoons and/or add additional treatment processes if needed in the future to accommodate more stringent water quality limits.	• Capital: $3,570,000 • Annual O&M: $23,300 • Life Cycle: $4,270,000
EFFLUENT DISINFECTION			
2B – Chlorination	• **Cost** - Capital • **SPDES Permit Compliance During Construction** - Regardless of secondary treatment alternative selected, system can be installed without impacting the secondary treatment process during construction.	• **Cost** - O&M, Life Cycle • **Process Control and Oversight** - Disinfection performance and effluent chlorine residual are more susceptible to changes in flow and water quality. • **Environmental / Safety:** - Utilizes sodium hypochlorite which is a hazardous substance.	• Capital: $630,000 • Annual O&M: $10,700 • Life Cycle: $950,000
2C – Ultraviolet	• **Cost** - O&M, Life Cycle • **SPDES Permit Compliance During Construction** - Same as Alternative 2B • **Process Control and Oversight** - UV system is sized for peak conditions and runs continuously regardless of changes in flow and/or effluent TSS. • **Environmental / Safety:** - No chemicals utilized	• **Cost** - Capital	• Capital: $710,000 • Annual O&M: $3,300 • Life Cycle: $810,000

6.0 RECOMMENDED ALTERNATIVES

This section provides recommendations for improvements to the WWTP. Refer to Appendix Q which provides a preliminary site plan showing the recommended secondary treatment and effluent disinfection alternatives.

6.1 SECONDARY TREATMENT IMPROVEMENTS

Alternative 1D – Lagoon Upgrades is the recommended alternative for the following reasons:

- Lowest Cost – Capital, O&M and Life Cycle
- Minimal Process Control and Oversight
  - Maintains the current level of process control and oversight which is relatively minimal for the lagoon process. Alternatives 1B and 1C add additional treatment processes and require a significantly greater level of control and oversight.

The following disadvantages are noted for Alternative 1D:

- Process Flexibility / Expansion:
  - The lagoon upgrades will comply with the anticipated phosphorous and ammonia limits provided by the NYSDEC in July 2019. However, the lagoon process is not intended to meet more stringent water quality limits, specifically with regards to nutrients. If the anticipated limits were to be lowered and/or additional limits added (i.e. nitrate, total nitrogen), the lagoon upgrades may not be able to comply. Further, implementation of this alternative will result in limited available space to add additional treatment processes if needed in the future to comply with more stringent limits.
- Construction Impacts to WWTP Performance:
  - The work requires the lagoons to be sequentially taken offline, which will result in only one (1) lagoon being operational at a given time during construction. As discussed in Sections 4.1.4 and 6.4, the work will be sequenced to perform the improvements in Lagoon No. 2 first to minimize impacts to effluent quality when Lagoon No. 1 is later taken offline.

6.2 EFFLUENT DISINFECTION

Alternative 2C – Ultraviolet (UV) is the recommended alternative for the following reasons:

- Lowest O&M and Life Cycle Costs
- Minimal Process Control and Oversight
  - Chlorination requires greater process control as changes in flow and water quality impact chlorine residual, dosage requirements, and ability to achieve disinfection while not exceeding the total chlorine residual limit.
  - Process control is minimal with the UV system as it is sized to disinfect peak flows at an effluent TSS up to 30 mg/L. Therefore, changes in flow (less than peak) and effluent TSS (less than 30 mg/L) will only improve the performance of the UV disinfection process.

- Operator Safety
  - Eliminates the need for chemical usage. Alternative 2B utilizes sodium hypochlorite which is listed under 6 CRR-NY 597.3 as a hazardous substance.
- Environmental
  - No chemicals used which eliminates discharge of chlorine to the Au Sable River, as well as eliminating any potential for chemical spills.

6.3 PRIORITIZATION OF ALTERNATIVES

Recommended Alternative 2C – Ultraviolet (UV) is considered the highest priority and necessary for compliance with the current SPDES permit which requires effluent disinfection be provided by May 1, 2023.

Implementation of Alternative 1D – Lagoon Upgrades is also considered a priority and necessary to not only address the existing lagoon components which are at the end of their useful life but also to comply with the anticipated NYSDEC initiated SPDES permit modifications for Total Phosphorous and Ammonia.

6.4 SEQUENCE OF WORK

The lagoon upgrades as part of recommended Alternative 1D will require taking each lagoon offline to complete the work. To reduce impacts to plant performance during construction, one lagoon will remain operational at all times and the aeration blowers serving the lagoons will be replaced sequentially such that at least two blowers are available at all times. Lagoon No. 2 will be taken offline first with the intent that the aeration improvements and fixed film curtains will allow for better performance when Lagoon No.1 is taken offline. In addition, the PAC chemical feed system will be brought online prior to performing the lagoon work to improve settleability and phosphorous removal within the lagoon(s) during construction.

The UV disinfection system recommended in Alternative 2C will be located outside the footprint of the existing treatment processes (i.e. lagoons) and can be constructed prior to or after the lagoon upgrades are completed. Installation of the UV disinfection system will not impact plant performance during construction.

6.5 PROJECT SCHEDULE

Provided below is a preliminary project schedule and based on the Towns' obtaining financing for the project in early 2021. The schedule assumes that no environmental permits will be required as all work will occur within the previously disturbed areas of the site. The schedule also assumes that the work will not impact cultural and historical resources and therefore no archeological field investigations will be required.

- Engineering Report Submission: March 2020
  - NYSDEC & NYSEFC Report Approval: June 2020
- Clean Water State Revolving Fund (CWSRF):
  - Project Listing: April 2020
  - Intended Use Plan (IUP) Listing: October 2020
  - Financing Application: March 2021
- Design Phase: January 2021 to October 2021

- NYSDEC Approval of Plans: October 2021
- Bid Phase: November 2021 to December 2021
- Contract Award: February 2022
- Construction Phase: March 2022 to March 2023
- Project Completion: May 2023

6.6 WWTP OPERATOR CERTIFICATION

The recommended improvements are anticipated to require a 2/2A grade Chief Operator as a result of the disinfection requirements under the current SPDES permit and anticipated nitrification requirements (i.e. ammonia limits) associated with the planned SPDES permit modification. Provided below is a breakdown of the WWTP certification incorporating the recommended improvements and based on NYSDEC form FOAS 100-4/95. The secondary treatment and disinfection improvements are anticipated to increase the WWTP score by 10 points for a total score of 34, where a 2/2A grade Chief Operator is required for scores of 31 or greater. Note that if the SPDES permit is modified to require monitoring only for ammonia, then the total WWTP score will be reduced to 29 and no changes in Chief Operator grade will be required.

CATEGORY	SCORE
Flow	
- 0.147 MGD permitted flow	1
Preliminary Treatment	
- 1E: Raw Sewage Pumping	3
Primary Treatment	
- Not Applicable	0
Secondary Treatment	
- 3E: Aerated Lagoons	7
Advanced Treatment	
- 4H: Nitrification (by fixed film in Lagoon No. 2)	5
- 4K: Phosphorous Removal (by chemical addition)	8
Disinfection	
- 5D: Ultraviolet	5
Solids Handling / Disposal	
- 6J: All Other Dewatering Units (Reed Beds)	5
Miscellaneous	
- Not Applicable	0
TOTAL WWTP SCORE	**34**

7.0 PROJECT COST AND FINANCING

As summarized in Table 6, the opinion of probable project cost for the recommended improvements outlined in Section 6 is $4,280,000 and will result in an increase in annual O&M costs of $18,000. The increase in O&M costs is associated with the new effluent disinfection system, as well as the following additional O&M expenses not currently incurred for secondary treatment:

- Additional energy usage of 16,331 kWh/yr associated with increasing the lagoon aeration blowers from 7.5 HP to 10 HP.
- Chemical usage costs associated with phosphorous removal.
- Short lived asset replacements, including fixed film media curtains utilized for ammonia removal, floating cover in Lagoon No. 2 polishing cell utilized to prevent algae growth and chemical feed equipment utilized for phosphorous removal.

TABLE 6
OPINION OF PROBABLE PROJECT COST

Recommended Alternative	Project Cost	Δ Annual O&M [1]
Alternative 1D – Lagoon Upgrades [2]	$ 3,570,000	$ 14,700
Alternative 2C – Ultraviolet [3]	$ 710,000	$ 3,300
Total	**$ 4,280,000**	**$ 18,000**

Notes:

[1] Represents change (increase or decrease) in current annual O&M costs (as present value) associated with Alternative.

[2] Additional O&M costs for secondary treatment include chemical usage for phosphorous removal, replacement of short-lived assets (fixed film media curtains, floating cover and chemical feed Equipment) and additional energy cost associated with increase in aeration blower size from 7.5 HP to 10 HP which is derived as follows:

- 7.5 HP Aeration Blower Energy Usage (Existing): 48,992 kWh/yr (1 blower, 24/7 operation)
- 10 HP Aeration Blower Energy Usage (Proposed): 65,323 kWh/yr (1 blower, 24/7 operation)
- **Net Increase in Blower Energy Usage: 16,331 kWh/yr**

[3] Increase in annual O&M costs associated with new effluent disinfection system

Included in Appendix S are the 2020 adopted sewer budgets for the Town of Jay and Town of Black Brook. Presented in Table 7 below is a summary of the 2020 sewer fund revenues and appropriations for the Towns. If the project is financed with a 30-year loan at an assumed 3.5% market rate interest, the resulting levelized annual debt service will be $233,000. The combined total increase in annual sewer fund appropriations for the Towns' will be $251,000 and includes the increase in annual O&M expenses associated with the improvements.

TABLE 7
2020 ADOPTED SEWER BUDGETS & PROJECTED ANNUAL SEWER BUDGET INCREASE

TOWN OF JAY SEWER BUDGET		
Adopted 2020 Sewer Fund Revenue		$83,913
- Unexpended		$30,000
- Total Raised by Tax		$25,453
	Total	**$139,366**
Adopted 2020 Sewer Fund Appropriations		
- O&M, Administrative Expenses		$89,766
- Debt Service		$49,600
	Total	**$139,366**
TOWN OF BLACK BROOK BUDGET		
Adopted 2020 Sewer Fund Revenue		$47,948.17
- Interests & Penalties		$100
- Interest & Earnings		$1,871
	Total	**$49,919.17**
Adopted 2020 Sewer Fund Appropriations		
- O&M, Administrative Expenses		$38,919.17
- Statutory Installment Bonds - Principal & Interest		$11,000
	Total	**$49,919.17**
Total Project Cost		$4,280,000
Levelized Annual Debt Service (30 Yr Loan @ 3.5%)		$233,000.00
Increase in Annual O&M (as present value)		$18,000
Total Annual Increase - Sewer Fund Appropriations		**$251,000.00**

Appendix A

SPDES Permit

NEW YO. STATE DEPARTMENT OF ENVIRONMENTAL CON. RVATION

State Pollutant Discharge Elimination System (SPDES)
DISCHARGE PERMIT

First3.99

Industrial Code:	**4952**	SPDES Number:	**NY- 020 1910**
Discharge Class (CL):	**07**	DEC Number:	**5-1528-00010/00001**
Toxic Class (TX):	**N**	Effective Date (EDP):	**06/01/08**
Major Drainage Basin:	**10**	Expiration Date (ExDP):	**05/31/13**
Sub Drainage Basin:	**04**	Modification Dates:	
Water Index Number:	**C**	Attachment(s):	
Compact Area:	**NEIWPCC**		

This SPDES permit is issued in compliance with Title 8 of Article 17 of the Environmental Conservation Law of New York State and in compliance with the Clean Water Act, as amended, (33 U.S.C. §1251 et.seq.)(hereinafter referred to as "the Act").

PERMITTEE NAME AND ADDRESS

Name: **Town of Black Brook & Town of Jay** Attention: **Supervisor**
Street: **18 North Main Street, P.O. Box 715**
City: **Au Sable Forks** State: **NY** Zip Code: **12912**

is authorized to discharge from the facility described below:

FACILITY NAME AND ADDRESS

Name: **Au Sable Forks Community WWTP**
Location (C,T,V): **Jay (T)** County: **Essex**
Facility Address: **215 Grove Road**
City: **Jay** State: **NY** Zip Code: **12912**
NYTM -E: **606.5** NYTM - N: **4921.7**
From Outfall No.: **001** at Latitude: **44 ° 26 ′ 03 ″** & Longitude: **73 ° 39 ′ 15 ″**
into receiving waters known as: **Au Sable River** Class: **C**
and; (list other Outfalls, Receiving Waters & Water Classifications)

in accordance with effluent limitations, monitoring requirements, and other conditions set forth in this permit; and 6 NYCRR Part 750-1.2(a) and 750-2.

DISCHARGE MONITORING REPORT (DMR) MAILING ADDRESS

Mailing Name: **Au Sable Forks Community Wastewater Treatment Plant**
Street: **Town of Black Brook, 18 North Main Street, P.O. Box 715**
City: **Au Sable Forks** State: **NY** Zip Code: **12912**
Responsible Official or Agent: **Chief Plant Operator** Phone: **518-647-5411**

This permit and the authorization to discharge shall expire on midnight of the expiration date shown above and the permittee shall not discharge after the expiration date unless this permit has been renewed, or extended pursuant to law. To be authorized to discharge beyond the expiration date, the permittee shall apply for permit renewal not less than 180 days prior to the expiration date shown above.

DISTRIBUTION:

BWP, Permits Coordinator
W. Wasilauski, RWE Attn: V. Kavanagh
L. S. Czubernat, Environmental Permits
W. Amberman, DOH
C. Walton, Operator
R. Douglas, Supervisor - Town of Jay
EPA Region 2

Deputy Regional Permit Administrator: Michael J. McMurray

Address: 1115 NYS Route 86, P.O. Box 296
Ray Brook, NY 12977-0296

Signature: Michael J. McMurray Date: 4/30/08

PERMIT LIMITS, LEVELS AND MONITORING DEFINITIONS

OUTFALL	Limitations Apply	RECEIVING WATER	EFFECTIVE	EXPIRING
	This cell describes the type of wastewater authorized for discharge. Examples include sanitary and combined (sanitary & stormwater) wastewater.	This cell lists classified waters of the state to which the listed outfall discharges.	The date this page starts in effect. (Estimated Date of Permit (EDP) or Estimated Date of Permit Modification (EDPM))	The date this page is no longer in effect

PARA-METER e.g., pH, TRC, Temperature, D.O.	Effluent Limitation Type The minimum level that must be maintained at all instants in time.	Effluent Limitation The maximum level that may not be exceeded at any instant in time.	UNITS SU, °F, mg/l, etc.	SAMPLE FREQUENCY	SAMPLE TYPE
	Daily Avg., Range, Daily Min., and Daily Max. are defined below. 30 day arithmetic mean (30 day average) is the arithmetic mean of all sample values measured during the monitoring period of one month (30 days) in length. 7 day arithmetic mean (7 day average) is the arithmetic mean of all sample values measured during the monitoring period of one week (7 days) in length. 30 day geometric mean is the geometric mean of samples taken within a 30 consecutive day period. 7 day geometric mean is the geometric mean of samples taken within a 7 consecutive day period. See DMR Manual for more information.	The effluent limitation is developed based on the more stringent of technology-based standards, required under the Clean Water Act, or New York State water quality standards. All determinations of compliance with substance specific discharge limits are made by comparing monitoring results to the effluent limitation.	This can include units of flow, pH, temperature, mass or concentration. Examples include SU, °F, µg/l, lbs/d, etc.	Examples include daily, 3/week, weekly, 2/month, monthly, quarterly, 2/yr and yearly.	Examples include grab, 24 hour composite and 3 grab samples collected over a 6 hour period.

DAILY DISCHARGE.: The discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for the purposes of sampling. For pollutants expressed in units of mass, the 'daily discharge' is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the 'daily discharge' is calculated as the average measurement of the pollutant over the day.

DAILY MAX.: The highest allowable daily discharge. DAILY MIN.: The minimum allowable discharge during a calendar day. Calculated in the same manner as the DAILY MAX.

DAILY AVG.: The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. (Monthly average).

RANGE: The minimum instantaneous measurement and the maximum instantaneous measurement taken over the reporting period comprise the reportable range.

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL	LIMITATIONS APPLY:	RECEIVING WATER	EFFECTIVE	EXPIRING
001	All Year	Au Sable River	06/01/2018	05/31/2023

PARAMETER	EFFLUENT LIMIT					MONITORING REQUIREMENTS				FN
								Location		
	Type	Limit	Units	Limit	Units	Sample Frequency	Sample Type	Inf.	Eff.	
Flow	30 day arithmetic Mean	0.147	MGD			Continuous	Recorder		X	
BOD_5	Monthly Average	30	mg/l	37	lbs/d	1/Month	Grab		X	(1,2)
BOD_5	7-Day Average	45	mg/l	55	lbs/d	1/Month	Grab		X	
Solids, Suspended	Monthly Average	70	mg/l	85	lbs/d	1/Month	Grab		X	(1,2)
Solids, Suspended	7-Day Average	105	mg/l	128	lbs/d	1/Month	Grab		X	
Phosphorus Total	12 MRA	Monitor	mg/l	4.47	lbs/d	1/Month	Grab		X	(3)
Phosphorus Total	30 day average	Monitor	mg/l			1/Month	Grab		X	
Solids, Settleable	Daily Maximum	0.3	ml/l			1/Day	Grab		X	(4)
pH	Range	6.0 – 9.0	SU			1/Day	Grab		X	(4)
Effluent Disinfection required		[ ] All Year		[X] Seasonal from **May 1** to **Oct 31**						
Coliform, Fecal	30-Day Geometric Mean	200	No./ 100 ml			1/Month	Grab		X	(5)
Coliform, Fecal	7 Day Geometric Mean	400	No./ .100 ml			1/Month	Grab		X	(5)
Chlorine, Total Residual	Monthly Average	Monitor	mg/l	Monitor	lbs/d	1/Day	Grab		X	(5,6)
	Daily Maximum	2.0		2.45						

FOOTNOTES:

(1) Effluent shall not exceed 15 % and 15 % of influent concentration values for BOD5 & TSS respectively.
(2) An influent BOD and TSS concentration of 200 mg/l shall be assumed for the calculation of percent removals.
(3) The 12-month rolling average shall be computed as follows: the (sum of current month's and the past II month's 30 day arithm mean in Ibs/day) divided by 12.
(4) Collect effluent sample Monday through Friday.
(5) Limits and monitoring requirements are not in effect until May 1, 2023. See the schedule of compliance on page 7.
(6) If ultraviolet light disinfection (UV) is practiced instead of chemical disinfection, then no total residual chlorine monitorin required.

DISCHARGE NOTIFICATION REQUIREMENTS

a) The permittee shall, except as set forth in (c) below, maintain the existing identification signs at all outfalls to surface waters, which have not been waived by the Department in accordance with 17-0815-a. The sign(s) shall be conspicuous, legible and in as close proximity to the point of discharge as is reasonably possible while ensuring the maximum visibility from the surface water and shore. The signs shall be installed in such a manner to pose minimal hazard to navigation, bathing or other water related activities. If the public has access to the water from the land in the vicinity of the outfall, an identical sign shall be posted to be visible from the direction approaching the surface water.

The signs shall have **minimum** dimensions of eighteen inches by twenty four inches (18" x 24") and shall have white letters on a green background and contain the following information:

N.Y.S. PERMITTED DISCHARGE POINT

SPDES PERMIT No.: NY_____

OUTFALL No. :____

For information about this permitted discharge contact:

Permittee Name:

_____

Permittee Contact:

_____

Permittee Phone: ( ) - ### - ####

OR:

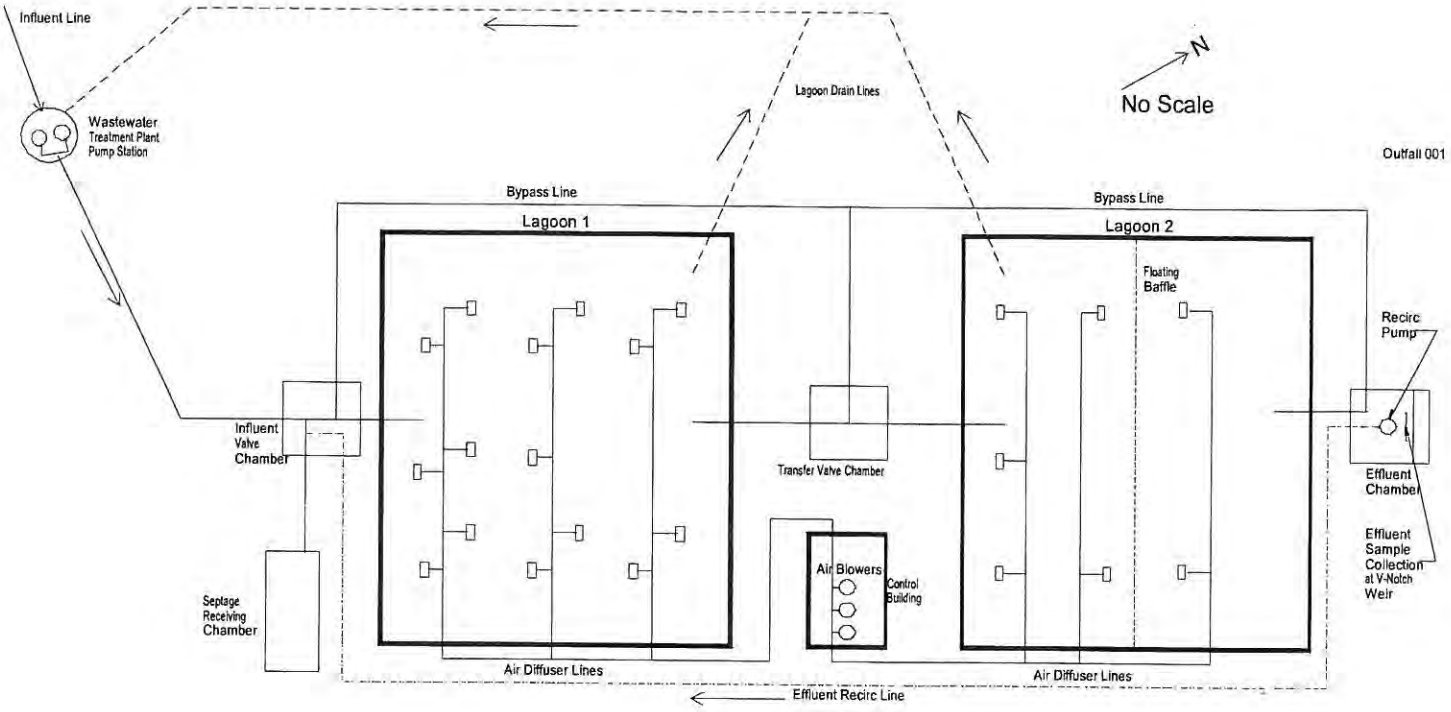
b) For each discharge required to have a sign in accordance with a), the permittee shall provide for public review at a repository accessible to the public, copies of the Discharge Monitoring Reports (DMRs) as required by the **RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS** page of this permit. This repository shall be open to the public, at a minimum, during normal daytime business hours. The repository may be at the business office repository of the permittee or at an off-premises location of its choice (such location shall be the village, town, city or county clerk's office, the local library or other location as approved by the Department). In accordance with the **RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS** page of your permit, each DMR shall be maintained on record for a period of five years.

c) If, upon November 1, 1997, the permittee has installed signs that include the information required by 17-0815-a(2)(a), but do not meet the specifications listed above, the permittee may continue to use the existing signs for a period of up to five years, after which the signs shall comply with the specifications listed above.

d) The permittee shall periodically inspect the outfall identification signs in order to ensure that they are maintained, are still visible and contain information that is current and factually correct.

MONITORING LOCATION

The permittee shall take samples and measurements, to comply with the monitoring requirements specified in this permit, at the location(s) specified below:



RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS

a) The permittee shall also refer to 6 NYCRR Part 750-1.2(a) and 750-2 for additional information concerning monitoring and reporting requirements and conditions.

b) The monitoring information required by this permit shall be summarized, signed and retained for a period of at least five years from the date of the sampling for subsequent inspection by the Department or its designated agent. **Also, monitoring information required by this permit shall be summarized and reported by submitting;**

[X] (if box is checked) completed and signed Discharge Monitoring Report (DMR) forms for each 1 month reporting period to the locations specified below. Blank forms are available at the Department's Albany office listed below. The first reporting period begins on the effective date of this permit and the reports will be due no later than the 28th day of the month following the end of each reporting period.

[ ] (if box is checked) an annual report to the Regional Water Engineer at the address specified below. The annual report is due by February 1 and must summarize information for January to December of the previous year in a format acceptable to the Department.

[X] (if box is checked) a monthly "Wastewater Facility Operation Report..." (form 92-15-7) to the:
[X] Regional Water Engineer and/or [ ] County Health Department or Environmental Control Agency specified below

Send the **original** (top sheet) of each DMR page to:

Department of Environmental Conservation
Division of Water
Bureau of Water Compliance Programs
625 Broadway
Albany, New York 12233-3506

Phone: (518) 402-8177

Send the **first copy** (second sheet) of each DMR page to:

Department of Environmental Conservation
Regional Water Engineer
Region 5
1115 NYS Route 86
Ray Brook, NY 12977-0296

Phone: (518) 897-1241

Send an **additional copy** of each DMR page to:

c) Noncompliance with the provisions of this permit shall be reported to the Department as prescribed in 6 NYCRR Part 750-1.2(a) and 750-2.

d) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.

e) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring shall be included in the calculations and recording of the data on the Discharge Monitoring Reports.

f) Calculation for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this permit.

g) Unless otherwise specified, all information recorded on the Discharge Monitoring Report shall be based upon measurements and sampling carried out during the most recently completed reporting period.

h) Any laboratory test or sample analysis required by this permit for which the State Commissioner of Health issues certificates of approval pursuant to section five hundred two of the Public Health Law shall be conducted by a laboratory which has been issued a certificate of approval. Inquiries regarding laboratory certification should be sent to the Environmental Laboratory Accreditation Program, New York State Health Department Center for Laboratories and Research, Division of Environmental Sciences, The Nelson A. Rockefeller Empire State Plaza, Albany, New York 12201.

Appendix B

NYSDEC Correspondence –
Planned SPDES Permit Modifications

Matthew Drislane

From: Duval, Kelly A (DEC) <Kelly.Duval@dec.ny.gov>
Sent: Tuesday, July 23, 2019 2:12 PM
To: Matthew Drislane
Cc: supervisor@townofjayny.gov; hwysuperintendent@townofjayny.gov; rwick@co.essex.ny.us; thodgson@co.essex.ny.us; Geiger, James J (EFC); Carrie L. Dooley
Subject: RE: Town of Jay - SPDES Permit

Matt,

As we discussed on the phone, the current SPDES permit has limits for fecal coliform and those won't change. The 30-day geometric mean is 200/100 ml and the 7-day geometric mean is 400/100 ml.

All municipal wastewater treatment facilities in the Lake Champlain Basin will be getting phosphorus concentration limits, in addition to the loading limits that are already in the permits. The proposed phosphorus limit for Jay is 1.0 mg/L (monthly average).

The receiving waterbody was reclassed from C to C(t) in 2017, which means ammonia will be added to the permit. The water quality analysis produced a summer limit of 11.8 mg/L and a winter limit of 18.1 mg/L (both monthly average). However, ammonia may just be 'monitor' in the permit to start. This has not yet been decided.

The compliance schedule in the permit will remain as-is, unless the Town would like to modify those dates.

Once the Department has the permit drafted, it will be provided to the Town for review. A fact sheet will also be provided.

Please let me know if you have any questions.

Thank you,

Kelly Duval, P.E.
Professional Engineer 1, Division of Water

New York State Department of Environmental Conservation
232 Golf Course Road, Warrensburg, NY 12885
P: (518) 623-1272 | F: (518) 623-3603 | kelly.duval@dec.ny.gov
www.dec.ny.gov | |

From: Matthew Drislane <mdrislane@mjels.com>
Sent: Tuesday, July 23, 2019 1:32 PM
To: Duval, Kelly A (DEC) <Kelly.Duval@dec.ny.gov>
Cc: supervisor@townofjayny.gov; hwysuperintendent@townofjayny.gov; rwick@co.essex.ny.us; thodgson@co.essex.ny.us; Geiger, James J (EFC) <James.Geiger@efc.ny.gov>; carriedooley@mjels.com
Subject: Town of Jay - SPDES Permit

Hi Kelly,

I'm working with the Town of Jay to prepare an engineering report to address improvements to the Town's wastewater treatment plant to comply with the planned SPDES permit modifications requiring seasonal disinfection.

At this time, we would like to know whether the DEC may incorporate any additional modifications (i.e. phosphorous) to the Town's permit so that any necessary improvements can be captured in the engineering report to support funding for the project.

Please find attached a letter inquiring whether any additional permit modifications may be incorporated during the next permit renewal.

-Matt

Matthew J. Drislane, P.E.
Water/Wastewater Engineer

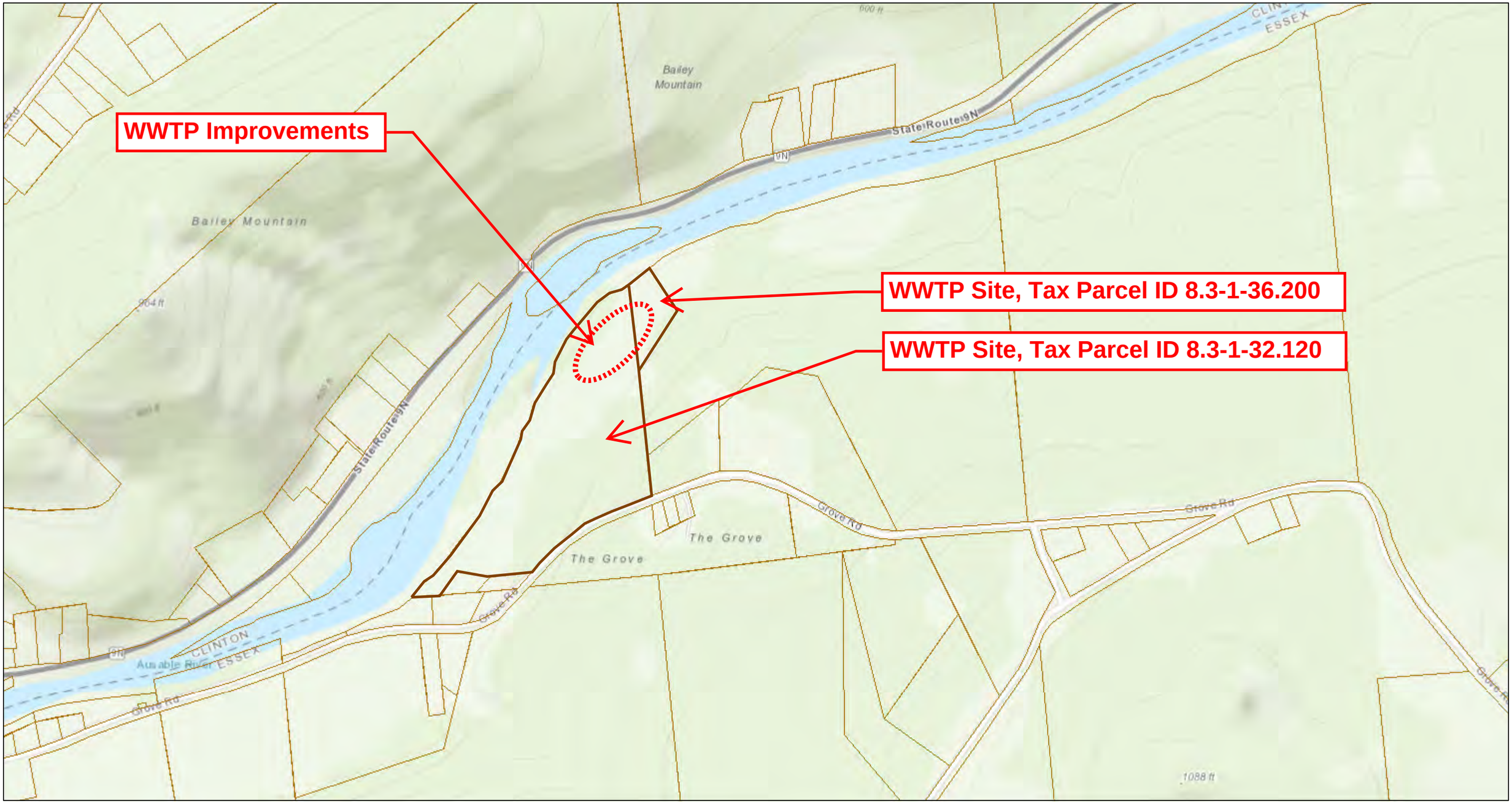
M.J. ENGINEERING AND LAND SURVEYING, P.C.
1533 Crescent Road, Clifton Park, NY 12065
Phone: (518) 371-0799
Fax: (518) 371-0822

www.mjels.com

Appendix C

Site Location Map

SITE LOCATION MAP



December 3, 2019

1:9,028

0 0.1 0.2 0.4 mi

0 0.175 0.35 0.7 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

NYS Department of Environmental Conservation
Not a legal document

Appendix D

Boundary Survey and Easements

WWTP Site, Tax Parcel ID 8.3-1-36.200

WWTP Site, Tax Parcel ID 8.3-1-32.120

SEE MAP NOTE #1

AUSABLE RIVER

GROVE ROAD (49.5' R.O.W.)

N.41°48'54"E. 75.78'
N.50°58'32"E. 65.99'
N.61°51'52"E. 63.86'
N.57°22'38"E. 24.11'
N.69°46'53"E. 111.52'
N.44°11'39"E. 114.68'
N.60°34'14"E. 19.31'
N.60°34'14"E. 149.69'
N. 24°56'28"E. 90.69'
N.25°46'26"E. 134.58'
N. 35°22'24"E. 100.68'
N.40°23'00"E. 92.84'
N.18°22'00"E. 85.91'
N.37°51'57"E. 84.98'
N.25°00'50"E. 129.89'
N.31°09'54"E. 134.61'
N.40°42'46"E. 137.95'
N.32°46'15"E. 148.86'
N.46°58'50"E. 146.34'
N.35°56'33"E. 117.52'
N.48°38'39"E. 99.34'
N.48°37'14"E. 83.99'
N.47°38'47"E. 81.61'
N.41°18'05"E. 56.08'
N.90°00'00"W. 152.18'
S.40°21'34"W. 160.00'
N.78°08'55"W. 195.00'
N.90°00'00"W. 210.00'
S.61°44'10"W. C=479.18' L=483.10' R=1093.74'
S.74°23'23"W. 208.17'
S.49°04'56"W. 133.82'
S.00°00'00"W. 703.88'
S.38°05'36"W. 420.04'
S.28°20'15"E. 271.29'
N.39°29'19"W. 1199.66'

TOP OF BANK @ MEAN HIGH WATER MARK AS FIELD LOCATED MARCH 29, 1989

METAL GATE
12' WIDE DIRT DRIVE
POST / RAIL FENCE
12"W PINE
BOX WIRE FENCE LINE
10"W PINE
WOOD FENCE POST
8"W PINE
2 STORY DWELLING
GARAGE
WOOD STAKES
2" ALDER
2" I.P.F.
1" I.P.F. IN PILE OF STONE
Y.C.I.R.
POST & RAIL FENCE
TRIPLE 6" HORN W/ BARBED WIRE
METAL FENCE POST W/BARBED WIRE
14"W PINE
18"W PINE
POST W/WIRE IN STONE PILE
8"W PINE
P.O.B. PARCEL 2
WOOD FENCE POST
METAL FENCE POST
POLE T-149
POLE
8" STUMP W/ WIRE
5" I.P.F. ON LINE
P.O.B. PARCEL 1
BOX LINK & BARBED WIRE FENCE
1" I.R.F. IN PILE OF STONE
5/4" I.P.F.
POLE T-151
BERM
BLDG
BLDG

Lands N/F of
FRANCIS SOULIER
L 936 / P 266
PARCEL NO. 1
AREA = 20.98± ACRES
"MAULE'S PATENT"

PARCEL NO. 2
AREA = 1.94± ACRES

Lands to be Retained by
FRANCIS SOULIER
AREA = 0.50 ± ACRES

Lands N/F of
FRANCIS SOULIER & IDA SOULIER
L 219 / P 152

Lands N/F of
EUGENE SHEFFIELD & VALDA SHEFFIELD
L 367 / P 219
Formerly Lands of
J. & J. ROGERS COMPANY

Lands N/F of
PAUL J. BEATTIE & LAUREL A. BEATTIE
L 594 / P 263

Lands N/F of
ARTHUR LATHAM & VIRGINIA LATHAM
L 467 / P 442

Lands N/F of
ARTHUR LATHAM & VIRGINIA LATHAM
L 841 / P 86

Lands N/F of
TOWN OF JAY (TOWN DUMP)
L 277 / P 145
L 192 / P 196

NEW YORK STATE ELECTRIC & GAS CORP UTILITY EASEMENT, L 321, P 219 WITH 50' CLEARING LIMITS EACH SIDE OF POLE LINE

30' WIDE NEW YORK STATE ELECTRIC & GAS CORP UTILITY EASEMENT, L 602, P 54

168 169 159 158

MAP REFERENCES:

1) "MAP OF MAULES PATENT ESSEX & CLINTON COUNTIES COPIED FROM MAP #767 IN THE OFFICE OF THE CONSERVATION DEPT." BY ALBERT T. DAVIS DATED FEB. 20, 1928.

2) MAP OF HALE BROOK PARK & ADJOINING LANDS PROPERTY OF CALVIN PARADE IN ESSEX CO. N.Y. BY ARTHUR E. COONROD

MAP NOTES:

1) NORTH ORIENTATION AND BEARING BASE PER MAP REFERENCE ONE.

2) THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN UP TO DATE TITLE REPORT AND MAY BE SUBJECT TO ANY STATEMENT OF FACTS THAT SUCH DOCUMENT MAY DISCLOSE.

3) DUE TO AMBIGUITY IN THE DESCRIPTION OF THE SUBJECT PARCEL, THE EXACT COURSE AND DISTANCES SHOWN HEREON WERE ESTABLISHED FROM EXISTING MONUMENTATION, ADJOINING DEEDS AND MAP REFERENCES.

4) PARCEL MAY BE SUBJECT TO NYSE & G EASEMENTS AS DESCRIBED IN L. 321, P. 219 AND L. 602, P. 54.

5) EASEMENTS AS LISTED IN THE FRANCIS SOULIER TITLE REPORT PREPARED BY G & G ABSTRACTS DATED OCT. 24, 1989, THE FOLLOWING ARE NOT PLOTTABLE
⚠2 NEW YORK TELEPHONE COMPANY, L. 384, P. 182
NEW YORK STATE ELECTRIC & GAS, L. 750, P. 43
NEW YORK STATE ELECTRIC & GAS, L. 775, P. 82

LEGEND:

Y.C.I.R. - YELLOW PLASTIC CAPPED IRON ROD

JUN 15 '90 PM

OFFICE OF ESSEX COUNTY CLERK

JUN 26 1990

C.T. MALE ASSOCIATES
PRINTED AND ISSUED

DATE		RECORD OF WORK	Drawn	Check	Appr
6/12/89	⚠1	PARCEL TO BE RETAINED BY SOULIER ADDED	M.R.H.		CJD
1/25/90	⚠2	TITLE REVIEWED & EASEMENTS ADDED	M.R.H.		CJD
	⚠3				
	⚠4				
	⚠5				
	⚠6				
	⚠7				
	⚠8				

Drafter: M.R.H. | Checker: BDC | Appr. by: CJD

DATE: APRIL 19, 1989

BOUNDARY SURVEY
PORTION OF LANDS N/F SOULIER
FOR THE TOWNS OF BLACKBROOK AND JAY
AUSABLE FORKS SEWER PROJECT

TOWN OF JAY | COUNTY OF ESSEX, N.Y.

C. T. MALE ASSOCIATES, P.C.
50 Century Hill Drive, P.O. Box 727, Latham, NY 12110
(518) 785-0976
Engineering Surveying Architecture Landscape Architecture
Laboratory Services Computer Services

SCALE: 1" = 100' | PROJ. NO. 89.430 | SHEET 1 OF 1 | DWG. NO. 89-197

4112

BRUNING 44-232 73015

BOOK 321 PAGE 219

Easement

This Instrument Witnesseth that Francis O. Soulier and Ida L. Soulier residing in Canadice Corners, New York

, hereinafter called the Grantor, being the owner of or having an interest in land situate in the Town of Jay, County of Essex, State of New York, fronting on the street or highway known as Keene Road, and bounded Northerly by the lands of Canada Lines, and Southerly by the lands of Town of Jay and Essex County, and being more fully described in a deed from Joseph Soulier, widower to Francis Soulier and Ida Soulier dated May 28 - 1938, and recorded in the Essex County Clerk's office in Book 219 of Deeds at Page 512, for and in consideration of the sum of One Dollar ($1.00), the receipt of which is hereby acknowledged and the further consideration to be paid or tendered as hereinafter provided, the Grantor hereby grant and release unto the NEW YORK STATE ELECTRIC & GAS CORPORATION, a corporation organized under the laws of the State of New York, having its principal office at 108 East Green Street, Ithaca, New York, hereinafter called the Grantee, its successors and assigns, the right, privilege and authority now and from time to time to construct, reconstruct, operate, inspect, maintain, and at its pleasure remove, one metal pole line with wires, cross arms, guy wires, braces, communication facilities, lightning protective equipment, including overhead and underground wires, and other fixtures or appurtenances used or adopted for the transmision and/or distribution of electric current for public or private use, upon, across, over and under said land and property as follows:

The said line to be on Grantors lands on the North from the Canada Creek at a point West of Grantors residence and continue in a Southerly direction to the lands of the Town of Jay (The Dump Land) Essex County. Said line to be located on Grantors lands on the East side, South of residence and said structures to be located next to the lot line. Said line to be located as now staked along the ground and will be further evidenced by a line of poles when erected.

Together with free ingress and egress for all of the above purposes including the right now and from time to time to trim, cut, and remove trees and brush and other obstructions within 50 feet of said wires and said line or lines.

Provided, however, that any damage (other than for trimming, cutting, or removing trees, as above provided) to the property of the Grantor, caused by the Grantee in constructing or repairing said line or lines, shall be borne by the Grantee.

Reserving, however, to the Grantor the right to cultivate and use the ground between said poles and beneath said wires, provided that such use shall not interfere with or obstruct the rights herein granted.

That on or before One year from the date of this instrument there shall be paid or tendered by the Grantee to the Grantor the further sum of $ 300.00 Three Hundred and no/100 Dollars. Should the additional consideration not be paid or tendered as herein provided this grant shall terminate and not be binding on either party hereto.

The Grantor accept the obligation of the Grantee to pay any consideration payable hereunder in lieu of any vendors' lien in respect thereto.

The Grantor hereby warrant the title to the rights above granted and that the same are free and clear of all liens and incumbrances, except as may be herein expressly shown, as follows:

None

and that the Grantor will execute or procure any further necessary assurance of the title to said premises as may be required by the Grantee.

This instrument shall be binding on the respective heirs, executors, administrators, successors and assigns of the respective parties.

In Witness Whereof, The Grantors have hereunto set their hand and seal this 7th day of July, 1954.

In Presence of:

William W. Lockhard as to both

Francis O. Soulier (L.S.)

Ida L. Soulier (L.S.)

(L.S.)

(L.S.)

(L.S.)

(L.S.)

DOCUMENTARY DOCUMENTARY

$ .55 U.S.I.R. STAMPS ATTACHED

RW-20-NYS 2-47

Liber 602 PAGE 54

00324

Easement

The Undersigned, hereinafter called the Grantor....., being the owner of or having an interest in land situate in the Town of Jay County of Essex, State of New York, fronting on the street or highway known as Brown Road and bounded Northerly and northwesterly by the ~~land of~~ Ausable River and ~~southerly~~ by the land of Eugene Sheffield, Paul Beattie and Arthur Latham

In Consideration, of $1.00 paid by the Grantee, hereby grants and releases unto the NEW YORK STATE ELECTRIC & GAS CORPORATION, a corporation organized under the laws of the State of New York, having an office at Town of Dryden, (no street address), County of Tompkins, State of New York, herein called the Grantee, its successors and assigns, its or their lessees or licensees, the right, privilege, and authority at anytime to construct, reconstruct, extend, operate, inspect, maintain, and at its pleasure, remove a pole line with the necessary wires, cross arms, guy wires, braces and other fixtures and appurtenances used or adopted for the transmission and/or distribution of electric current and/or for telephone or telegraph communication for public or private use, upon and over said land and property and/or the highways abutting or running through said land. The easement and right of way hereby granted and released is 30 feet in width throughout its extent, situate, lying and being as follows:

The intent of the easement and right of way, herein granted, is to establish a centerline for an easement and right of way area for Grantee's existing wood pole electric line heretofore located on the lands of the Grantor; the said centerline is to be established by and concurrent with the centerline of said existing wood pole electric line; together with all rights herein mentioned and granted; together with the right to extend primary, secondary and service wire lines from existing poles located on Grantor's land to serve the requests of adjacent property owners.

Together with the right to trim, cut, and remove trees and brush to the extent necessary to clear said wires and pole line by 5 feet.

Provided, however, that any damage (other than for trimming, cutting, or removing trees, as above provided) to the property of the Grantor....., caused by the Grantee in constructing or repairing said line, shall be borne by the Grantee.

Reserving, however, to the Grantor..... the right to cultivate the ground between said poles and supporting structures and beneath said wires and fixtures and the right to cross and recross said easement and right of way provided that such use of said ground shall not interfere with, obstruct or endanger any rights granted as aforesaid and shall not disturb the grade of said ground as it now exists, and provided that no structure shall be erected, and no excavating, mining or blasting shall be undertaken within the limits of the right of way without written consent of the Grantee. Grantor..... in said use of said ground shall maintain a clearance of 10 feet or more from Grantee's aerial wires with equipment or otherwise.

In Witness Whereof, the Grantor..... ha.. hereunto set her hand and seal this 15 th day of November, 19 75.

In Presence of:

Paul J Beattie, Jr.

✓ Ida Saulsbee (L.S.)
Address: Ausable Forks, New York

.....(L.S.)
Address: .....

.....(L.S.)
Address: .....

.....(L.S.)
Address: .....

ESSEX COUNTY 0 1 6 5 7 9
REAL ESTATE TRANSFER TAX
Dept. of Taxation & Finance
STATE OF NEW YORK
00.00
PTD. 10947

RW-3 6-75

NEW YORK STATE ELECTRIC & GAS CORP.-ITHACA DOCUMENT FILE RWC— 18

Easement

L

Line 267

CC:

Auth. 15055-900 Parcel No. 692

Construction W. O. No. 15120 - 1036

COST CENTER 15-70

IDA SOULIER

TO

NEW YORK STATE ELECTRIC
& GAS CORPORATION

Dated 15 NOVEMBER, 1975

State of New York
County of Essex } ss:

Recorded on the 3rd day of December, 1975 at 9 o'clock A M. In Book 602 of Deeds at Page 54 and examined.

(Clerk)

(Personal Acknowledgment)

State of New York
County of } ss:

On this ..... day of .....,
19....., before me, the subscriber, personally appeared

.....

.....

.....

.....

to me personally known and known to me to be the same person... described in and who executed the within Instrument and duly acknowledged to me the execution of the same.

.....
(Notary Public)

REMARKS JOB

NOV 26 1975

Paid from Working Fund ..... Office

Ck. No. ..... Amt. ..... Date .....

Ck. No. ..... Amt. ..... Date .....

Consideration on this Document is less than $100.00.

RETURN TO

CORPORATE DOCUMENT DEPARTMENT
NEW YORK STATE ELECTRIC & GAS CORP.
POST OFFICE BOX 287
ITHACA, NEW YORK 14850

(Subscribing Witness Acknowledgment)

State of New York
County of CLINTON } ss:

On this 18TH day of NOVEMBER,
19 75, before me personally came
PAUL J. BEATTIE JR.,
the subscribing witness to the foregoing Instrument, with whom I am personally acquainted, who being by me duly sworn, did depose and say that he resides at
GROVE ROAD,
in the HAMLET OF AUSABLE FORKS, IN THE TOWN
of JAY, IN THE COUNTY OF ESSEX,
that he knew IDA SOULIER

.....

.....

.....

to be the individual described in and who executed the foregoing Instrument; that he, said subscribing witness, was present and saw her execute the same; and that he, said witness, at the same time, subscribed his name as witness thereto.

Frederick F. Chase
(Notary Public)
FREDERICK F. CHASE
Notary Public, State of New York
Reg. No. 10-0621600
Qualified in the County of Clinton
My Commission Expires March 30, 19 77

INDEXED

ASSESSORS

MICROFILMED

RECORDED

(Corporate Acknowledgment With Seal)

State of New York
County of } ss:

On this ..... day of .....,
19....., before me came .....

.....

to me personally known, who, being by me duly sworn, did depose and say that he resides at .....

.....

in the .....

of .....

and that he is .....

of .....

the corporation described in and which executed the above Instrument that he knows the seal of said Corporation; that the seal affixed to said Instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said Corporation, and that he signed h name thereto by like order.

.....
(Notary Public)

BOOK 602 PAGE 55

FORM 553 N.Y. DEED—WARRANTY

BOOK 971 PAGE 23
TUTBLANX REGISTERED U. S. PAT. OFFICE
TUTTLE LAW PRINT, PUBLISHERS, RUTLAND, VT 05701

2147

RECORDED JUL 13 1990
TIME 9:00 AM
BOOK 971 Deeds
PAGE 23
William C. Hamm
Jr. ESSEX CO. CLERK

This Indenture,

Made the 28th *day of* February,

Nineteen Hundred and NINETY

Between **FRANCIS D. SOULIER**, of 47 Case Road, Burlington, Connecticut

party of the first part, and

TOWN OF BLACK BROOK, a municipal corporation of the State of New York, with its offices located at AuSable Forks, New York, acting for and on behalf of the AuSable Forks/Black Brook Sewer District and the **TOWN OF JAY**, a municipal corporation of the State of New York, with offices located at AuSable Forks, New York, acting for and on behalf of the AuSable Forks/Jay Sewer District

parties of the second part,

Witnesseth *that the party of the first part, in consideration of* ---------

ONE and no/100 ----------*Dollar* ($1.00---) *lawful money of the United States,* and other good and valuable consideration *paid by the parties of the second part, do hereby grant and release unto the parties of the second part,* its successors *and assigns forever, all*

THAT PIECE OR PARCEL OF LAND situate in the Town of Jay, County of Essex, State of New York and being more particularly bounded and described on Schedule A hereto annexed and made a part hereof.

2184

RECEIVED
$ -0-
REAL ESTATE
JUL 13 1990
TRANSFER TAX
ESSEX
COUNTY

IN
AS
MI
RE

SCHEDULE A

LEGAL DESCRIPTION
PORTION OF LANDS NOW OR FORMERLY OF SOULIER
FOR THE TOWNS OF BLACK BROOK AND JAY
AUSABLE FORKS SEWER PROJECT
TOWN OF JAY, COUNTY OF ESSEX, STATE OF NEW YORK

All those certain tracts, pieces or parcels of land situate, lying and being in the Town of Jay, County of Essex, State of New York lying generally Northerly of Grove Road and being more particularly bounded and described as follows:

PARCEL NO. 1

BEGINNING at the point of intersection of the common division line between the lands now or formerly of Francis Soulier as described in Book 936 of Deeds at Page 266 on the West and the lands now or formerly of the Town of Jay as described in Book 277 of Deeds at Page 143, and Book 192 of Deeds at Page 196 and lands now or formerly of Francis Soulier and Ida Soulier as described in Book 219 of Deeds at Page 152 on the East with the Northerly boundary of Grove Road and runs thence from said point of beginning along the Northerly and Northwesterly boundary of Grove Road the following three (3) courses: 1) South 74 deg. 23 min. 23 sec. West 208.17 feet to a point of curvature; 2) in a generally Westerly direction along a curve to the left having a radius of 1,093.74 feet, a chord bearing of South 61 deg. 44 min. 10 sec. West and a chord distance of 479.18 feet, an arc length of 483.10 feet to a point of tangency and 3) thence South 49 deg. 04 min. 56 sec. West 133.82 feet to its intersection with the division line between the lands now or formerly of Francis Soulier on the North and the lands now or formerly of Arthur Latham and Virginia Latham as described in Book 841 of Deeds at Page 86 on the South; thence North 90 deg. 00 min. 00 sec. West along the above last mentioned division line 210.00 feet to its intersection with the division line between the lands now or formerly of Francis Soulier on the Northwest and the lands now or formerly of Latham on the Southeast; thence through the lands now or formerly of Francis Soulier the following two (2) courses: North 78 deg. 08 min. 55 sec. West

195.00 feet to a point; thence South 40 deg. 21 min. 34 sec. West 160.00 feet to a point on the common division line between the lands now or formerly of Francis Soulier on the North and the lands now or formerly of Paul J. Beattie and Laurel A. Beattie as described in Book 594 of Deeds at Page 263 and lands now or formerly of Eugene Sheffield and Valda Sheffield as described in Book 367 of Deeds at Page 219 (formerly lands of J. & J. Rogers Company) on the South; thence North 90 deg. 00 min. 00 sec. West along the above last mentioned common division line 152.18 feet to its intersection with the Southeasterly bank of the AuSable River (mean (high water mark as field located March 29, 1989); thence along the Southeasterly bank of the AuSable River as it winds and turns the following twenty-three (23) courses: 1) North 41 deg. 18 min. 05 sec. East 56.08 feet to a point; 2) thence North 47 deg. 38 min. 47 sec. East 81.61 feet to a point; 3) thence North 48 deg. 37 min. 14 sec. East 83.99 feet to a point; 4) thence North 48 deg. 38 min. 39 sec. East 99.34 feet to a point; 5) thence North 35 deg. 56 min. 33 sec. East 117.52 feet to a point; 6) thence North 46 deg. 58 min. 50 sec. East 146.34 feet to a point; 7) thence North 32 deg. 45 min. 15 sec. East 148.86 feet to a point; 8) thence North 40 deg. 42 min. 46 sec. East 137.95 feet to a point; 9) thence North 31 deg. 09 min. 54 sec. East 134.61 feet to a point; 10) thence North 25 deg. 02 min. 50 sec. East 129.88 feet to a point; 11) thence North 37 deg. 51 min. 57 sec. East 84.98 feet to a point; 12) thence North 18 deg. 22 min. 00 sec. East 85.91 feet to a point; 13) thence North 40 deg. 23 min. 00 sec. East 92.84 feet to a point; 14) thence North 35 deg. 22 min. 24 sec. East 100.68 feet to a point; 15) thence North 24 deg. 56 min. 28 sec. East 90.69 feet to a point; 16) thence North 25 deg. 46 min. 26 sec. East 134.58 feet to a point; 17) thence North 50 deg. 58 min. 32 sec. East 65.99 feet to a point; 18) thence North 41 deg. 48 min. 54 sec. East 75.78 feet to a point; 19) thence North 44 deg. 11 min. 39 sec. East 114.68 feet to a point; 20) thence North 57 deg. 22 min. 38 sec. East 24.11 feet

to a point; 21) thence North 61 deg. 51 min. 52 sec. East 63.86 feet to a point; 22) thence North 69 deg. 46 min. 53 sec. East 111.52 feet to a point; and 23) thence North 60 deg. 34 min. 14 sec. East 19.31 feet to its intersection with the above first mentioned common division line; thence South 00 deg. 00 min. 00 sec. West along the said above first mentioned common division line 1,199.66 feet to the point or place of beginning and containing 20.98 acres of land more or less.

PARCEL NO. 2

BEGINNING at a point on the common division line between the lands now or formerly of Francis Soulier as described in Book 936 of Deeds at Page 266 on the West and the lands now or formerly of the Town of Jay as described in Book 277 of Deeds at Page 143 and Book 192 of Deeds at Page 196 and lands now or formerly of Francis Soulier and Ida Soulier as described in Book 219 of Deeds at Page 152 on the East; said point being distant North 00 deg. 00 min. 00 sec. East 703.88 feet as measured along the above mentioned common division line from its intersection with the Northerly boundary of Grove Road and runs thence from said point of beginning North 00 deg. 00 min. 00 sec. East along the above mentioned common division line 495.79 feet to its intersection with the Southeasterly bank of the AuSable River (mean high water mark as located March 29, 1989); thence North 60 deg. 34 min. 14 sec. East along the Southeasterly boundary of the AuSable River as it winds and turns 149.69 feet to a point; thence through the lands now or formerly of Francis Soulier and Ida Soulier as described in Book 219 of Deeds at Page 152 the following two (2) courses: 1) South 28 deg. 20 min. 15 sec. East 271.28 feet to a point; and 2) thence South 38 deg. 05 min. 36 sec. West 420.04 feet to the point or place of beginning and containing 1.94 acres of land more or less.

C.T. MALE ASSOCIATES, P.C.

C. JEFFREY DENISON, PLS

April 18, 1989
Revised June 9, 1989
JD/BC

NOTE: As shown on a map entitled "Boundary Survey, Portion of Lands Now or Formerly of Soulier for the Towns of Black Brook and Jay, AuSable Forks Sewer Project," Town of Jay Essex County, New York, dated April 18, 1989 and revised June 9, 1989. C.T. Map No. 89-197.

BOOK 471 PAGE 28

SCHEDULE A

The above described premises are part of the same premises described in a deed from Ida L. Soulier a/k/a Ida Soulier to Francis Soulier by deed dated February 2, 1989, and thereafter recorded in the Clinton County Clerk's Office in Vol. 936 of Deeds at Page 266.

Reference is hereto made to a certain map prepared by C.T. Male Associates, P.C. entitled "Boundary Survey Portion of Lands now or formerly of Soulier for the Town of Black Brook and Jay AuSable Forks Sewer Project", Town of Jay, Essex County, New York, dated April 18, 1989, revised June 12, 1989 and January 25, 1990.

Annexed hereto and made a part hereof as Schedule A-1 is a sketch of a small portion of Parcel One together with the access road from said Parcel One to Grove Road so-called. Among the things noted thereon is a metal gate which is also shown on the aforementioned map.

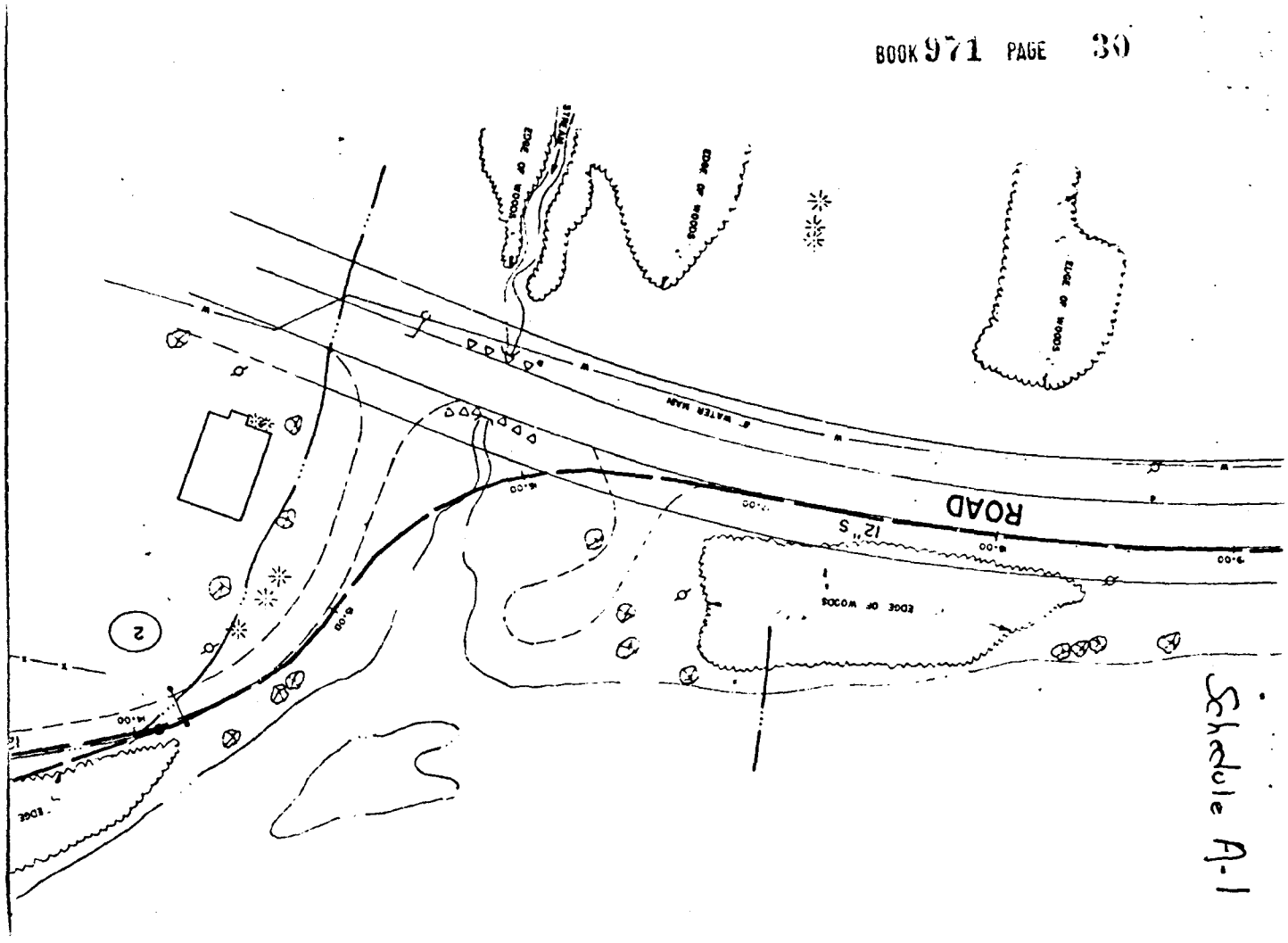
The party of the first part does first give, grant and convey to the party of the second part herein, its successors and assigns, in common with the party of the first part herein, a right of way for ingress and egress for all purposes over and across the existing dirt road or roadway as the same extends from the generally southerly or southwesterly bounds of said Parcel one, and generally in a southerly or southwesterly direction to Grove Road so-called. Said right of way to be seven and one-half feet (7½') feet on either side of the centerline of said existing dirt road or roadway.

It is hereby granted to the extent that the grantor herein owns or has a interest on the property of which said right of way is granted.

That the party of the first part herein does hereby except and reserve unto himself, his grantees/heirs and assigns a right of way for ingress and egress over and across the aforesaid dirt road or roadway as same extends from the southwesterly corner direction of said Parcel One in a general northeasterly direction over and across the premises hereinabove described and conveyed to other premises owned by the party of the second part herein and situate easterly or northeasterly of the above described premises together with a further right of way for ingress and egress from dirt road or roadway being twelve feet (12') in width to a 0.50 +/- acre parcel noted on said map retained by the Party of the First part for the purpose of gaining egress and ingress thereto. The exact location of the said right of way shall be determined by mutual agreement between the parties and once so determined shall become permanent as to location and two rights of way herein excepted and reserved shall run with the land and be appurtenant to said other premises owned by the Party of the First part herein so situate easterly or northeasterly of the above described premises as to the first right of way and to said 0.50+/- parcel as to second right of way .

The above described premises is conveyed subject to easements and other right of record.

The party of the first part herein does further give, grant and convey to the party of the second part, its successors and assigns the right to enter upon other premises situate southwesterly of said parcel one with the extent that the party of the first part owns all or a portion thereof for the purpose of constructing , operating, maintaining, inspecting, repairing, removing or replacing a sewer effluent line or main with all appurtenances thereto, together with right of egress or ingress for all purposes. Said right of way and easement shall extend twenty (20') feet on either side of location of the proposed effluent line as shown and designated on a sketch plat annexed hereto and marked as Schedule A-1.


ROAD
12" S
EDGE OF WOODS
EDGE OF WOODS
EDGE OF WOODS
EDGE OF WOODS
8" WATER MAIN
2
EDGE

Schedule A-1

Together *with the appurtenances and all the estate and rights of the party of the first part in and to said premises,*

To Have and to Hold *the premises herein granted unto the parties of the second part,* its successors *and assigns forever.*

And *said* PARTY OF THE FIRST PART

First. *That the parties of the second part shall quietly enjoy the said premises;* *covenants as follows:*

Second. *That said* PARTY OF THE FIRST PART

will forever **Warrant** *the title to said premises.*

In Witness Whereof, *the party of the first part has hereunto set hand and seal the day and year first above written.*

In Presence of

Robert G. Gillespie

Amy M. Brignano

Frances D. Soulier L.S.
FRANCIS D. SOULIER

_____ L.S.

_____ L.S.

_____ L.S.

CONNECTICUT

State of ~~New York~~ } **ss:** *On this* 28th *day of* February

County of HARTFORD } *Nineteen Hundred and* NINETY

before me, the subscriber, personally appeared

FRANCIS D. SOULIER

to me personally known and known to me to be the same person described in and who executed the within Instrument, and he duly *acknowledged to me that he executed the same.*

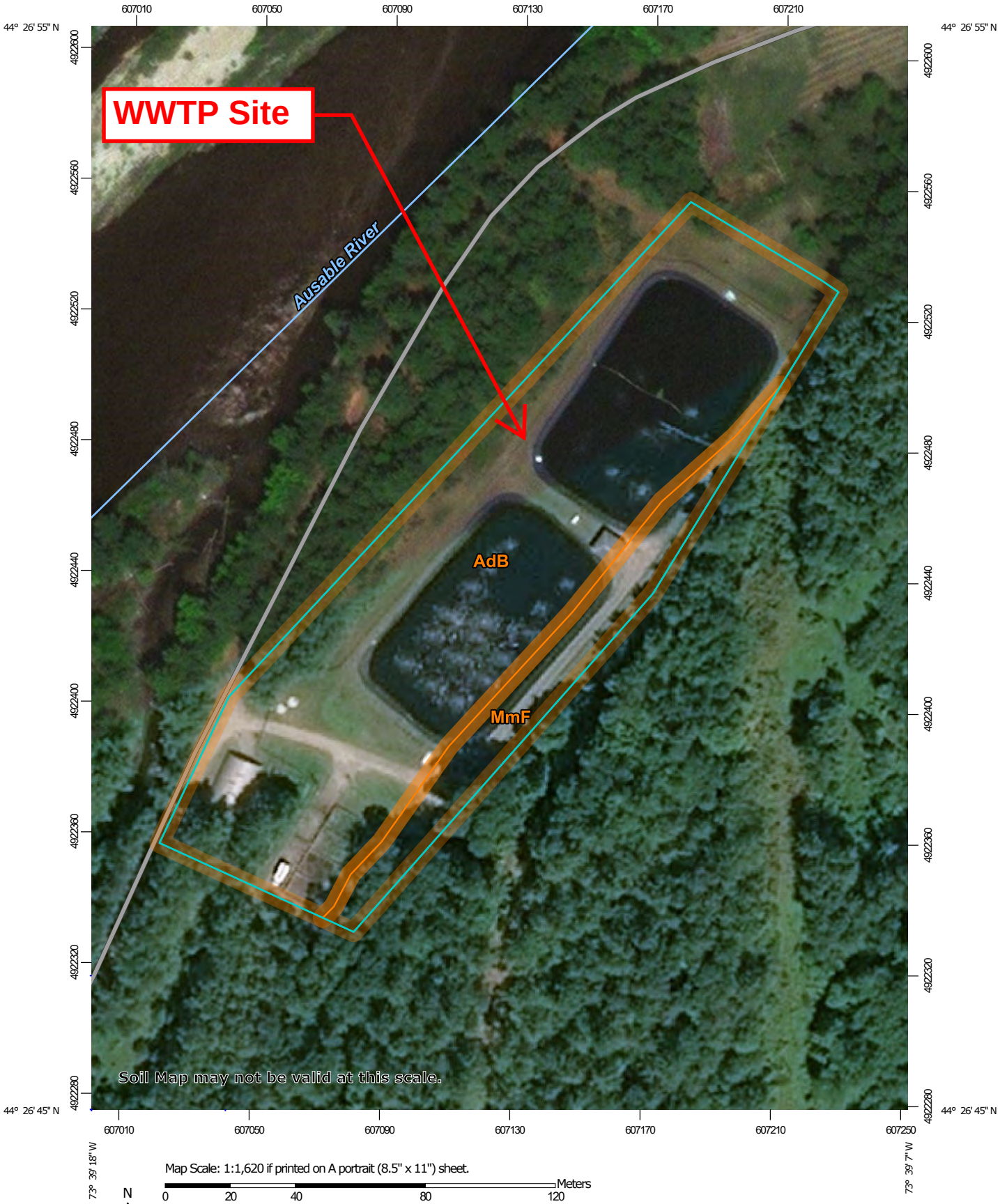
Nyla H. Christensen

Nyla H. Christensen *Notary Public*
My commission expires: 3/31/94

Appendix E

Soil Survey Map

Soil Map—Essex County, New York
(WWTP SITE)



Map Scale: 1:1,620 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Essex County, New York
Survey Area Data: Version 19, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 28, 2012—Jul 8, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Depth to Any Soil Restrictive Layer

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
AdB	Adams loamy sand, 3 to 8 percent slopes	>200	3.7	85.1%
MmF	Monadnock-Adams complex, 25 to 60 percent slopes, bouldery	>200	0.6	14.9%
Totals for Area of Interest			**4.3**	**100.0%**

Description

A "restrictive layer" is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers.

This theme presents the depth to any type of restrictive layer that is described for each map unit. If more than one type of restrictive layer is described for an individual soil type, the depth to the shallowest one is presented. If no restrictive layer is described in a map unit, it is represented by the "> 200" depth class.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Rating Options

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

Appendix F

Agricultural Districts Map

New York State Dept of Agriculture and Markets

ESSEX COUNTY

SHEET 1 of 2

Agricultural Districts 2018

WWTP SITE

Ag 1

Ag 1

Ag 1

Ag 1

570000 580000 590000 600000 610000 620000 630000

4930000 4920000 4910000 4900000 4890000 4880000

FRANKLIN · BLACK BROOK · CLINTON · ESSEX · AUSABLE · CHESTERFIELD · WILLSBORO · ST ARMAND · WILMINGTON · JAY · LEWIS · ESSEX · NORTH ELBA · KEENE · ELIZABETHTOWN · WESTPORT · MORIAH

SHEET 1

SHEET 2

MAP PROJECTION
UTM Zone 18, NAD83 meters

5 4 3 2 1 0 5 miles
10,000 5,000 0 10,000 meters

KEY

Ag. District 1

DISTRICT CERTIFICATION and TOWNS

DISTRICT 1 CERTIFIED 9/5/2017

Chesterfield	Jay	Moriah	Ticonderoga
Crown Point	Keene	North Elba	Westport
Elizabethtown	Lewis	Saint Armand	Willsboro
Essex	Minerva	Schroon	Wilmington

MAP SOURCE INFORMATION

Map created at Cornell IRIS (Institute for Resource Information Sciences) <http://iris.cals.cornell.edu> for the NYS Department of Agriculture and Markets <https://www.agriculture.ny.gov>

Agricultural Districts boundary data is available at CUGIR (Cornell University Geospatial Information Repository) website: <http://cugir.library.cornell.edu>

Base Map: state250_bw.tif 1998
Scale: 1:250,000; County boundaries imported from the file nyshore.e00 from the NYSGIS Clearinghouse website: <http://gis.ny.gov>

DISCLAIMER
This is a general reference to Agricultural District boundaries; not a legal substitute for actual tax parcel information.

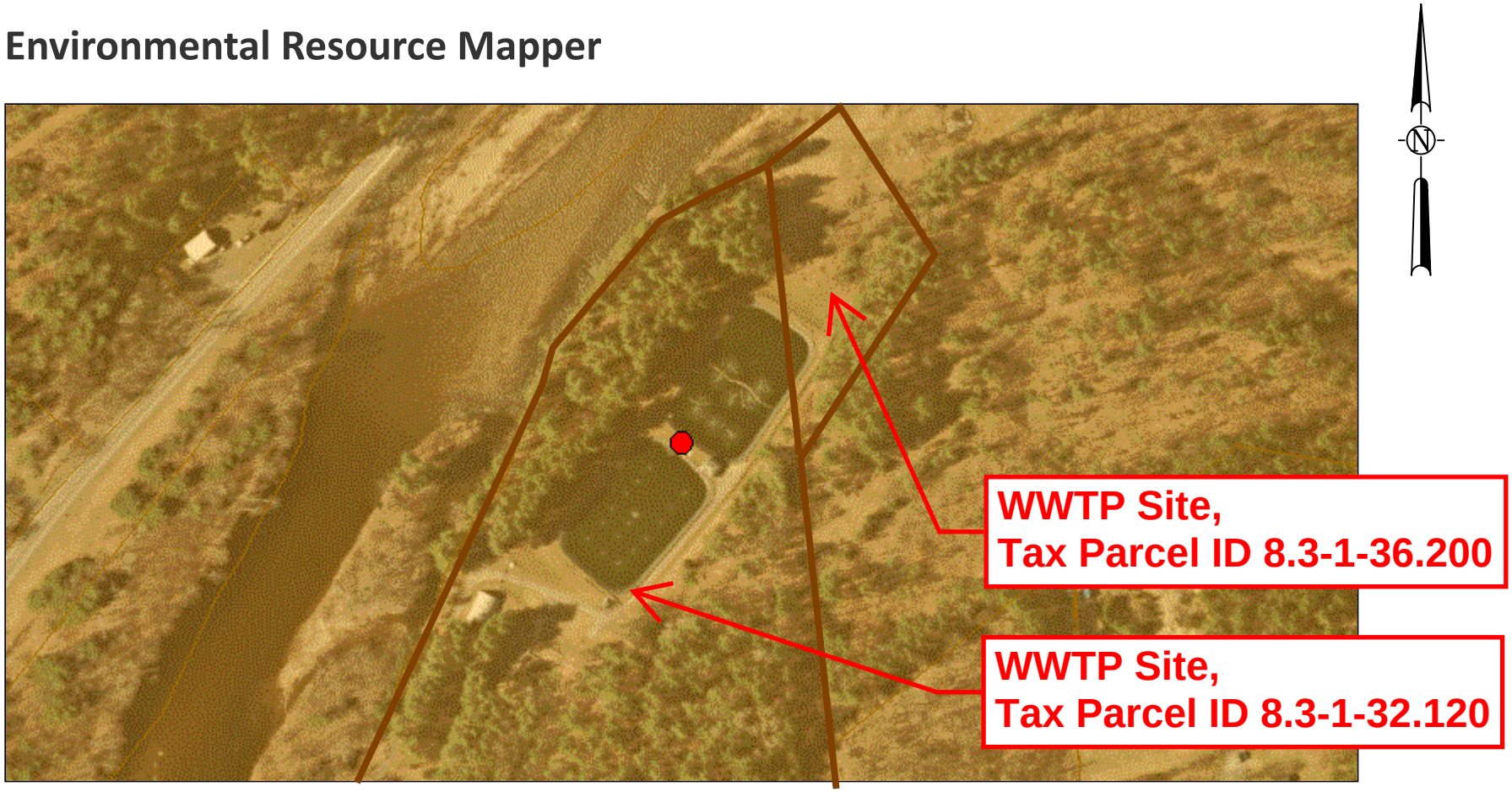
Boundaries as certified prior to April 2018

Open Enrollment Annual Additions through March 2018 are included in this data. Later additions are not. Check with county agencies to confirm the status of individual parcels.

Appendix G

Environmental Resource Map

Environmental Resource Mapper



The coordinates of the point you clicked on are:

UTM 18	**Easting:**	607140.082	**Northing:**	4922458.303
Longitude/Latitude	**Longitude:**	-73.653	**Latitude:**	44.447

The approximate address of the point you clicked on is:
Town of Jay, New York

County: Essex
Town: Jay

USGS Quad: AU SABLE FORKS

DEC Region

Region 5:
(Eastern Adirondacks/Lake Champlain) Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington counties. For more information visit **http://www.dec.ny.gov/about/631.html**.

Rare Plants and Rare Animals

This location is in the vicinity of Bats Listed as Endangered or Threatened -- Contact NYSDEC Regional Office

This location is in the vicinity of Rare Plants Listed as Endangered, Threatened, or Rare by NYS

If your project or action is within or near an area with a rare animal, a permit may be required if the species is listed as endangered or threatened and the department determines the action may be harmful to the species or its habitat.

If your project or action is within or near an area with rare plants and/or significant natural communities, the environmental impacts may need to be addressed.

The presence of a unique geological feature or landform near a project, unto itself, does not trigger a requirement for a NYS DEC permit. Readers are advised, however, that there is the chance that a unique feature may also show in another data layer (ie. a wetland) and thus be subject to permit jurisdiction.

Please refer to the "Need a Permit?" tab for permit information or other authorizations regarding these natural resources.

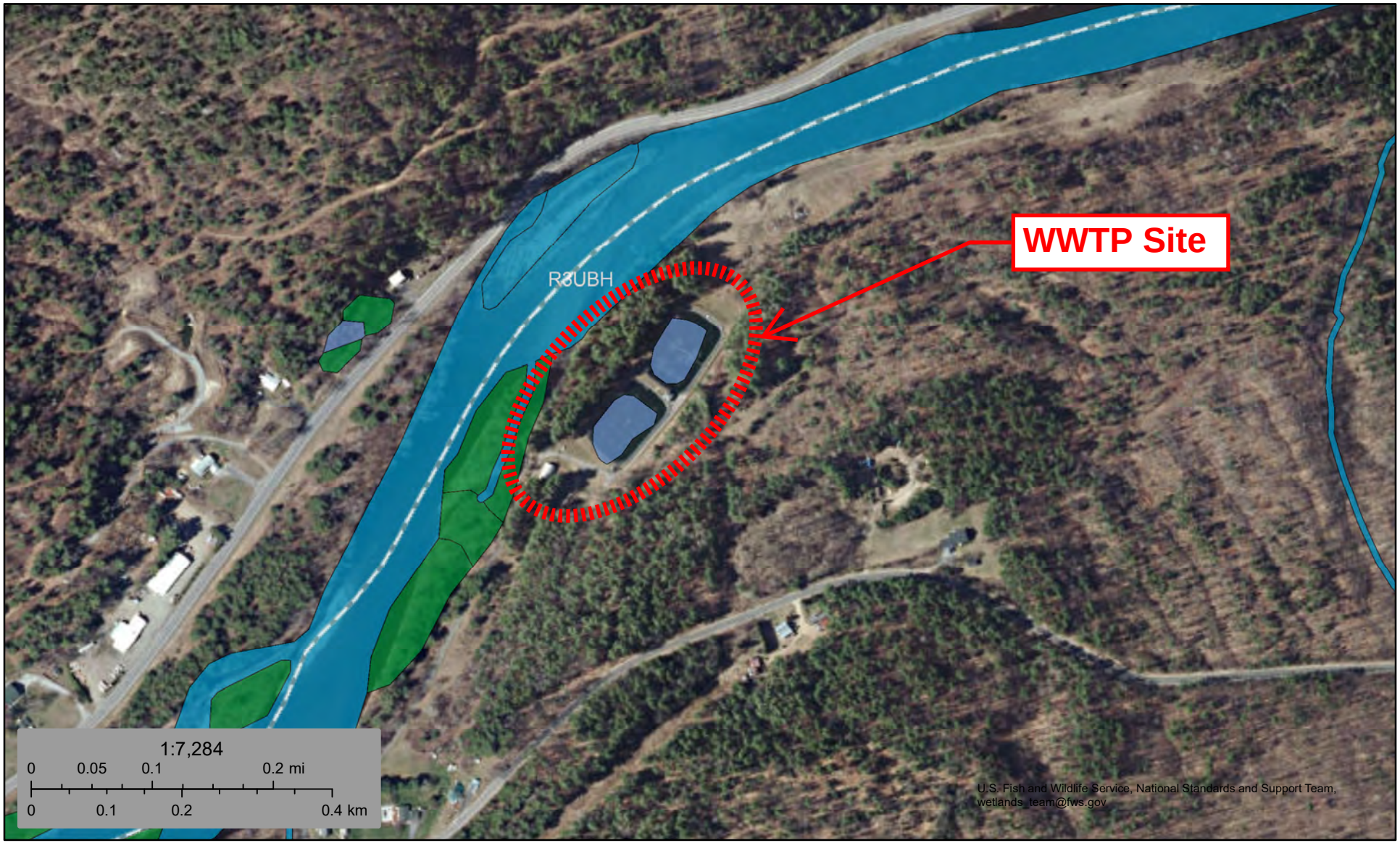
Disclaimer: If you are considering a project or action in, or near, a wetland or a stream, a NYS DEC permit may be required. The Environmental Resources Mapper does not show all natural resources which are regulated by NYS DEC, and for which permits from NYS DEC are required. For example, Regulated Tidal Wetlands, and Wild, Scenic, and Recreational Rivers, are currently not included on the maps.

Appendix H

Federal Wetlands Map

U.S. Fish and Wildlife Service

National Wetlands Inventory



September 23, 2019

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

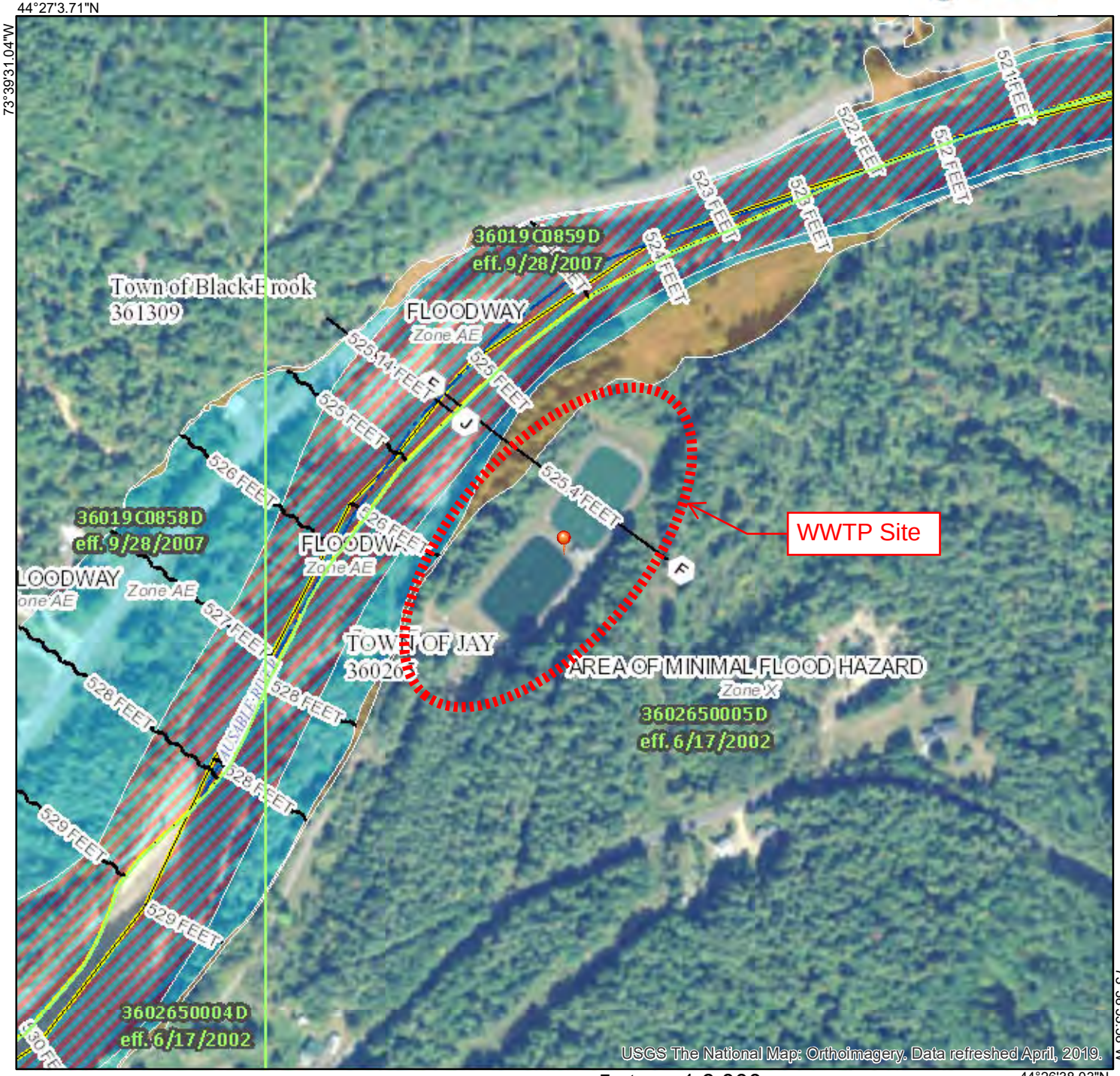
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Appendix I

FEMA Flood Map

National Flood Hazard Layer FIRMette

FEMA



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/29/2019 at 3:07:40 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

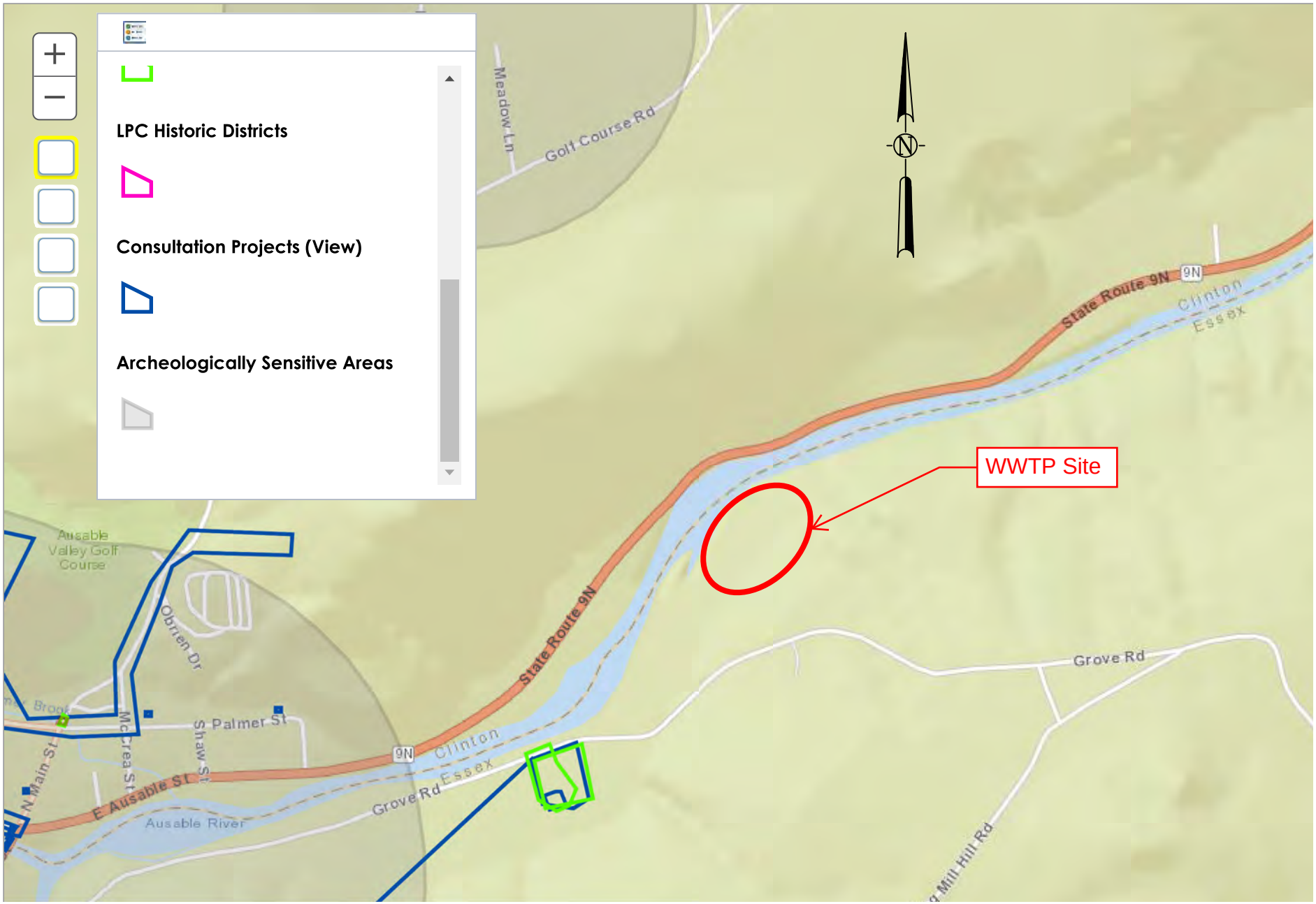
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Appendix J

Cultural Resource Information System Map

CRIS Cultural Resource Information System

HOME SUBMIT SEARCH COMMUNICATE



Appendix K

Existing WWTP Site Layout

SURVEY NOTES:

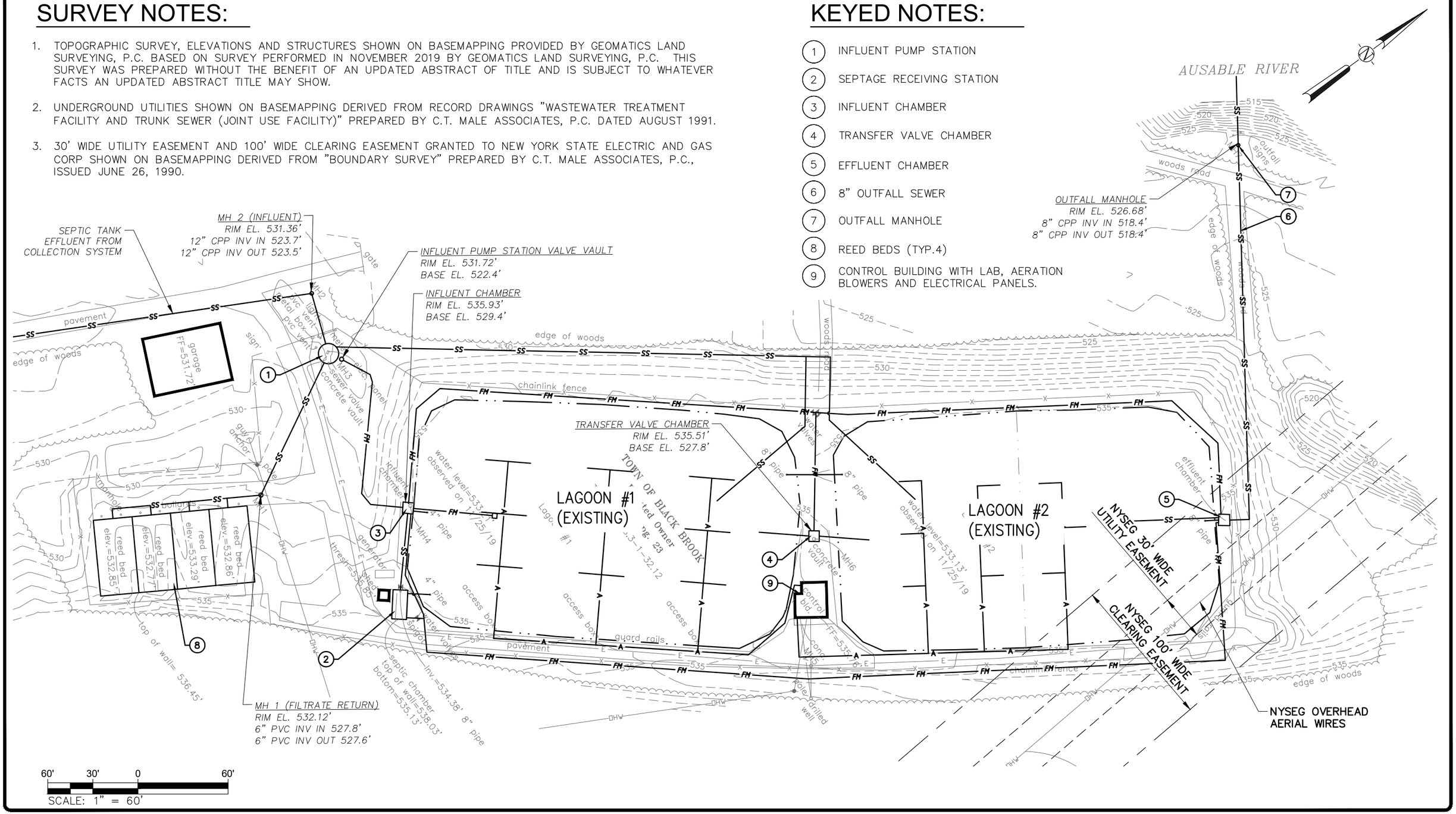
1. TOPOGRAPHIC SURVEY, ELEVATIONS AND STRUCTURES SHOWN ON BASEMAPPING PROVIDED BY GEOMATICS LAND SURVEYING, P.C. BASED ON SURVEY PERFORMED IN NOVEMBER 2019 BY GEOMATICS LAND SURVEYING, P.C. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN UPDATED ABSTRACT OF TITLE AND IS SUBJECT TO WHATEVER FACTS AN UPDATED ABSTRACT TITLE MAY SHOW.

2. UNDERGROUND UTILITIES SHOWN ON BASEMAPPING DERIVED FROM RECORD DRAWINGS "WASTEWATER TREATMENT FACILITY AND TRUNK SEWER (JOINT USE FACILITY)" PREPARED BY C.T. MALE ASSOCIATES, P.C. DATED AUGUST 1991.

3. 30' WIDE UTILITY EASEMENT AND 100' WIDE CLEARING EASEMENT GRANTED TO NEW YORK STATE ELECTRIC AND GAS CORP SHOWN ON BASEMAPPING DERIVED FROM "BOUNDARY SURVEY" PREPARED BY C.T. MALE ASSOCIATES, P.C., ISSUED JUNE 26, 1990.

KEYED NOTES:

1. INFLUENT PUMP STATION
2. SEPTAGE RECEIVING STATION
3. INFLUENT CHAMBER
4. TRANSFER VALVE CHAMBER
5. EFFLUENT CHAMBER
6. 8" OUTFALL SEWER
7. OUTFALL MANHOLE
8. REED BEDS (TYP.4)
9. CONTROL BUILDING WITH LAB, AERATION BLOWERS AND ELECTRICAL PANELS.



SUBMITTAL / REVISIONS

No.	DATE	DESCRIPTION	BY	REVIEWED BY:	DATE

PROJ. MANAGER:	CLD
CHIEF DESIGNER:	MJD
DESIGNED BY:	EH
DRAWN BY:	AS
CHECKED BY:	CLD

SEAL

Engineering and Land Surveying, P.C.
1533 Crescent Road - Clifton Park, NY 12065

TOWN OF JAY
ENGINEERING REPORT

AU SABLE FORKS WWTP
EXISTING WWTP SITE LAYOUT

SCALE:	AS SHOWN
CONTRACT No.:	
MJ PROJ. No.:	1075.04
DATE:	FEBRUARY 2020

K

File Name: F:\MJ\1075\1075.04 Town of Jay\Existing WWTP Layout.dwg (Layout: K)
Date: Mon, Jan 20, 2020 - 11:45 AM (Name: mdrislane)

Appendix L

WWTP Effluent Sampling
and Testing Records

Town of Jay Wastewater Dept Histioical sampling and testing records

SPEDES NY0201910 Outfall - 001

All loading data is shown in LBS/DAY

Removal percentages are as follows BOD/TSS

Date *	Temp *C	PH	SS	DO	BOD-5	TSS	% Removal	Phosphorus *	Flow Avg (MGD)
5/29/2019	16.2	6.8	<0.1	4.1	4	1.5	96 / 99	2.4	0.06
4/3/2019	1.7	7	<0.1	13.04	3.7	3	96 / 97	2.2	0.055
3/6/2019	0	7	<0.1	11.5	3.6	3.7	96 / 96	2	0.051
2/7/2019	0.6	7.2	<0.1	12.7	4.5	5.5	96 / 95	2.4	0.06
1/17/2019	0.1	7.3	<0.1	13.1	3.5	3.4	96 /96	2	0.052
12/5/2018	0.8	7.1	<0.1	14.3	3.7	1.9	96 / 98	2	0.056
11/7/2018	7.6	7.6	<0.1	11.8	3.7	0.5	96 / 100	2	0.056
10/4/2018	15.2	7.5	<0.1	9	4.1	5.8	96 / 94	4.1	0.061
9/5/2018	24.1	7.2	<0.1	5.7	3.4	1.1	96 / 99	3.6	0.051
8/1/2018	24.8	7	<0.1	4.8	2.7	0.4	96 / 99	1.1	0.041
7/5/2018	27.9	7.1	<0.1	2.8	4.3	1.8	96 / 98	3	0.064
6/6/2018	19.9	7.2	<0.1	2.7	3	0.9	96 / 99	2.9	0.045
5/2/2018	11.8	8	<0.1	8.7	4	1.3	96 / 99	2.6	0.06
4/4/2018	4.6	7.8	<0.1	12.4	4.7	3.5	95 / 96	1.8	0.056
3/7/2018	0.8	7.7	<0.1	12.8	3.8	1.9	94 / 97	2.2	0.038
2/7/2018	0.1	7.5	<0.1	13.2	5.9	3.3	94 / 97	2.3	0.059
1/3/2018	3.8	7.6	<0.1	high	3.7	1.6	96 / 98	2.7	0.055
12/6/2017	5.2	7.9	<0.1	high	3.8	1.5	96 / 98	2.2	0.053
11/8/2017	10	8.3	<0.1	19.7	2.7	1.6	96 / 98	2.4	0.041
10/4/2017	17.9	8.8	<0.1	16	4.4	13.2	95 / 98	1.8	0.053
9/6/2017	18.1	9	<0.1	14.2	4.1	12.7	95 / 83	0.9	0.045
8/2/2017	23.8	7.9	<0.1	9.8	2.1	2.2	96 / 96	1.2	0.031
7/5/2017	22.6	7.7	<0.1	10.9	3.2	1.2	96 / 98	2.2	0.048
6/7/2017	17.4	7.3	<0.1	3.5	3.1	1.6	96 / 98	1.6	0.047
5/3/2017	14.5	7.1	<0.1	2.5	11	15.4	86 / 81	2	0.047
4/5/2017	10.3	8	<0.1	17.9	10.4	8.2	87 / 90	1.4	0.051
3/1/2017	4.3	8	<0.1	22.8	4	6.6	95 / 92	1.9	0.048
2/1/2017	4.6	7.9	<0.1	24.4	4.9	8	95 / 91	2.1	0.053
1/4/2017	4.7	7.9	<0.1	24.7	4	6	95 / 93	1.9	0.048
12/7/2016	7.4	7.9	<0.1	27.4	5.9	6.5	92 / 91	1.9	0.044
11/3/2016	12.3	8.5	<0.1	27	11.8	18.4	88 / 81	2.4	0.059
10/5/2016	17.2	7	<0.1	13.6	12.7	9.2	81 / 86	1.3	0.039
9/8/2016	23.9	7.1	<0.1	9.2	3.2	6.9	96 / 91	1.8	0.044
8/4/2016	24.2	7.3	<0.1	6.8	2.3	1.3	96 / 98	1.4	0.035
7/6/2016	24	7.3	<0.1	5.2	1.9	0.6	96 / 99	0.8	0.028
6/1/2016	23.3	7.5	<0.1	3.8	2.3	1.4	96 / 98	1.4	0.034
5/4/2016	13.4	8.2	<0.1	12.4	7.7	19	90 / 76	2	0.038
4/6/2016	8.5	8.2	<0.1		14	12.8	81 / 84	2	0.046
3/2/2016	3.8	7.7	<0.1		5	5.98	94 / 92	1.9	0.046
2/3/2016	4.3	7.8	<0.1		5.7	5.8	95 / 94	2.5	0.055

1/6/2016	2.8	8	<0.1		5.3	1.3	94 / 98	1.84	0.049
12/2/2015	5.6	7.7	<0.1		7.5	4.1	93 / 96	1.8	0.051
11/12/2015	10.8	7.6	<0.1		11	5.6	85 / 92	1.73	0.044
10/7/2015	15.1	7.6	<0.1		5.8	4.9	93 / 94	1.68	0.049
9/2/2015	22.6	7.6	<0.1		3.3	1.8	96 / 98	1.62	0.048
8/6/2015	23	7.7	<0.1		2.8	2.4	96 / 97	1.6	0.05
7/1/2015	21.5	7.5	<0.1		5.5	3.9	95 / 96	1.55	0.063
5/13/2015	17.8	7.4	<0.1		14	5.3	88 / 95	1.54	0.052
4/1/2015	3.3	7.8	<0.1		5.8	6.2	93 / 92	1.56	0.05
3/4/2015	3.5	7.7	<0.1		5.6	6.7	94 / 92	1.65	0.053
2/4/2015	3.5	7.5	<0.1		4.8	6.9	94 / 91	1.66	0.047
1/7/2015	2.8	8	<0.1		3.9	4.2	95 / 94	1.67	0.042
12/4/2014	4.3	7.7	<0.1		3.2	1.4	96 / 98	1.73	0.047
11/5/2014	10.9	7	<0.1		2.5	1.3	96 / 98	1.8	0.043

Date * (Day of monthy effuluent sample sent to endyne for testing)
Phos * (Phosphours totals are calculated on a 12 month rolling avreage)

Two year average flow from 5/2/2019 thru 5/3/2017	0.054
Yearly average flow from 5/2/2019 thru 5/2/2018	0.059
Yearly average flow from 5/2/2018 thru 5/3/2017	0.053

Appendix M

Detailed Cost Estimates - Alternatives

OPINION OF PROBABLE PROJECT COST - AERATION BLOWERS ALTERNATIVE 1B - SEQUENCING BATCH REACTORS						
ITEM	**QTY**	**UNIT**	**MATERIAL**	**LABOR**	**UNIT COST**	**TOTAL COST**
Mobilization	1	LS		$ 10,000	$ 10,000	$ 10,000
10 Ton Crane Rental	1	LS	$ 10,000		$ 10,000	$ 10,000
WWTP Removals						
Demolition Crew	5	Days		$ 2,000	$ 2,000	$ 10,000
Demolition Equipment	1	WK	$ 5,000		$ 5,000	$ 5,000
Demolition Material/Liner Disposal	6	Ton	$ 1,000	$ 1,500	$ 2,500	$ 15,000
Lagoon Sludge Transfer (to Reed Beds)	1	LS		$ 30,000	$ 30,000	$ 30,000
Temporary Pumping (SBR Start-Up)	12	WK	$ 2,500	$ 1,000	$ 3,500	$ 42,000
Flow Equalization System						
Concrete Tank (Two (2) -40,000 gal compartments)	145	CY	$ 300	$ 700	$ 1,000	$ 145,000
Aeration Blowers (3 Total)	1	LS	$ 50,000	$ 10,000	$ 60,000	$ 60,000
Air Piping and Diffusers	1	LS	$ 20,000	$ 10,000	$ 30,000	$ 30,000
Two (2) 200 gpm pumps, level sensor and control panel	1	LS	$ 30,000	$ 15,000	$ 45,000	$ 45,000
6' Precast Wetwell	1	LS	$ 15,000	$ 10,000	$ 25,000	$ 25,000
Valve Vault	1	LS	$ 14,000	$ 7,000	$ 21,000	$ 21,000
Excavation & Backfill	1	LS	$ 2,000	$ 3,000	$ 5,000	$ 5,000
SBR						
Excavation	675	CY		$ 100	$ 100	$ 67,500
Concrete Tank (Two (2) 50,000 gal SBR compartments)	160	CY	$ 300	$ 700	$ 1,000	$ 160,000
SBR Equipment, Instrumentation and Controls	1	LS	$ 235,000	$ 100,000	$ 335,000	$ 335,000
Phosphorus Removal						
Skid Mounted Chemical Dosing System	1	LS	$ 15,000	$ 5,000	$ 20,000	$ 20,000
Chemical Injection Line	1	LS	$ 1,000	$ 4,000	$ 5,000	$ 5,000
Control Building	500	SF	$ 200	$ 100	$ 300	$ 150,000
Effluent Flow Metering						
Ultrasonic Sensor, Metering MH and Recorder	1	LS	$ 20,000	$ 8,000	$ 28,000	$ 28,000
Aerobic Digesters						
Concrete Tank (Two (2) -20,000 gal compartments)	100	CY	$ 300	$ 700	$ 1,000	$ 100,000
Aeration Blowers (shared with Flow EQ)						
Air Piping and Diffusers	1	LS	$ 20,000	$ 10,000	$ 30,000	$ 30,000
Supernatant Return Equipment	1	LS	$ 25,000	$ 10,000	$ 35,000	$ 35,000
Digested Sludge Pumps and Controls	1	LS	$ 30,000	$ 15,000	$ 45,000	$ 45,000
Site Work						
Site & Process Piping	1	LS	$ 175,000	$ 100,000	$ 275,000	$ 275,000
Excavation and Bedding	1	LS	$ 50,000	$ 30,000	$ 80,000	$ 80,000
Manholes & Covers	3	EA	$ 6,000	$ 1,500	$ 7,500	$ 22,500
Grading	1	LS		$ 5,000	$ 5,000	$ 5,000
Topsoil and Seed	1200	SF	$ 1.25	$ 1.00	$ 2.25	$ 2,700
8' High Chain Link Fence	170	LF	$ 30	$ 20	$ 50	$ 8,500
Pavement						
- 12 inch Subbase	400	CY	$ 25	$ 40	$ 65	$ 26,000
- Asphalt - Binder	210	TON	$ 90	$ 30	$ 120	$ 25,200
- Asphalt - Top Coarse	140	TON	$ 90	$ 30	$ 120	$ 16,800
- Geotextile Filter Fabric	1160	SY	$ 3.00	$ 1.00	$ 4.00	$ 4,640
Sediment & Erosion Control Measures w/Maintenance	1	LS	$ 1,500	$ 3,000	$ 4,500	$ 4,500

OPINION OF PROBABLE PROJECT COST - AERATION BLOWERS ALTERNATIVE 1B - SEQUENCING BATCH REACTORS						
ITEM	**QTY**	**UNIT**	**MATERIAL**	**LABOR**	**UNIT COST**	**TOTAL COST**
Electric Work	1	LF	$ 350,000	$ 200,000	$ 550,000	$ 550,000
					SUBTOTAL	**$ 2,449,340**
					Escalation to Construction Start (6%)	$ 147,000
					General Conditions (10%)	$ 244,900
					Contractor Overhead & Profit (15%)	$ 367,400
					Design Contingency / Field Order Allowance (20%)	$ 489,900
					TOTAL CONSTRUCTION COST	**$ 3,698,540**
					Legal, Admin, Engineering (20%)	$ 739,700
					TOTAL PROJECT COST (ALTERNATIVE 1B)	**$ 4,438,240**
					SAY	**$ 4,440,000**

OPINION OF PROBABLE PROJECT COST - AERATION BLOWERS ALTERNATIVE 1C - MOVING BED BIOFILM REACTORS (MBBR)						
ITEM	**QTY**	**UNIT**	**MATERIAL**	**LABOR**	**UNIT COST**	**TOTAL COST**
Mobilization	1	LS		$ 10,000	$ 10,000	$ 10,000
10 Ton Crane Rental	1	LS	$ 10,000		$ 10,000	$ 10,000
WWTP Removals						
Demolition Crew	5	Days		$ 2,000	$ 2,000	$ 10,000
Demolition Equipment	1	WK	$ 5,000		$ 5,000	$ 5,000
Demolition Material/Liner Disposal	6	Ton	$ 1,000	$ 1,500	$ 2,500	$ 15,000
Lagoon Sludge Transfer (to Reed Beds)	1	LS		$ 30,000	$ 30,000	$ 30,000
Temporary Pumping (MBBR Start-Up)	12	WK	$ 2,500	$ 1,000	$ 3,500	$ 42,000
Flow Equalization System						
Concrete Tank (Two (2) -40,000 gal compartments)	145	CY	$ 300	$ 700	$ 1,000	$ 145,000
Air Blowers (3) and Controls (in control bldg.)	1	LS	$ 50,000	$ 10,000	$ 60,000	$ 60,000
Air Piping and Diffusers	1	LS	$ 20,000	$ 10,000	$ 30,000	$ 30,000
Two (2) 200 gpm pumps, level sensor and control panel	1	LS	$ 30,000	$ 15,000	$ 45,000	$ 45,000
6' Precast Wetwell	1	LS	$ 15,000	$ 10,000	$ 25,000	$ 25,000
Valve Vault	1	LS	$ 14,000	$ 7,000	$ 21,000	$ 21,000
Excavation & Backfill	1	LS	$ 2,000	$ 3,000	$ 5,000	$ 5,000
MBBR						
Excavation	575	CY		$ 100	$ 100	$ 57,500
Concrete Tank (Four (4) 10,000 gal MBBR compartments)	125	CY	$ 300	$ 700	$ 1,000	$ 125,000
MBBR Equipment, Instrumentation and Controls	1	LS	$ 450,000	$ 100,000	$ 550,000	$ 550,000
Secondary Clarifiers						
Concrete Tanks	110	CY	$ 300	$ 700	$ 1,000	$ 110,000
Clarifier Equipment	2	EA	$ 85,000	$ 50,000	$ 135,000	$ 270,000
Phosphorus Removal						
Skid Mounted Chemical Dosing System	1	LS	$ 15,000	$ 5,000	$ 20,000	$ 20,000
Chemical Injection Line	1	LS	$ 1,000	$ 4,000	$ 5,000	$ 5,000
Precast mixing/dosing and settling tank	1	LS	$ 20,000	$ 10,000	$ 30,000	$ 30,000
Mixing and Sludge Pump Equipment	1	LS	$ 15,000	$ 15,000	$ 30,000	$ 30,000
Earthwork - Backfill/Grading	1	LS	$ 7,500	$ 2,500	$ 10,000	$ 10,000
Control Building	500	SF	$ 200	$ 100	$ 300	$ 150,000
Effluent Flow Metering						
Ultrasonic Sensor, Metering MH and Recorder	1	LS	$ 20,000	$ 8,000	$ 28,000	$ 28,000
Aerobic Digesters						
Concrete Tank (Two (2) -20,000 gal compartments)	100	CY	$ 300	$ 700	$ 1,000	$ 100,000
Air Blowers (shared with Flow EQ)						
Air Piping and Diffusers	1	LS	$ 20,000	$ 10,000	$ 30,000	$ 30,000
Supernatant Return Equipment	1	LS	$ 25,000	$ 10,000	$ 35,000	$ 35,000
Digested Sludge Pumps and Controls	1	LS	$ 30,000	$ 15,000	$ 45,000	$ 45,000

OPINION OF PROBABLE PROJECT COST - AERATION BLOWERS ALTERNATIVE 1C - MOVING BED BIOFILM REACTORS (MBBR)						
ITEM	**QTY**	**UNIT**	**MATERIAL**	**LABOR**	**UNIT COST**	**TOTAL COST**
Site Work						
Site & Process Piping	1	LS	$ 250,000	$ 150,000	$ 400,000	$ 400,000
Excavation and Bedding	1	LS	$ 50,000	$ 30,000	$ 80,000	$ 80,000
Manholes & Covers	3	EA	$ 6,000	$ 1,500	$ 7,500	$ 22,500
Grading	1	LS		$ 5,000	$ 5,000	$ 5,000
Topsoil and Seed	1200	SF	$ 1.25	$ 1.00	$ 2.25	$ 2,700
8'Chain Link	170	LF	$ 30	$ 20	$ 50	$ 8,500
Pavement						
- 12 inch Subbase	400	CY	$ 25	$ 40	$ 65	$ 26,000
- Asphalt - Binder	210	TON	$ 90	$ 30	$ 120	$ 25,200
- Asphalt - Top Coarse	140	TON	$ 90	$ 30	$ 120	$ 16,800
- Geotextile Filter Fabric	1160	SY	$ 3.00	$ 1.00	$ 4.0	$ 4,640
Sediment & Erosion Control Measures w/Maintenance	1	LS	$ 1,500	$ 3,000	$ 4,500	$ 4,500
Electric Work	1	LF	$ 400,000	$ 250,000	$ 650,000	$ 650,000
					SUBTOTAL	**$ 3,294,340**
					Escalation to Construction Start (6%)	$ 197,700
					General Conditions (10%)	$ 329,400
					Contractor Overhead & Profit (15%)	$ 494,200
					Design Contingency / Field Order Allowance (20%)	$ 658,900
					TOTAL CONSTRUCTION COST	**$ 4,974,540**
					Legal, Admin, Engineering (20%)	$ 994,900
					TOTAL PROJECT COST (ALTERNATIVE 1C)	**$ 5,969,440**
					SAY	**$ 5,970,000**

OPINION OF PROBABLE PROJECT COST - AERATION BLOWERS
ALTERNATIVE 1D - LAGOON UPGRADES

ITEM	QTY	UNIT	MATERIAL	LABOR	UNIT COST	TOTAL COST
Mobilization	1	LS		$ 10,000	$ 10,000	$ 10,000
10 Ton Crane Rental	1	LS	$ 10,000		$ 10,000	$ 10,000
WWTP Removals						
Demolition Crew	5	Days		$ 2,000	$ 2,000	$ 10,000
Demolition Equipment	1	WK	$ 5,000		$ 5,000	$ 5,000
Demolition Material/Liner Disposal	6	Ton	$ 1,000	$ 1,500	$ 2,500	$ 15,000
Lagoon Sludge Transfer (to Reed Beds)	1	LS		$ 30,000	$ 30,000	$ 30,000
Temporary Lagoon Modifications	1	LS	$ 5,000	$ 15,000	$ 20,000	$ 20,000
Lagoon Improvements						
Excavation / Grading	500	CY		$ 100	$ 100	$ 50,000
Sand/Reshape Lagoon Bttm&Slopes/Protection Layer	1200	CY	$ 30	$ 40	$ 70	$ 84,000
Lagoon Liner & Baffles	1	LS	$ 150,000	$ 100,000	$ 250,000	$ 250,000
Equipment (Blowers, Controls, floating Cover, and bio curtain)	1	LS	$ 265,000	$ 150,000	$ 415,000	$ 415,000
Diffused Air System	1	LS	$ 40,000	$ 40,000	$ 80,000	$ 80,000
Phosphorus Removal						
Skid Mounted Chemical Dosing System	1	LS	$ 15,000	$ 5,000	$ 20,000	$ 20,000
Chemical Injection Line	1	LS	$ 1,000	$ 4,000	$ 5,000	$ 5,000
8 ft wide x 12 ft long fiberglass building, complete	1	LS	$ 35,000	$ 10,000	$ 45,000	$ 45,000
Effluent Flow Metering						
Ultrasonic Sensor, Metering MH and Recorder	1	LS	$ 20,000	$ 8,000	$ 28,000	$ 28,000
Site Work						
Site & Process Piping	1	LS	$ 200,000	$ 125,000	$ 325,000	$ 325,000
Excavation and Bedding	1	LS	$ 50,000	$ 30,000	$ 80,000	$ 80,000
Grading	1	LS	$ 10,000	$ 15,000	$ 25,000	$ 25,000
Topsoil and Seed	700	SF	$ 1.25	$ 1.00	$ 2.25	$ 1,575
Pavement Overlay						
- Asphalt Surface Treatment	1150	SY	$ 1.50	$ 2.00	$ 3.50	$ 4,025
- Asphalt - Top Coarse	140	TON	$ 90	$ 30	$ 120	$ 16,800
Sediment & Erosion Control Measures w/Maintenance	1	LS	$ 1,500	$ 3,000	$ 4,500	$ 4,500
Electric Work	1	LF	$ 250,000	$ 185,000	$ 435,000	$ 435,000
					SUBTOTAL	**$ 1,968,900**
					Escalation to Construction Start (6%)	$ 118,100
					General Conditions (10%)	$ 196,900
					Contractor Overhead & Profit (15%)	$ 295,300
					Design Contingency / Field Order Allowance (20%)	$ 393,800
					TOTAL CONSTRUCTION COST	**$ 2,973,000**
					Legal, Admin, Engineering (20%)	$ 594,600
					TOTAL PROJECT COST (ALTERNATIVE 1D)	**$ 3,567,600**
					SAY	**$ 3,570,000**

OPINION OF PROBABLE PROJECT COST - AERATION BLOWERS
ALTERNATIVE 2B- CHLORINATION

ITEM	QTY	UNIT	MATERIAL	LABOR	UNIT COST	TOTAL COST
Mobilization	1	LS		$ 10,000	$ 10,000	$ 10,000
Disinfection						
8 ft wide x 14 ft long fiberglass building, complete	1	LS	$ 40,000	$ 15,000	$ 55,000	$ 55,000
6500 gal baffled chlorine contact tank	1	LS	$ 15,000	$ 25,000	$ 40,000	$ 40,000
Skid Mounted Chemical Dosing System	1	LS	$ 15,000	$ 5,000	$ 20,000	$ 20,000
Controls (flow paced with chlorine feedback)	1	LS	$ 5,000	$ 2,500	$ 7,500	$ 7,500
Chlorine Analyzer	1	LS	$ 4,000	$ 2,000	$ 6,000	$ 6,000
Chemical Injection Line	1	LS	$ 1,000	$ 4,000	$ 5,000	$ 5,000
Earthwork - Backfill/Grading	1	LS	$ 2,500	$ 10,000	$ 12,500	$ 12,500
Site Work						
Site & Process Piping	1	LS	$ 40,000	$ 25,000	$ 65,000	$ 65,000
Excavation and Bedding	1	LS	$ 10,000	$ 15,000	$ 25,000	$ 25,000
Fill & Grading	1	LS	$ 20,000	$ 10,000	$ 30,000	$ 30,000
Topsoil and Seed	750	SF	$ 1.25	$ 1.00	$ 2.25	$ 1,688
Pavement						
- 12-inch subbase	110	CY	$ 25	$ 40	$ 65	$ 7,150
- Asphalt - Binder	60	TON	$ 90	$ 30	$ 120	$ 7,200
- Asphalt - Top Coarse	40	TON	$ 90	$ 30	$ 120	$ 4,800
- Geotextile Filter Fabric	310	SY	$ 3.00	$ 1.00	$ 4.00	$ 1,240
Sediment & Erosion Control Measures w/Maintenance	1	LS	$ 1,500	$ 3,000.00	$ 4,500	$ 4,500
Electric Work	1	LF	$ 15,000	$ 25,000	$ 40,000	$ 40,000
					SUBTOTAL	**$ 342,578**
					Escalation to Construction Start (6%)	$ 20,600
					General Conditions (10%)	$ 34,300
					Contractor Overhead & Profit (15%)	$ 51,400
					Design Contingency / Field Order Allowance (20%)	$ 68,500
					TOTAL CONSTRUCTION COST	**$ 517,378**
					Legal, Admin, Engineering (20%)	$ 103,500
					TOTAL PROJECT COST (ALTERNATIVE 2B)	**$ 620,878**
					SAY	**$ 630,000**

OPINION OF PROBABLE PROJECT COST - AERATION BLOWERS ALTERNATIVE 2C- ULTRAVIOLET (UV)						
ITEM	**QTY**	**UNIT**	**MATERIAL**	**LABOR**	**UNIT COST**	**TOTAL COST**
Mobilization	1	LS		$ 10,000	$ 10,000	$ 10,000
Disinfection						
8 ft wide x 14 ft long fiberglass building, complete	1	LS	$ 40,000	$ 15,000	$ 55,000	$ 55,000
Concrete Channels and Building Foundation	50	CY	$ 300	$ 700	$ 1,000	$ 50,000
UV Disinfection Equipment & Controls	1	LS	$ 60,000	$ 25,000	$ 85,000	$ 85,000
Fiberglass Grating	1	LS	$ 2,000	$ 2,500	$ 4,500	$ 4,500
Earthwork - Backfill/Grading	1	LS	$ 2,500	$ 10,000	$ 12,500	$ 12,500
Site Work						
Site & Process Piping	1	LS	$ 40,000	$ 25,000	$ 65,000	$ 65,000
Excavation and Bedding	1	LS	$ 10,000	$ 15,000	$ 25,000	$ 25,000
Fill and Grading	1	LS	$ 10,000	$ 5,000	$ 15,000	$ 15,000
Topsoil and Seed	750	SF	$ 1.25	$ 1.00	$ 2.25	$ 1,688
Pavement						
- 12-inch subbase	110	CY	$ 25	$ 40	$ 65	$ 7,150
- Asphalt - Binder	60	TON	$ 90	$ 30	$ 120	$ 7,200
- Asphalt - Top Coarse	40	TON	$ 90	$ 30	$ 120	$ 4,800
- Geotextile Filter Fabric	310	SY	$ 3.00	$ 1.00	$ 4.00	$ 1,240
Sediment & Erosion Control Measures w/Maintenance	1	LS	$ 1,500	$ 3,000	$ 4,500	$ 4,500
Electric Work	1	LF	$ 15,000	$ 25,000	$ 40,000	$ 40,000
					SUBTOTAL	**$ 388,578**
					Escalation to Construction Start (6%)	$ 23,300
					General Conditions (10%)	$ 38,900
					Contractor Overhead & Profit (15%)	$ 58,300
					Design Contingency / Field Order Allowance (20%)	$ 77,700
					TOTAL CONSTRUCTION COST	**$ 586,778**
					Legal, Admin, Engineering (20%)	$ 117,400
					TOTAL PROJECT COST (ALTERNATIVE 2C)	**$ 704,178**
					SAY	**$ 710,000**

Appendix N

Life Cycle Costs - Alternatives

ALTERNATIVE 1B
LIFE CYCLE COST

Initial Expenses - Construction	Qty	Unit	Unit Cost	Total Cost	Present Value
Alternative 1B Project Cost	1	LS	$4,440,000	$4,440,000	**$4,440,000**

Future Maintenance Expenses (Non-Annually Recurring Costs)

Flow Equalization	Current Base Cost	# of Years to Occurrence	Inflation Rate	Future Cost [1]	Interest Rate	Present Value [2]
Yr 5 - Level Instrumentation Replacement	$3,500	5	3.0%	$4,057	3.5%	$3,416
Yr 10 - Level Instrumentation Replacement	$3,500	10	3.0%	$4,704	3.5%	$3,335
Yr 10 - Flow EQ Pump Replacement	$30,000	10	3.0%	$40,317	3.5%	$28,582
Yr 15 - Level Instrumentation Replacement	$3,500	15	3.0%	$5,453	3.5%	$3,255
Yr 20 - Level Instrumentation Replacement	$3,500	20	3.0%	$6,321	3.5%	$3,177
Yr 20 - Flow EQ Pump Replacement	$30,000	20	3.0%	$54,183	3.5%	$27,231
Yr 25 - Level Instrumentation Replacement	$3,500	25	3.0%	$7,328	3.5%	$3,101
Sequencing Batch Reactors						
Yr 5 - Instrumentation Replacement	$15,000	5	3.0%	$17,389	3.5%	$14,641
Yr 10 - Instrumentation Replacement	$15,000	10	3.0%	$20,159	3.5%	$14,291
Yr 10 - Jet Aspiration Pumps Replacement	$40,000	10	3.0%	$53,757	3.5%	$38,109
Yr 10 - Control Valve Actuators Replacement	$12,000	10	3.0%	$16,127	3.5%	$11,433
Yr 15 - Instrumentation Replacement	$15,000	15	3.0%	$23,370	3.5%	$13,949
Yr 15 - Controls Rehab	$25,000	15	3.0%	$38,949	3.5%	$23,248
Yr 20 - Instrumentation Replacement	$15,000	20	3.0%	$27,092	3.5%	$13,615
Yr 20 - Jet Aspiration Pumps Replacement	$40,000	20	3.0%	$72,244	3.5%	$36,308
Yr 20 - Control Valve Actuators Replacement	$12,000	20	3.0%	$21,673	3.5%	$10,892
Yr 25 - Instrumentation Replacement	$15,000	25	3.0%	$31,407	3.5%	$13,290
Aerobic Digesters						
Yr 5 - Level Instrumentation Replacement	$3,500	5	3.0%	$4,057	3.5%	$3,416
Yr 10 - Level Instrumentation Replacement	$3,500	10	3.0%	$4,704	3.5%	$3,335
Yr 10 - Supernatant Pump Replacement	$10,000	10	3.0%	$13,439	3.5%	$9,527
Yr 10 - Digested Sludge Pumps Replacement	$30,000	10	3.0%	$40,317	3.5%	$28,582
Yr 15 - Level Instrumentation Replacement	$3,500	15	3.0%	$5,453	3.5%	$3,255
Yr 20 - Level Instrumentation Replacement	$3,500	20	3.0%	$6,321	3.5%	$3,177
Yr 20 - Supernatant Pump Replacement	$10,000	20	3.0%	$18,061	3.5%	$9,077
Yr 20 - Digested Sludge Pumps Replacement	$30,000	20	3.0%	$54,183	3.5%	$27,231
Yr 25 - Level Instrumentation Replacement	$3,500	25	3.0%	$7,328	3.5%	$3,101
Phosphrous Removal						
Yr 7 - Chemical Feed Pump Replacement	$2,500	7	3.0%	$3,075	3.5%	$2,417
Yr 14 - Chemical Feed Pump Replacement	$2,500	14	3.0%	$3,781	3.5%	$2,336
Yr 21 - Chemical Feed Pump Replacement	$2,500	21	3.0%	$4,651	3.5%	$2,258
Yr 28 - Chemical Feed Pump Replacement	$2,500	28	3.0%	$5,720	3.5%	$2,183
Aeration Blowers (Equalization / Digestion)						
Yr 10 - Blower Rehab	$20,000	10	3.0%	$26,878	3.5%	$19,055
Yr 20 - Blower Rreplacement	$60,000	20	3.0%	$108,367	3.5%	$54,461
Subtotal - Future Maintenance Costs				$750,867		**$435,282**
					SAY	**$440,000**

Future Operational Costs [3]

	Qty	Unit	Current Unit Cost	Current Base Cost	UPV[4]	Present Value
Aeration Blowers (Equalization/Digestion	97,985	kWh / Yr	$0.14	$13,718	21.00	$288,069
Flow Equalization Pump	3,674	kWh / Yr	$0.14	$514	21.00	$10,803
Jet Aspiration Pumps	38,105	kWh / Yr	$0.14	$5,335	21.00	$112,027
WAS Pumps	114	kWh / Yr	$0.14	$16	21.00	$336
Digested Sludge Pumps	114	kWh / Yr	$0.14	$16	21.00	$336
PAC Chemical Usage	1,278	gal/yr	$10.00	$12,775	21.00	$268,269
					SAY	**$680,000**

Total Costs	Present Value
Initial Expense	$4,440,000
Future Maintenance Costs	$440,000
Future Operational Costs	$680,000
Total Life Cycle Cost	**$5,560,000**

Notes

[1] Future Cost = Current Base Cost x $(1+i)^n$ Where; i = inflation rate, n = number of years to occurrence

[2] Present Value = Future Cost x $[1 / (1+d)^n]$ Where; d = interest rate, n = number of years to occurrence

[3] Annual energy consumption based on nominal horsepower of equipment and operation as follows:
- One (1) 7.5 HP Flow Equalization Blower (24/7) and one (1) 7.5 HP Digester Blower (24/7)
- One (1) 3 HP Flow Equalization Pump, 4.5 hrs per day
- Two (2) 10 HP Jet Aspiration Pumps, each operating 7 hrs per day
- Two (2) 2.1 HP WAS Pumps, each operating 0.1 hrs per day
- One (1) 2.1 HP Digested Sludge Pump, 0.2 hrs per day

Polyaluminum chloride (PAC) chemical usage based on 3.5 gpd at average day flows and loads

[4] Uniform Present Value (UPV) for determining present value of annual energy costs over a 30 year period derived as follows:

$$UPV = \left(\frac{1+e}{d-e}\right)\left[1-\left(\frac{1+e}{1+d}\right)^{N}\right]$$

Where;
e = escalation rate (@ 1%)
d = interest rate (@ 3.5%)
N = number of timer periods for annual occurrence (30 years)

ALTERNATIVE 1C
LIFE CYCLE COST

Initial Expenses - Construction	Qty	Unit	Unit Cost	Total Cost	Present Value
Alternative 1C Project Cost	1	LS	$5,970,000	$5,970,000	**$5,970,000**

Future Maintenance Expenses (Non-Annually Recurring Costs)

	Current Base Cost	# of Years to Occurrence	Inflation Rate	Future Cost [1]	Interest Rate	Present Value [2]
Flow Equalization						
Yr 5 - Level Instrumentation Replacement	$3,500	5	3.0%	$4,057	3.5%	$3,416
Yr 10 - Level Instrumentation Replacement	$3,500	10	3.0%	$4,704	3.5%	$3,335
Yr 10 - Flow EQ Pump Replacement	$30,000	10	3.0%	$40,317	3.5%	$28,582
Yr 15 - Level Instrumentation Replacement	$3,500	15	3.0%	$5,453	3.5%	$3,255
Yr 20 - Level Instrumentation Replacement	$3,500	20	3.0%	$6,321	3.5%	$3,177
Yr 20 - Flow EQ Pump Replacement	$30,000	20	3.0%	$54,183	3.5%	$27,231
Yr 25 - Level Instrumentation Replacement	$3,500	25	3.0%	$7,328	3.5%	$3,101
Moving Bed Biofilm Reactors						
Yr 5 - Instrumentation Replacement	$5,000	5	3.0%	$5,796	3.5%	$4,880
Yr 10 - Instrumentation Replacement	$5,000	10	3.0%	$6,720	3.5%	$4,764
Yr 10 - Aeration Blowers Rehab	$25,000	10	3.0%	$33,598	3.5%	$23,818
Yr 15 - Instrumentation Replacement	$5,000	15	3.0%	$7,790	3.5%	$4,650
Yr 15 - Controls Rehab	$25,000	15	3.0%	$38,949	3.5%	$23,248
Yr 20 - Instrumentation Replacement	$5,000	20	3.0%	$9,031	3.5%	$4,538
Yr 20 - Aeration Blowers Replacement	$75,000	20	3.0%	$135,458	3.5%	$68,077
Yr 20 - MBBR Media Replacement	$50,000	20	3.0%	$90,306	3.5%	$45,384
Yr 25 - Instrumentation Replacement	$5,000	25	3.0%	$10,469	3.5%	$4,430
Secondary Clarifiers						
Yr 10 - Clarifier Drives Replacement	$10,000	10	3.0%	$13,439	3.5%	$9,527
Yr 20 - Clarifier Equipment Replacement	$400,000	20	3.0%	$722,444	3.5%	$363,076
Aerobic Digesters						
Yr 5 - Level Instrumentation Replacement	$3,500	5	3.0%	$4,057	3.5%	$3,416
Yr 10 - Level Instrumentation Replacement	$3,500	10	3.0%	$4,704	3.5%	$3,335
Yr 10 - Supernatant Pump Replacement	$10,000	10	3.0%	$13,439	3.5%	$9,527
Yr 10 - Digested Sludge Pumps Replacement	$30,000	10	3.0%	$40,317	3.5%	$28,582
Yr 15 - Level Instrumentation Replacement	$3,500	15	3.0%	$5,453	3.5%	$3,255
Yr 20 - Level Instrumentation Replacement	$3,500	20	3.0%	$6,321	3.5%	$3,177
Yr 20 - Supernatant Pump Replacement	$10,000	20	3.0%	$18,061	3.5%	$9,077
Yr 20 - Digested Sludge Pumps Replacement	$30,000	20	3.0%	$54,183	3.5%	$27,231
Yr 25 - Level Instrumentation Replacement	$3,500	25	3.0%	$7,328	3.5%	$3,101
Phosphrous Removal						
Yr 7 - Chemical Feed Pump Replacement	$2,500	7	3.0%	$3,075	3.5%	$2,417
Yr 10 - Flash Mixer Replacement	$5,000	10	3.0%	$6,720	3.5%	$4,764
Yr 10 - Chemical Sludge Wasting Pump	$7,500	10	3.0%	$10,079	3.5%	$7,145
Yr 14 - Chemical Feed Pump Replacement	$2,500	14	3.0%	$3,781	3.5%	$2,336
Yr 20 - Flash Mixer Replacement	$5,000	20	3.0%	$9,031	3.5%	$4,538
Yr 20 - Chemical Sludge Wasting Pump	$7,500	20	3.0%	$13,546	3.5%	$6,808
Yr 21 - Chemical Feed Pump Replacement	$2,500	21	3.0%	$4,651	3.5%	$2,258
Yr 28 - Chemical Feed Pump Replacement	$2,500	28	3.0%	$5,720	3.5%	$2,183
Aeration Blowers (Equalization / Digestion)						
Yr 10 - Blower Rehab	$20,000	10	3.0%	$26,878	3.5%	$19,055
Yr 20 - Blower Rreplacement	$60,000	20	3.0%	$108,367	3.5%	$54,461
Subtotal - Future Maintenance Costs				$1,542,076		**$825,154**
					SAY	**$830,000**

Future Operational Costs [3]	Qty	Unit	Current Unit Cost	Current Base Cost	UPV[4]	Present Value
Aeration Blowers (Equalization/Digestion	97,985	kWh / Yr	$0.14	$13,718	21.00	$288,069
Flow Equalization Pump	3,674	kWh / Yr	$0.14	$514	21.00	$10,803
Aeration Blowers (MBBRs)	195,970	kWh / Yr	$0.14	$27,436	21.00	$576,139
RAS Pumps	39,194	kWh / Yr	$0.14	$5,487	21.00	$115,228
WAS Pumps	163	kWh / Yr	$0.14	$23	21.00	$480
Clarifier Drives	6,532	kWh / Yr	$0.14	$915	21.00	$19,205
Flash Mixer	6,532	kWh / Yr	$0.14	$915	21.00	$19,205
Chemical Sludge Wasting Pump	41	kWh / Yr	$0.14	$6	21.00	$120
Digested Sludge Pumps	171	kWh / Yr	$0.14	$24	21.00	$504
PAC Chemical Usage	1,278	gal/yr	$10.00	$12,775	21.00	$268,269
					SAY	**$1,300,000**

Total Costs	**Present Value**
Initial Expense	$5,970,000
Future Maintenance Costs	$830,000
Future Operational Costs	$1,300,000
Total Life Cycle Cost	**$8,100,000**

Notes

[1] Future Cost = Current Base Cost x $(1+i)^n$ Where; i = inflation rate, n = number of years to occurrence

[2] Present Value = Future Cost x $[1 / (1+d)^n]$ Where; d = interest rate, n = number of years to occurrence

[3] Annual energy consumption based on nominal horsepower of equipment and operation as follows:
- One (1) 7.5 HP Flow Equalization Blower (24/7) and one (1) 7.5 HP Digester Blower (24/7)
- One (1) 3 HP Flow Equalization Pump, 4.5 hrs per day
- Two (2) 15 HP MBBR Aeration Blowers (24/7)
- Two (2) 3 HP RAS Pumps (24/7)
- Two (2) 3 HP WAS Pumps, each operating 0.1 hrs per day
- Two (2) 0.5 HP Clarifier Drives (24/7)
- One (1) 1 HP Flash Mixer (24/7)
- One (1) 1.5 HP Chemical Sludge Wasting Pump (0.1 hrs per day)
- One (1) 2.1 HP Digested Sludge Pump, 0.3 hrs per day

Polyaluminum chloride (PAC) chemical usage based on 3.5 gpd at average day flows and loads

[4] Uniform Present Value (UPV) for determining present value of annual energy costs over a 30 year period derived as follows:

$$UPV = \left(\frac{1+e}{d-e}\right)\left[1-\left(\frac{1+e}{1+d}\right)^{N}\right]$$

Where;
e = escalation rate (@ 1%)
d = interest rate (@ 3.5%)
N = number of timer periods for annual occurrence (30 years)

ALTERNATIVE 1D
LIFE CYCLE COST

Initial Expenses - Construction	Qty	Unit	Unit Cost	Total Cost	Present Value
Alternative 1D Project Cost	1	LS	$3,570,000	$3,570,000	**$3,570,000**

Future Maintenance Expenses (Non-Annually Recurring Costs)

Lagoons	Current Base Cost	# of Years to Occurrence	Inflation Rate	Future Cost [1]	Interest Rate	Present Value [2]
Yr 10 - Aeration Blowers Rehab	$15,000	10	3.0%	$20,159	3.5%	$14,291
Yr 10 - Air Diffuser Replacement	$20,000	10	3.0%	$26,878	3.5%	$19,055
Yr 15 - Controls Rehab	$25,000	15	3.0%	$38,949	3.5%	$23,248
Yr 20 - Aeration Blower Replacement	$40,000	20	3.0%	$72,244	3.5%	$36,308
Yr 20 - Air Diffuser Replacement	$20,000	20	3.0%	$36,122	3.5%	$18,154
Yr 20 - Biocurtain Replacement	$50,000	20	3.0%	$90,306	3.5%	$45,384
Yr 20 - Floating (Algae) Cover Replacement	$65,000	20	3.0%	$117,397	3.5%	$59,000
Phosphrous Removal						
Yr 7 - Chemical Feed Pump Replacement	$2,500	7	3.0%	$3,075	3.5%	$2,417
Yr 14 - Chemical Feed Pump Replacement	$2,500	14	3.0%	$3,781	3.5%	$2,336
Yr 21 - Chemical Feed Pump Replacement	$2,500	21	3.0%	$4,651	3.5%	$2,258
Yr 28 - Chemical Feed Pump Replacement	$2,500	28	3.0%	$5,720	3.5%	$2,183
Subtotal - Future Maintenance Costs				$419,282		**$224,634**
					SAY	**$230,000**

Future Operational Costs [3]	Qty	Unit	Current Unit Cost	Current Base Cost	UPV[4]	Present Value
Aeration Blowers	65,323	kWh / Yr	$0.14	$9,145	21.00	$192,046
PAC Chemical Usage	1,278	gal/yr	$10.00	$12,775	21.00	$268,269
					SAY	**$470,000**

Total Costs	Present Value
Initial Expense	$3,570,000
Future Maintenance Costs	$230,000
Future Operational Costs	$470,000
Total Life Cycle Cost	**$4,270,000**

Notes

[1] Future Cost = Current Base Cost x $(1+i)^n$ Where; i = inflation rate, n = number of years to occurrence

[2] Present Value = Future Cost x $[1 / (1+d)^n]$ Where; d = interest rate, n = number of years to occurrence

[3] Annual energy consumption based on nominal horsepower of equipment and operation as follows:
- One (1) 10 HP Aeration Blower (24/7) during average day loading
Polyaluminum chloride (PAC) chemical usage based on 3.5 gpd at average day flows and loads

[4] Uniform Present Value (UPV) for determining present value of annual energy costs over a 30 year period derived as follows:

$$UPV = \left(\frac{1+e}{d-e}\right)\left[1-\left(\frac{1+e}{1+d}\right)^{N}\right]$$

Where;
e = escalation rate (@ 1%)
d = interest rate (@ 3.5%)
N = number of timer periods for annual occurrence (30 years)

ALTERNATIVE 2B
LIFE CYCLE COST

Initial Expenses - Construction	Qty	Unit	Unit Cost	Total Cost	Present Value
Alternative 2B Project Cost	1	LS	$630,000	$630,000	**$630,000**

Future Maintenance Expenses (Non-Annually Recurring Costs)

Chlorination Equipment	Current Base Cost	# of Years to Occurrence	Inflation Rate	Future Cost [1]	Interest Rate	Present Value [2]
Yr 7 - Chemical Feed Pump Replacement	$2,500	7	3.0%	$3,075	3.5%	$2,417
Yr 10 - Chlorine Analyzer Replacement	$4,000	10	3.0%	$5,376	3.5%	$3,811
Yr 14 - Chemical Feed Pump Replacement	$2,500	14	3.0%	$3,781	3.5%	$2,336
Yr 20 - Chlorine Analyzer Replacement	$4,000	20	3.0%	$7,224	3.5%	$3,631
Yr 21 - Chemical Feed Pump Replacement	$2,500	21	3.0%	$4,651	3.5%	$2,258
Yr 28 - Chemical Feed Pump Replacement	$2,500	28	3.0%	$5,720	3.5%	$2,183
Subtotal - Future Maintenance Costs				$29,827		**$16,636**
					SAY	**$20,000**

Future Operational Costs [3]	Qty	Unit	Current Unit Cost	Current Base Cost	UPV[4]	Present Value
Sodium Hypochlorite Chemical Usage	1,460	gal/yr	$9.75	$14,235	21.00	$298,928
					SAY	**$300,000**

Total Costs	Present Value
Initial Expense	$630,000
Future Maintenance Costs	$20,000
Future Operational Costs	$300,000
Total Life Cycle Cost	**$950,000**

Notes

[1] Future Cost = Current Base Cost x $(1+i)^n$ Where; i = inflation rate, n = number of years to occurrence

[2] Present Value = Future Cost x $[1 / (1+d)^n]$ Where; d = interest rate, n = number of years to occurrence

[3] Chemical usage based on 4 gpd at average day flows and design dose of 8 mg/L.

[4] Uniform Present Value (UPV) for determining present value of annual chemical costs over a 30 year period derived as follows:

$$UPV = \left(\frac{1+e}{d-e}\right)\left[1-\left(\frac{1+e}{1+d}\right)^{N}\right]$$

Where;
e = escalation rate (@ 1%)
d = interest rate (@ 3.5%)
N = number of timer periods for annual occurrence (30 years)

ALTERNATIVE 2C
LIFE CYCLE COST

Initial Expenses - Construction	Qty	Unit	Unit Cost	Total Cost	Present Value
Alternative 2C Project Cost	1	LS	$710,000	$710,000	**$710,000**

Future Maintenance Expenses (Non-Annually Recurring Costs) [3]

UV Equipment	Current Base Cost	# of Years to Occurrence	Inflation Rate	Future Cost [1]	Interest Rate	Present Value [2]
Yr 2.75 - Lamp Replacement	$1,320	2.75	3.0%	$1,432	3.5%	$1,303
Yr 5 - Intensity Sensors Replacement	$2,000	5.00	3.0%	$2,319	3.5%	$1,952
Yr 5.5 - Lamp Replacement	$1,320	5.50	3.0%	$1,553	3.5%	$1,285
Yr 8.25 - Lamp Replacement	$1,320	8.25	3.0%	$1,685	3.5%	$1,268
Yr 10 - Intensity Sensors Replacement	$2,000	10.00	3.0%	$2,688	3.5%	$1,905
Yr 10 - Air Compressor Replacement	$1,000	10.00	3.0%	$1,344	3.5%	$953
Yr 11 - Lamp Replacement	$1,320	11.00	3.0%	$1,827	3.5%	$1,252
Yr 13.75 - Lamp Replacement	$1,320	13.75	3.0%	$1,982	3.5%	$1,235
Yr 15 - Intensity Sensors Replacement	$2,000	15.00	3.0%	$3,116	3.5%	$1,860
Yr 15 - Controls Rehab	$10,000	15.00	3.0%	$15,580	3.5%	$9,299
Yr 16.5 - Lamp Replacement	$1,320	16.50	3.0%	$2,150	3.5%	$1,219
Yr 19.25 - Lamp Replacement	$1,320	19.25	3.0%	$2,332	3.5%	$1,203
Yr 20 - Intensity Sensors Replacement	$2,000	20.00	3.0%	$3,612	3.5%	$1,815
Yr 20 - Air Compressor Replacement	$1,000	20.00	3.0%	$1,806	3.5%	$908
Yr 22 - Lamp Replacement	$1,320	22.00	3.0%	$2,529	3.5%	$1,187
Yr 24.75 - Lamp Replacement	$1,320	24.75	3.0%	$2,743	3.5%	$1,171
Yr 25 - Intensity Sensors Replacement	$2,000	25.00	3.0%	$4,188	3.5%	$1,772
Yr 27.5 - Lamp Replacement	$1,320	27.50	3.0%	$2,976	3.5%	$1,155
Subtotal - Future Maintenance Costs				$55,860		**$32,741**
					SAY	**$40,000**

Future Operational Costs [4]	Qty	Unit	Current Unit Cost	Current Base Cost	UPV[5]	Present Value
UV Electrical Consumption	17,870	kWh / Yr	$0.14	$2,502	21.00	$52,538
					SAY	**$60,000**

Total Costs	Present Value
Initial Expense	$710,000
Future Maintenance Costs	$40,000
Future Operational Costs	$60,000
Total Life Cycle Cost	**$810,000**

Notes

[1] Future Cost = Current Base Cost x $(1+i)^n$ Where; i = inflation rate, n = number of years to occurrence

[2] Present Value = Future Cost x $[1 / (1+d)^n]$ Where; d = interest rate, n = number of years to occurrence

[3] Lamp replacement based on 12 lamps per bank, 2 banks total, each bank operates 4,380 hrs/yr and lamps are rated for 12,000 hours. Lamp Service Life = 12,000 hr / 4,380 hrs per year = 2.75 yrs per lamp

[4] Annual energy consumption based on 1 bank (12 lamps) operational 24/7 at 2.04 kW/hr.

[5] Uniform Present Value (UPV) for determining present value of annual energy costs over a 30 year period derived as follows:

$$UPV = \left(\frac{1+e}{d-e}\right)\left[1-\left(\frac{1+e}{1+d}\right)^{N}\right]$$

Where;
e = escalation rate (@ 1%)
d = interest rate (@ 3.5%)
N = number of timer periods for annual occurrence (30 years)

Appendix O

Alternative 1B Preliminary Site Plan

PHASING NOTES:

1. RE–ROUTE FORCEMAIN AND UNDERGROUND POWER ASSOCIATED WITH EXISTING INFLUENT PUMP STATION.
   - TEMPORARY PUMPING TO BE PROVIDED FROM INFLUENT PUMP STATION TO LAGOON NO. 1.

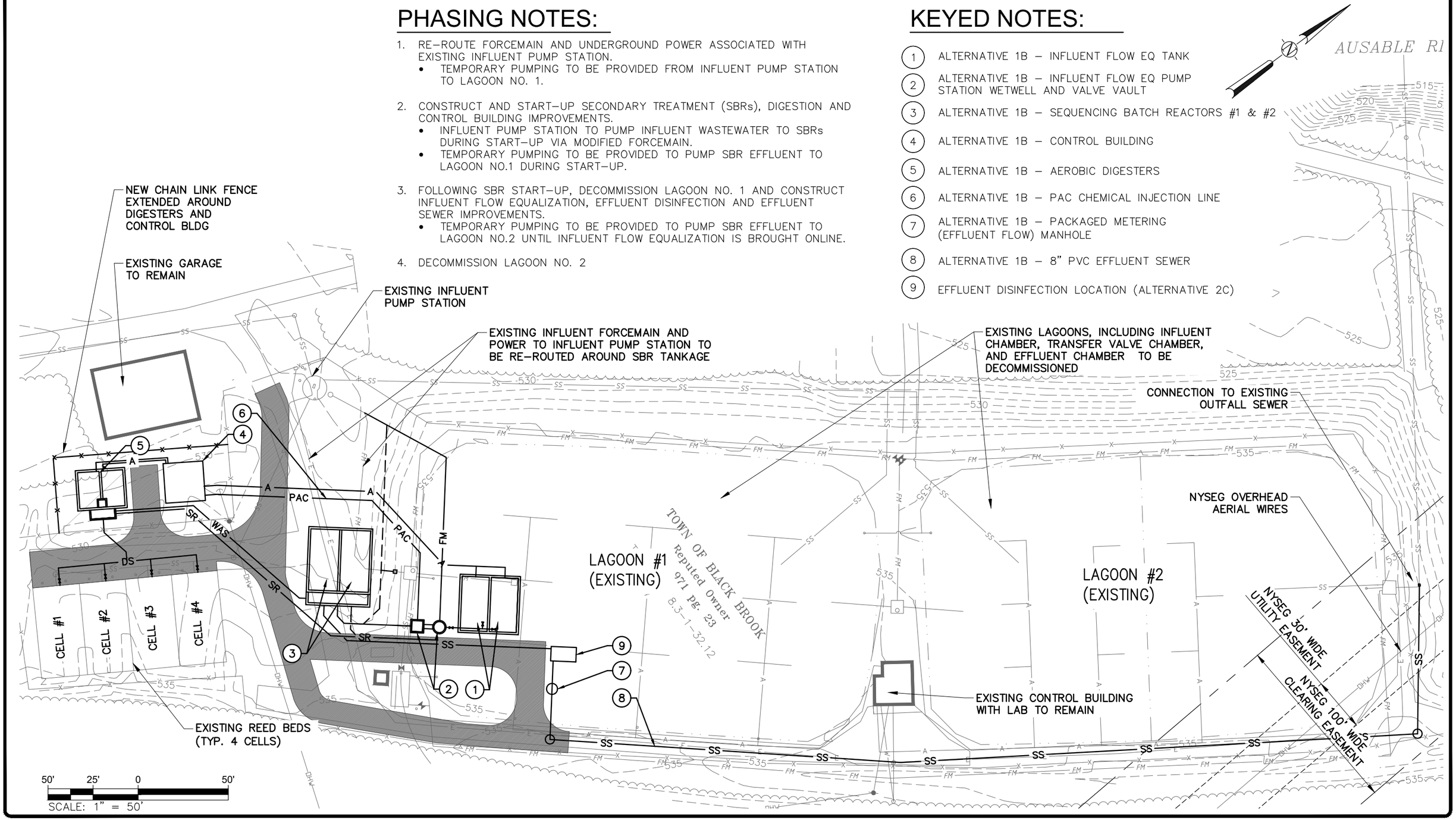
2. CONSTRUCT AND START–UP SECONDARY TREATMENT (SBRs), DIGESTION AND CONTROL BUILDING IMPROVEMENTS.
   - INFLUENT PUMP STATION TO PUMP INFLUENT WASTEWATER TO SBRs DURING START–UP VIA MODIFIED FORCEMAIN.
   - TEMPORARY PUMPING TO BE PROVIDED TO PUMP SBR EFFLUENT TO LAGOON NO.1 DURING START–UP.

3. FOLLOWING SBR START–UP, DECOMMISSION LAGOON NO. 1 AND CONSTRUCT INFLUENT FLOW EQUALIZATION, EFFLUENT DISINFECTION AND EFFLUENT SEWER IMPROVEMENTS.
   - TEMPORARY PUMPING TO BE PROVIDED TO PUMP SBR EFFLUENT TO LAGOON NO.2 UNTIL INFLUENT FLOW EQUALIZATION IS BROUGHT ONLINE.

4. DECOMMISSION LAGOON NO. 2

KEYED NOTES:

1. ALTERNATIVE 1B – INFLUENT FLOW EQ TANK
2. ALTERNATIVE 1B – INFLUENT FLOW EQ PUMP STATION WETWELL AND VALVE VAULT
3. ALTERNATIVE 1B – SEQUENCING BATCH REACTORS #1 & #2
4. ALTERNATIVE 1B – CONTROL BUILDING
5. ALTERNATIVE 1B – AEROBIC DIGESTERS
6. ALTERNATIVE 1B – PAC CHEMICAL INJECTION LINE
7. ALTERNATIVE 1B – PACKAGED METERING (EFFLUENT FLOW) MANHOLE
8. ALTERNATIVE 1B – 8" PVC EFFLUENT SEWER
9. EFFLUENT DISINFECTION LOCATION (ALTERNATIVE 2C)



SUBMITTAL / REVISIONS

No.	DATE	DESCRIPTION	BY	REVIEWED BY:	DATE

PROJ. MANAGER:	CLD
CHIEF DESIGNER:	MJD
DESIGNED BY:	EH
DRAWN BY:	AS
CHECKED BY:	CLD

SEAL

Engineering and Land Surveying, P.C.
1533 Crescent Road - Clifton Park, NY 12065

TOWN OF JAY
ENGINEERING REPORT

AU SABLE FORKS WWTP
PRELIMINARY SITE PLAN
ALTERNATIVE 1B - SBRs

SCALE: AS SHOWN
CONTRACT No.:
MJ PROJ. No.: 1075.04
DATE: FEBRUARY 2020

O

File Name: F:\MJ\1075\1075.04 Town of Jay\ALT 1B - Prelim Site Plan.dwg (Layout: O)
Date: Mon, Jan 20, 2020 - 12:14 PM (Name: mdrisdane)

Appendix P

Alternative 1C Preliminary Site Plan

PHASING NOTES:

1. RE–ROUTE FORCEMAIN AND UNDERGROUND POWER ASSOCIATED WITH EXISTING INFLUENT PUMP STATION.
   - TEMPORARY PUMPING TO BE PROVIDED FROM INFLUENT PUMP STATION TO LAGOON NO. 1.

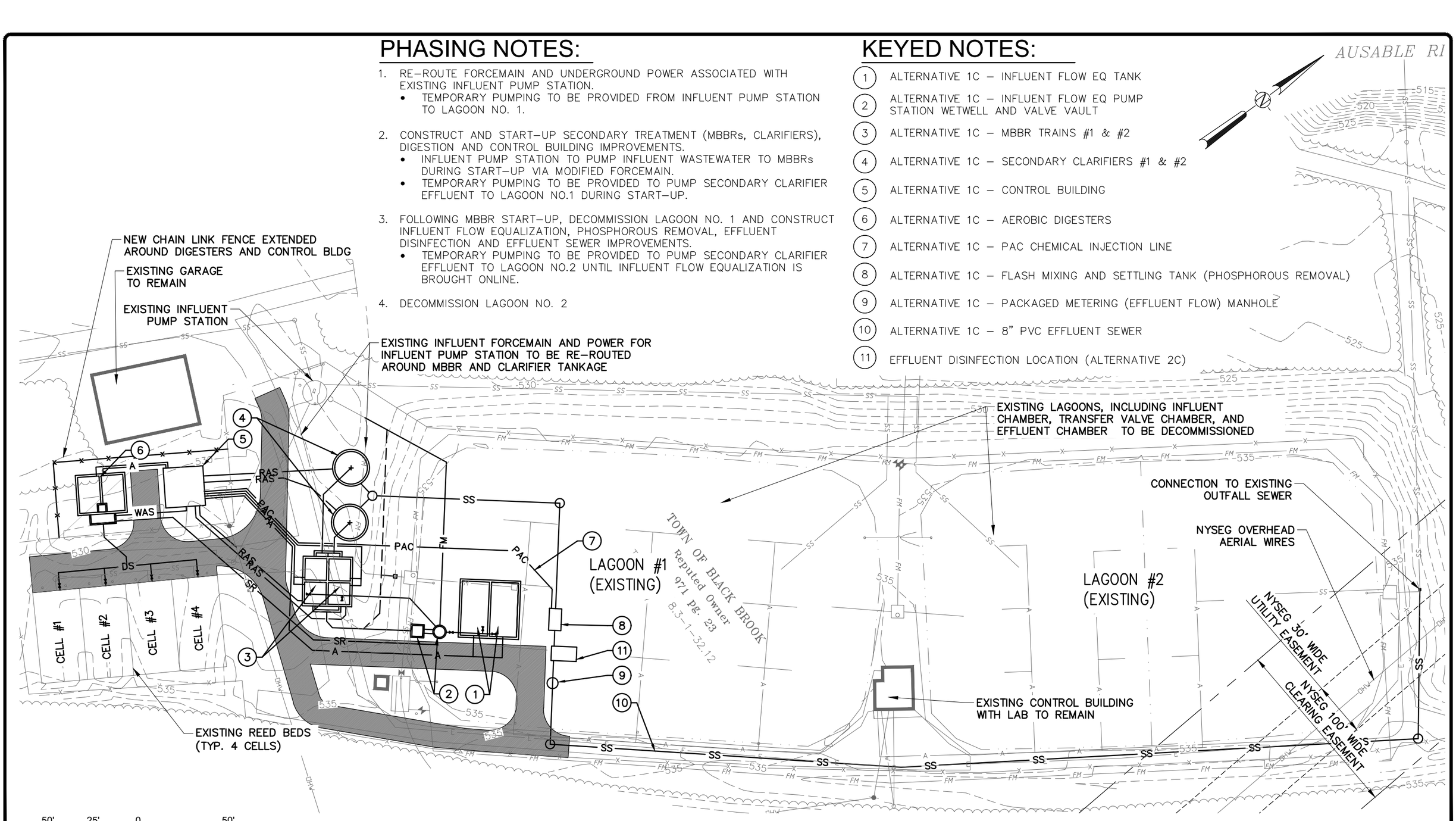
2. CONSTRUCT AND START–UP SECONDARY TREATMENT (MBBRs, CLARIFIERS), DIGESTION AND CONTROL BUILDING IMPROVEMENTS.
   - INFLUENT PUMP STATION TO PUMP INFLUENT WASTEWATER TO MBBRs DURING START–UP VIA MODIFIED FORCEMAIN.
   - TEMPORARY PUMPING TO BE PROVIDED TO PUMP SECONDARY CLARIFIER EFFLUENT TO LAGOON NO.1 DURING START–UP.

3. FOLLOWING MBBR START–UP, DECOMMISSION LAGOON NO. 1 AND CONSTRUCT INFLUENT FLOW EQUALIZATION, PHOSPHOROUS REMOVAL, EFFLUENT DISINFECTION AND EFFLUENT SEWER IMPROVEMENTS.
   - TEMPORARY PUMPING TO BE PROVIDED TO PUMP SECONDARY CLARIFIER EFFLUENT TO LAGOON NO.2 UNTIL INFLUENT FLOW EQUALIZATION IS BROUGHT ONLINE.

4. DECOMMISSION LAGOON NO. 2

KEYED NOTES:

1. ALTERNATIVE 1C – INFLUENT FLOW EQ TANK
2. ALTERNATIVE 1C – INFLUENT FLOW EQ PUMP STATION WETWELL AND VALVE VAULT
3. ALTERNATIVE 1C – MBBR TRAINS #1 & #2
4. ALTERNATIVE 1C – SECONDARY CLARIFIERS #1 & #2
5. ALTERNATIVE 1C – CONTROL BUILDING
6. ALTERNATIVE 1C – AEROBIC DIGESTERS
7. ALTERNATIVE 1C – PAC CHEMICAL INJECTION LINE
8. ALTERNATIVE 1C – FLASH MIXING AND SETTLING TANK (PHOSPHOROUS REMOVAL)
9. ALTERNATIVE 1C – PACKAGED METERING (EFFLUENT FLOW) MANHOLE
10. ALTERNATIVE 1C – 8" PVC EFFLUENT SEWER
11. EFFLUENT DISINFECTION LOCATION (ALTERNATIVE 2C)



SUBMITTAL / REVISIONS

No.	DATE	DESCRIPTION	BY	REVIEWED BY:	DATE

PROJ. MANAGER:	CLD
CHIEF DESIGNER:	MJD
DESIGNED BY:	EH
DRAWN BY:	AS
CHECKED BY:	CLD

SEAL

Engineering and Land Surveying, P.C.
1533 Crescent Road - Clifton Park, NY 12065

TOWN OF JAY
ENGINEERING REPORT

AU SABLE FORKS WWTP
PRELIMINARY SITE PLAN
ALTERNATIVE 1C - MBBRs

SCALE: AS SHOWN
CONTRACT No.:
MJ PROJ. No.: 1075.04
DATE: FEBRUARY 2020

P

File Name: F:\MJ\1075\1075.04 Town of Jay\ALT 1C - MBBR Prelim Site Plan.dwg (Layout: P)
Date: Mon, Jan 20, 2020 - 12:19 PM (Name: mdrislane)

Appendix Q

Alternative 1D Preliminary Site Plan

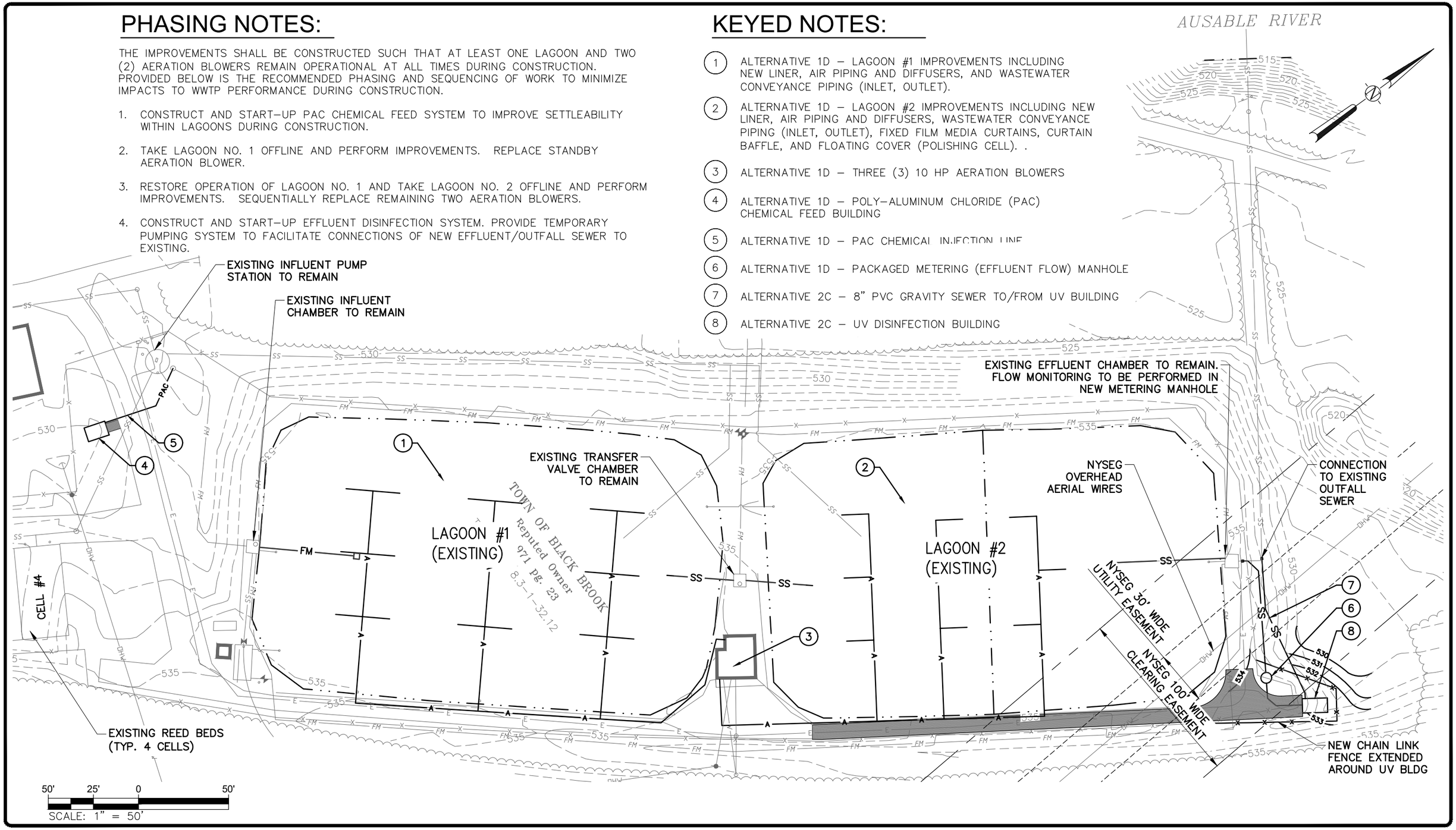
PHASING NOTES:

THE IMPROVEMENTS SHALL BE CONSTRUCTED SUCH THAT AT LEAST ONE LAGOON AND TWO (2) AERATION BLOWERS REMAIN OPERATIONAL AT ALL TIMES DURING CONSTRUCTION. PROVIDED BELOW IS THE RECOMMENDED PHASING AND SEQUENCING OF WORK TO MINIMIZE IMPACTS TO WWTP PERFORMANCE DURING CONSTRUCTION.

1. CONSTRUCT AND START-UP PAC CHEMICAL FEED SYSTEM TO IMPROVE SETTLEABILITY WITHIN LAGOONS DURING CONSTRUCTION.
2. TAKE LAGOON NO. 1 OFFLINE AND PERFORM IMPROVEMENTS. REPLACE STANDBY AERATION BLOWER.
3. RESTORE OPERATION OF LAGOON NO. 1 AND TAKE LAGOON NO. 2 OFFLINE AND PERFORM IMPROVEMENTS. SEQUENTIALLY REPLACE REMAINING TWO AERATION BLOWERS.
4. CONSTRUCT AND START-UP EFFLUENT DISINFECTION SYSTEM. PROVIDE TEMPORARY PUMPING SYSTEM TO FACILITATE CONNECTIONS OF NEW EFFLUENT/OUTFALL SEWER TO EXISTING.

KEYED NOTES:

1. ALTERNATIVE 1D – LAGOON #1 IMPROVEMENTS INCLUDING NEW LINER, AIR PIPING AND DIFFUSERS, AND WASTEWATER CONVEYANCE PIPING (INLET, OUTLET).
2. ALTERNATIVE 1D – LAGOON #2 IMPROVEMENTS INCLUDING NEW LINER, AIR PIPING AND DIFFUSERS, WASTEWATER CONVEYANCE PIPING (INLET, OUTLET), FIXED FILM MEDIA CURTAINS, CURTAIN BAFFLE, AND FLOATING COVER (POLISHING CELL). .
3. ALTERNATIVE 1D – THREE (3) 10 HP AERATION BLOWERS
4. ALTERNATIVE 1D – POLY-ALUMINUM CHLORIDE (PAC) CHEMICAL FEED BUILDING
5. ALTERNATIVE 1D – PAC CHEMICAL INJECTION LINE
6. ALTERNATIVE 1D – PACKAGED METERING (EFFLUENT FLOW) MANHOLE
7. ALTERNATIVE 2C – 8" PVC GRAVITY SEWER TO/FROM UV BUILDING
8. ALTERNATIVE 2C – UV DISINFECTION BUILDING



SUBMITTAL / REVISIONS

No.	DATE	DESCRIPTION	BY	REVIEWED BY:	DATE

PROJ. MANAGER:	CLD
CHIEF DESIGNER:	MJD
DESIGNED BY:	EH
DRAWN BY:	AS
CHECKED BY:	CLD

SEAL

Engineering and Land Surveying, P.C.
1533 Crescent Road - Clifton Park, NY 12065

TOWN OF JAY
ENGINEERING REPORT
AU SABLE FORKS WWTP
PRELIMINARY SITE PLAN
ALTERNATIVE 1D - LAGOONS
(& ALTERNATIVE 2C - UV)

SCALE:	AS SHOWN
CONTRACT No.:	
MJ PROJ. No.:	1075.04
DATE:	FEBRUARY 2020

Q

File Name: F:\MJ\1075\1075.04 Town of Jay\ALT 1D - Prelim Site Plan.dwg (Layout: Q)
Date: Mon, Jan 20, 2020 - 12:40 PM (Name: mdrislane)

Appendix R

WWTP Monthly Operating Reports –
August 2013 To October 2013

ENDYNE Inc.
Environmental Laboratories

Laboratory Report

Town of Jay 200566
P.O. Box 730
Ausable Forks, NY 12912

Atten: Chris Garrow

PROJECT: Inf(BOD, TSS) Eff(BOD, TSS,
WORK ORDER: **1308-14340**
DATE RECEIVED: August 01, 2013
DATE REPORTED: August 08, 2013
SAMPLER: Chet Pulsifer

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody located at the end of this report.

The column labeled Lab/Tech in the accompanying report denotes the laboratory facility where the testing was performed and the technician who conducted the assay. A "W" designates the Williston, VT lab under NELAC certification ELAP 11263; "R" designates the Randolph, VT facility under certification NH 2037 and "N" the Plattsburgh, NY lab under certification ELAP 11892. "Sub" indicates the testing was performed by a subcontracted laboratory. The accreditation status of the subcontracted lab is referenced in the corresponding NELAC and Qual fields.

This NELAC column also denotes the accreditation status of each laboratory for each reported parameter. "A" indicates the referenced laboratory is NELAC accredited for the parameter reported. "N" indicates the laboratory is not accredited. "U" indicates that NELAC does not offer accreditation for that parameter in that specific matrix. Test results denoted with an "A" meet all National Environmental Laboratory Accreditation Program requirements except where denoted by pertinent data qualifiers. Test results are representative of the samples as they were received at the laboratory.

Endyne, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose.

Reviewed by:

Christina A Lafountain
Laboratory Director Plattsburgh, NY

Laboratory Report

CLIENT: Town of Jay
PROJECT: Inf(BOD, TSS) Eff(BOD, TSS,

WORK ORDER: **1308-14340**
DATE RECEIVED: 8/1/13

001 Site: Influent — Date Sampled: 8/1/13 Time: 9:30

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
BOD-5day	59	mg/L	SM18 5210B	8/1/13 16:22	N BEB	A	
Solids, Total Suspended	25.2	mg/L	SM20 2540D	8/2/13	N BEB	A	

002 Site: Effluent — Date Sampled: 8/1/13 Time: 9:30

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
BOD-5day	9.7	mg/L	SM18 5210B	8/1/13 16:23	N BEB	A	
Phosphorus, Total	5.2	mg/L	EPA 365.1	8/5/13	N JGM	A	
Solids, Total Suspended	1.6	mg/L	SM20 2540D	8/2/13	N BEB	A	

Test results comply with all NELAC requirements unless otherwise noted. This Laboratory Report includes the client's COC sample documentation and shall not be reproduced except in full, without written approval of the laboratory.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: JAY (T)

ADDRESS: PO BOX 730, 11 SCHOOL ST
AUSABLE FORKS, NY 12912-0730

FACILITY: AUSABLE FORKS COMM WWTF

LOCATION: 215 GROVE ROAD
AUSABLE FORKS, NY 12912

ATTN: CHRISTOPHER GARROW

NY0201910	001-M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
8/1/2013	8/31/2013

DMR Mailing ZIP CODE. 12941
MINOR
(SUBR 05)
WWTP OUTFALL
External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Flow rate	SAMPLE MEASUREMENT	0.068	******	MGD	******	******	******	******	0	99/99	RC
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	147 30DA AVG	******	MGD	******	******	******	******		Continuous	RCORDR
BOD, 5-day, 20 deg. C	SAMPLE MEASUREMENT	4.5	4.5	lb/D	******	9.7	9.7	mg/L	0	01/31	GR
00310 1 0 Effluent Gross	PERMIT REQUIREMENT	37 MO AVG	55 7 DA AVG	lb/d	******	30 MO AVG	45 7 DA AVG	mg/L		Monthly	GRAB
pH	SAMPLE MEASUREMENT	******	******	******	7.4	******	7.7	SU	0	01/01	GR
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	6 MINIMUM	******	9 MAXIMUM	SU		Daily	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	0.7	0.7	lb/D	******	1.6	1.6	mg/L	0	01/31	GR
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	85 MO AVG	128 7 DA AVG	lb/d	******	70 MO AVG	105 7 DA AVG	mg/L		Monthly	GRAB
Solids, settleable	SAMPLE MEASUREMENT	******	******	******	******	******	<0.1	ML/L	0	01/01	GR
00545 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	3 DAILY MX	mL/L		Daily	GRAB
Phosphorus, total [as P]	SAMPLE MEASUREMENT	1.53	******		******	5.2	******	mg/L	0	01/31	GR
00665 1 0 Effluent Gross	PERMIT REQUIREMENT	4.47 ROLL AVG	******	lb/d	******	Req. Mon. 30DA AVG	******	mg/L		Monthly	GRAB
BOD, 5-day, percent removal	SAMPLE MEASUREMENT	******	******	******	95	******	******	%	0	01/31	CA
81010 K 0 Percent Removal	PERMIT REQUIREMENT	******	******	******	85 MO AV MN	******	******	%		Monthly	CALCTD

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Chris Garrow	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Chris Garrow	518-946-7170		09/12/2013
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

THE PHOSPHORUS ROLLING AVERAGE IS THE 12 MONTH ROLLING AVERAGE. IT SHALL BE COMPUTED AS FOLLOWS: THE SUM OF THE CURRENT MONTH S (AND THE PAST 11 MONTH'S) 30 DAY ARITHMETIC MEAN IN LBS/DAY DIVIDED BY 12.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (N.P.D.E.S.)

DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: JAY (T)

ADDRESS: PO BOX 730, 11 SCHOOL ST
AUSABLE FORKS, NY 12912-0730

FACILITY: AUSABLE FORKS COMM WWTF

LOCATION: 215 GROVE ROAD
AUSABLE FORKS, NY 12912

ATTN: CHRISTOPHER GARROW

NY0201910	001-M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
8/1/2013	8/31/2013

DMR Mailing ZIP CODE: 12941
MINOR
(SUBR 05)
WWTP OUTFALL
External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Solids, suspended percent removal	SAMPLE MEASUREMENT	******	******	******	99	******	******	%	0	01/31	CA
81011 K 0 Percent Removal	PERMIT REQUIREMENT	******	******	******	85 MO AV MN	******	******	%		Monthly	CAL CTD

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Chris Garrow	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Chris Garrow	518-946-7170		09/12/2013
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

THE PHOSPHORUS ROLLING AVERAGE IS THE 12 MONTH ROLLING AVERAGE. IT SHALL BE COMPUTED AS FOLLOWS: THE SUM OF THE CURRENT MONTH'S (AND THE PAST 11 MONTH'S) 30 DAY ARITHMETIC MEAN IN LBS/DAY DIVIDED BY 12

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER

WASTEWATER FACILITY OPERATION REPORT FOR THE MONTH OF August, 2013

SPDES PERMIT NO. NY- 0201910 | FACILITY NAME: Ausable Forks WWTF | FACILITY OWNER: Jay @ / Black Brook @ | FACILITY LOCATION: 215 Grove Road Ausable Forks N.Y. 12912

Day	Date	Daily Precip In/day	VOLUME OF WASTEWATER TREATED Inst. Max MGD	Daily Ave. MGD	Inst. Min. MGD	TEMPERATURE (C F) Influent (2)	Effluent (2)	pH (S.U.) Influent Minimum	Influent Maximum	Effluent Minimum	Effluent Maximum	SETTLEABLE SOLIDS (ml/l) Influent Maximum	Effluent Maximum	B.O.D.5 (mg/l) Influent Type	Effluent Type	SUSPENDED SOLIDS (mg/l) Influent Type	Effluent Type
	1		0.067	0.056	0.040	19.0	21.5		7.2		7.6	0.1	<0.1	59	9.7	25.2	1.6
	2		0.061	0.056	0.051	19.5	22.0		7.1		7.5	0.4	<0.1				
	3		0.052	0.050	0.040	19.3	21.9		7.1		7.5	0.1	<0.1				
	4		0.048	0.046	0.042	18.8	21.1		7.1		7.5	0.2	<0.1				
	5		0.046	0.040	0.018	18.6	20.4		7.0		7.4	0.3	<0.1				
	6		0.045	0.044	0.042	18.9	20.6		7.1		7.4	0.1	<0.1				
	7		0.045	0.043	0.042	19.7	21.9		7.2		7.5	0.2	<0.1				
	8		0.051	0.047	0.026	19.3	21.2		7.1		7.5	0.1	<0.1				
	9		0.059	0.056	0.050	19.4	21.7		7.1		7.5	0.1	<0.1				
	10		0.053	0.051	0.046	20.0	22.1		7.1		7.4	0.1	<0.1				
	11		0.049	0.046	0.044	19.0	20.9		7.1		7.4	0.1	<0.1				
	12		0.047	0.045	0.044	20.3	21.5		7.0		7.5	0.2	<0.1				
	13		0.062	0.054	0.041	18.9	21.1		7.1		7.4	0.2	<0.1				
	14		0.056	0.053	0.049	19.5	21.0		7.1		7.4	0.1	<0.1				
	15		0.118	0.096	0.048	18.8	19.6		7.1		7.4	0.1	<0.1				
	16		0.118	0.118	0.118	18.9	19.8		7.1		7.5	0.6	<0.1				
	17		0.118	0.118	0.118	18.4	18.5		7.2		7.5	0.2	<0.1				
	18		0.118	0.118	0.118	18.7	19.7		7.1		7.6	0.2	<0.1				
	19		0.118	0.117	0.102	19.1	19.4		7.1		7.5	0.2	<0.1				
	20		0.114	0.098	0.000	18.9	20.0		7.2		7.5	0.1	<0.1				
	21		0.118	0.075	0.000	18.8	20.2		7.2		7.6	0.1	<0.1				
	22		0.118	0.114	0.090	19.1	20.9		7.2		7.6	0.1	<0.1				
	23		0.118	0.108	0.000	19.0	20.2		7.2		7.7	0.6	<0.1				
	24		0.112	0.080	0.056	18.7	19.7		7.2		7.7	0.2	<0.1				
	25		0.057	0.054	0.049	18.8	19.6		7.1		7.6	0.1	<0.1				
	26		0.060	0.055	0.048	20.2	20.4		7.1		7.5	0.2	<0.1				
	27		0.075	0.062	0.049	20.0	20.4		7.1		7.5	1.5	<0.1				
	28		0.073	0.067	0.058	19.8	20.1		7.1		7.5	1.5	<0.1				
	29		0.060	0.050	0.044	20.1	20.8		7.2		7.6	1.0	<0.1				
	30		0.053	0.049	0.043	19.2	20.7		7.1		7.4	4.0	<0.1				
	31		0.055	0.050	0.044	19.7	21.2		7.1		7.5	3.0	<0.1				
	Total Precip		Monthly Average			Monthly Average Influent	Monthly Average Effluent	Min Influent	Max Monthly Min Effluent	Max Monthly Min Influent	Max Effluent	Monthly Maximum	Monthly Maximum	30 day arithmetic mean (1) Inf.(mg/l)	Eff.(mg/l)	%Rem.	30 day arithmetic mean (1) Inf.(mg/l)	Eff.(mg/l)	%Rem.
			0.068			19.2	21.0	7.0	7.4	7.2	7.7	4.0	<0.1	200	9.7	95	200	1.6	99
												30 Day Average Quantity Loading (1)		4.5 lbs/day			0.7 lbs/day		

(1) Refer to February 2002 edition of *DMR Manual for Completing the Discharge Monitoring Report for the State Pollutant Discharge Elimination System (SPDES)* for procedures to calculate loadings, arithmetic mean, geometric mean, maximum, minimum, percent removal, etc.

(2) If temperature is measured more than once a day, report the average for day.

NOTE: Refer to current SPDES permit for specific monitoring requirements. Sample type for temperature, pH and settleable solids is grab.

FACILITY MAILING ADDRESS (Street, City, State, Zip Code)	TELEPHONE NUMBER	CHIEF OPERATOR'S NAME	CERTIFICATION GRADE
Jay @ P.O. Box 73011 School St. Au Sable Forks N.Y. 12912	518 647-2204	Chester Pulsifer	1

Day	Date	TOTAL PHOSPHORUS (mg/l) Influent Type	TOTAL PHOSPHORUS (mg/l) Effluent Type	CHLORINE RESIDUAL Effluent mg/l Minimum	CHLORINE RESIDUAL Effluent mg/l Maximum	FECAL COLIFORM Effluent MF or MPN/100 ml	REMARKS Enter any other comments, observations, operating problems, equipment failure, etc.
	1		5.2				Brought Samples to LAB
	2						
	3						
	4						
	5						
	6						
	7						
	8						
	9						Power outage Had to reset Surface aerators
	10						
	11						
	12						
	13						
	14						Moved Surface Aerator from Lagoon #1 to Lagoon #2
	15						
	16						Shut Down Blowers By Passed lagoon #1 TO Drain and clean
	17						
	18						Flows High Due to Dewatering of Lagoon #1
	19						
	20						
	21						
	22						
	23						
	24						Pumped Sludge in reed Bed until Filled Reed Bed #3
	25						
	26						
	27						
	28						Used water in Lagoon #1 with Pump and Hose to move Sludge
	29						Filled Bed two with Sludge Then Switched to Bed #4
	30						
	31						

	30 day arithmetic mean (1) Influent(mg/l)	30 day arithmetic mean (1) Effluent(mg/l)	Monthly Minimum (1)	Monthly Maximum (1)	30 day Geometric Mean (1)
		5.2			
	2.43 lbs/day				

(1) Refer to February 2002 edition of *DMR Manual for Completing the Discharge Monitoring Report for the State Pollutant Discharge Elimination System (SPDES)* for procedures to calculate loadings, arithmetic mean, geometric mean, maximum, minimum, percent removal, etc.

NOTE: Refer to current SPDES permit for specific monitoring requirements. Sample type for chlorine residual and fecal coliform is grab.

Effect on Receiving Stream

NAME OF RECEIVING STREAM			
DATE	STATION	PARAMETER	RESULT

TRUCKED WASTE RECEIVED THIS MONTH		
1. Septage, holding tank waste and portable toilet waste		
	Total	Max day
Volume (gallons)		
2. All other wastes		
	Total	Max day
Volume (gallons)		
3. Number of Part 364 haulers currently approved to transport wastes to this POTW		
a. Septage, etc.		
b. All others		

Name and amount of chemicals used in treatment process during month:		
a.	Chlorine	lbs.
b.		lbs.
c.		lbs.
d.		lbs.
e.		lbs.
f.		lbs.

Amount of electrical power consumed:		
a.	Commercial	kilowatt hours
b.	Stand-by	kilowatt hours

Amount of fuel consumed:		
a.	Natural Gas	cubic feet
b.	Oil	gallons
c.	Gasoline	gallons
d.	Coal	tons
e.	Digester Gas	cubic feet
f.	Propane	gallons

Sludge removal from plant:		
a.	Amount	cu.yds
b.	Solid Content	%
c.	Volatile Solids Content	%
d.	Disposal Site	

Other Solid Wastes		
a.	Screenings	cubic feet
b.	Grit	cubic feet
c.	Ashes	tons
d.		
e.		
f.		
g.	Disposal Site	
h.	Digester Gas Wasted	cubic feet

Labor Expended:

POSITION NAME	NUMBER FULL TIME	NUMBER PART TIME	TOTAL HOURS
Chester Rutsifer	1		
Paulmintz operator in Training	1		

I certify under penalty of the law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Principal Executive Officer or Authorized Agent

9-13-17
Date

Sewer Plant

ENDYNE Inc.
Environmental Laboratories

Laboratory Report

Town of Jay 200566
P.O. Box 730
Ausable Forks, NY 12912

Atten: Chris Garrow

PROJECT: Inf(BOD, TSS) Eff(BOD, TSS,
WORK ORDER: **1309-17162**
DATE RECEIVED: September 04, 2013
DATE REPORTED: September 11, 2013
SAMPLER: Chet Pulsifer

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody located at the end of this report.

The column labeled Lab/Tech in the accompanying report denotes the laboratory facility where the testing was performed and the technician who conducted the assay. A "W" designates the Williston, VT lab under NELAC certification ELAP 11263; "R" designates the Randolph, VT facility under certification NH 2037 and "N" the Plattsburgh, NY lab under certification ELAP 11892. "Sub" indicates the testing was performed by a subcontracted laboratory. The accreditation status of the subcontracted lab is referenced in the corresponding NELAC and Qual fields.

This NELAC column also denotes the accreditation status of each laboratory for each reported parameter. "A" indicates the referenced laboratory is NELAC accredited for the parameter reported. "N" indicates the laboratory is not accredited. "U" indicates that NELAC does not offer accreditation for that parameter in that specific matrix. Test results denoted with an "A" meet all National Environmental Laboratory Accreditation Program requirements except where denoted by pertinent data qualifiers. Test results are representative of the samples as they were received at the laboratory.

Endyne, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose.

Reviewed by:

Christina A Lafountain
Laboratory Director Plattsburgh, NY

Laboratory Report

CLIENT: Town of Jay
PROJECT: Inf(BOD, TSS) Eff(BOD, TSS,

WORK ORDER: **1309-17162**
DATE RECEIVED: 9/4/13

001 Site: Influent — Date Sampled: 9/4/13 Time: 9:15

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
BOD-5day	65	mg/L	SM18 5210B	9/4/13 12:29	N BEB	A	
Solids, Total Suspended	32.7	mg/L	SM20 2540D	9/6/13	N AAS	A	

002 Site: Effluent — Date Sampled: 9/4/13 Time: 9:15

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
BOD-5day	33	mg/L	SM18 5210B	9/4/13 12:32	N BEB	A	
Phosphorus, Total	4.8	mg/L	EPA 365.1	9/5/13	N JGM	A	
Solids, Total Suspended	4.2	mg/L	SM20 2540D	9/6/13	N AAS	A	

ENDYNE Inc.
Environmental Laboratories

Laboratory Report

Jay, Town of 200566
168 Valley Road
Jay, NY 12941

Atten: Chris Garrow

PROJECT: Wastewater-Effluent BOD
WORK ORDER: **1309-19046**
DATE RECEIVED: September 25, 2013
DATE REPORTED: September 30, 2013
SAMPLER: Chet Pulsifer

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody located at the end of this report.

The column labeled Lab/Tech in the accompanying report denotes the laboratory facility where the testing was performed and the technician who conducted the assay. A "W" designates the Williston, VT lab under NELAC certification ELAP 11263; "R" designates the Randolph, VT facility under certification NH 2037 and "N" the Plattsburgh, NY lab under certification ELAP 11892. "Sub" indicates the testing was performed by a subcontracted laboratory. The accreditation status of the subcontracted lab is referenced in the corresponding NELAC and Qual fields.

This NELAC column also denotes the accreditation status of each laboratory for each reported parameter. "A" indicates the referenced laboratory is NELAC accredited for the parameter reported. "N" indicates the laboratory is not accredited. "U" indicates that NELAC does not offer accreditation for that parameter in that specific matrix. Test results denoted with an "A" meet all National Environmental Laboratory Accreditation Program requirements except where denoted by pertinent data qualifiers. Test results are representative of the samples as they were received at the laboratory.

Endyne, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose.

Reviewed by:

Christina A Lafountain
Laboratory Director Plattsburgh, NY

Laboratory Report

CLIENT: Jay, Town of
PROJECT: Wastewater-Effluent BOD

WORK ORDER: **1309-19046**
DATE RECEIVED: 9/25/13

001 Site: Effluent Date Sampled: 9/25/13 Time: 8:20

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
BOD-5day	20	mg/L	SM18 5210B	9/25/13 15:13	N BEB	A	

Test results comply with all NELAC requirements unless otherwise noted. This Laboratory Report includes the client's COC sample documentation and shall not be reproduced except in full, without written approval of the laboratory.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: JAY (T)
ADDRESS: PO BOX 730, 11 SCHOOL ST
AUSABLE FORKS, NY 12912-0730
FACILITY: AUSABLE FORKS COMM WWTF
LOCATION: 215 GROVE ROAD
AUSABLE FORKS, NY 12912
ATTN: CHRISTOPHER GARROW

NY0201910	001-M
PERMIT NUMBER	**DISCHARGE NUMBER**

MONITORING PERIOD	
MM/DD/YYYY	**MM/DD/YYYY**
9/1/2013	9/30/2013

DMR Mailing ZIP CODE: 12941
MINOR
(SUBR 05)
WWTP OUTFALL
External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Flow rate	SAMPLE MEASUREMENT	0.056	******	MGD	******	******	******	******	0	99/99	RC
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	147 30DA ARI	******	MGD	******	******	******	******		Continuous	RCORDR
BOD, 5-day, 20 deg. C	SAMPLE MEASUREMENT	(68) 26 11	14	lb/d	******	26	33	mg/L	0	02/30	GR
00310 1 0 Effluent Gross	PERMIT REQUIREMENT	37 MO AVG	55 7 DA AVG	lb/d	******	30 MO AVG	45 7 DA AVG	mg/L		Monthly	GRAB
pH	SAMPLE MEASUREMENT	******	******	******	7.4	******	7.8	SU	0	01/01	GR
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	6 MINIMUM	******	9 MAXIMUM	SU		Daily	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	1.8	1.8	lb/d	******	4.2	4.2	mg/L	0	01/30	GR
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	85 MO AVG	128 7 DA AVG	lb/d	******	70 MO AVG	105 7 DA AVG	mg/L		Monthly	GRAB
Solids, settleable	SAMPLE MEASUREMENT	******	******	******	******	******	<0.1	mL/L	0	01/01	GR
00545 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	3 DAILY MX	mL/L		Daily	GRAB
Phosphorus, total [as P]	SAMPLE MEASUREMENT	1.60	******	lb/d	******	4.8	******	mg/L	0	01/30	GR
00665 1 0 Effluent Gross	PERMIT REQUIREMENT	4.47 ROLL AVG	******	lb/d	******	Req. Mon. 30DA AVG	******	mg/L		Monthly	GRAB
BOD, 5-day, percent removal	SAMPLE MEASUREMENT	******	******	******	87	******	******	%	0	01/30	CA
81010 K 0 Percent Removal	PERMIT REQUIREMENT	******	******	******	85 MO AV MN	******	******	%		Monthly	CALCTD

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Chris Garrow	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	518-	946-7170	10/16/2013
TYPED OR PRINTED			AREA Code	NUMBER	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

THE PHOSPHORUS ROLLING AVERAGE IS THE 12 MONTH ROLLING AVERAGE. IT SHALL BE COMPUTED AS FOLLOWS: THE SUM OF THE CURRENT MONTH'S (AND THE PAST 11 MONTH'S) 30 DAY ARITHMETIC MEAN IN LBS/DAY DIVIDED BY 12.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: JAY (T)

ADDRESS: PO BOX 730, 11 SCHOOL ST
AUSABLE FORKS, NY 12912-0730

FACILITY: AUSABLE FORKS COMM WWTF

LOCATION: 215 GROVE ROAD
AUSABLE FORKS, NY 12912

ATTN: CHRISTOPHER GARROW

NY0201910	001-M
PERMIT NUMBER	**DISCHARGE NUMBER**

MONITORING PERIOD	
MM/DD/YYYY	**MM/DD/YYYY**
9/1/2013	9/30/2013

DMR Mailing ZIP CODE: 12941
MINOR
(SUBR 05)
WWTP OUTFALL
External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Solids, suspended percent removal	SAMPLE MEASUREMENT	******	******	******	98	******	******	%	0	01/30	CA
81011 K 0 Percent Removal	PERMIT REQUIREMENT	******	******	******	85 MO AV MN	******	******	%		Monthly	CALCTD

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Chris Garrow	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Chris Garrow	518	946-7170	10/16/2013
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

THE PHOSPHORUS ROLLING AVERAGE IS THE 12 MONTH ROLLING AVERAGE. IT SHALL BE COMPUTED AS FOLLOWS: THE SUM OF THE CURRENT MONTH'S (AND THE PAST 11 MONTH'S) 30 DAY ARITHMETIC MEAN IN LBS/DAY DIVIDED BY 12

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER

WASTEWATER FACILITY OPERATION REPORT FOR THE MONTH OF September, 2013

SPDES PERMIT NO. NY- 0201910 | FACILITY NAME: Au Sable Forks WWTF | FACILITY OWNER: Jay (T) / Black Brook (T) | FACILITY LOCATION: 315 Grove Rd. Au Sable Forks N.Y. 12912

Day	Date	Daily Precip In/day	VOLUME OF WASTEWATER TREATED Inst. Max MGD	Daily Ave. MGD	Inst. Min. MGD	TEMPERATURE (C F) Influent (2)	Effluent (2)	pH (S.U.) Influent Minimum	Influent Maximum	Effluent Minimum	Effluent Maximum	SETTLEABLE SOLIDS (ml/l) Influent Maximum	Effluent Maximum	B.O.D.. (mg/l) Influent Type	Effluent Type	SUSPENDED SOLIDS (mg/l) Influent Type	Effluent Type
	1		0.053	0.049	0.045	19.4	21.3		7.1		7.6	4.0	<0.1				
	2		0.069	0.055	0.044	19.9	21.5		7.1		7.5	5.0	<0.1				
	3		0.067	0.060	0.051	19.7	21.6		7.2		7.4	15.0	<0.1				
	4		0.059	0.051	0.046	18.7	20.0		7.0		7.4	1.0	<0.1	65	33	32.7	4.2
	5		0.051	0.031	0.000	18.6	20.2		7.2		7.5	1.0	<0.1				
	6		0.000	0.000	0.000												
	7		0.000	0.000	0.000												
	8		0.000	0.000	0.000												
	9		0.000	0.000	0.000												
	10		0.000	0.000	0.000												
	11		0.000	0.000	0.000												
	12		0.000	0.000	0.000												
	13		0.000	0.000	0.000												
	14		0.007	0.002	0.000												
	15		0.029	0.015	0.005	18.2	18.8		7.1		7.4	<0.1	<0.1				
	16		0.118	0.106	0.025	18.2	18.5		7.1		7.6	<0.1	<0.1				
	17		0.118	0.114	0.067	16.5	15.5		7.2		7.8	2.0	<0.1				
	18		0.118	0.096	—	18.0	16.5		7.2		7.7	0.5	<0.1				
	19		0.123	0.091	0.025	17.0	16.0		7.1		7.7	0.3	<0.1				
	20		0.094	0.077	0.060	16.6	16.3		7.2		7.5	0.2	<0.1				
	21		0.064	0.060	0.054	17.4	17.4		7.1		7.6	0.1	<0.1				
	22		0.056	0.053	0.048	17.8	18.3		7.1		7.7	<0.1	<0.1				
	23		0.053	0.050	0.045	16.8	16.7		7.2		7.8	2.5	<0.1				
	24		0.050	0.047	0.041	16.8	16.1		7.1		7.8	0.5	<0.1				
	25		0.055	0.044	0.017	16.8	15.9		7.1		7.7	0.1	<0.1		20		
	26		0.045	0.039	0.000	17.1	16.0		7.3		7.8	0.1	<0.1				
	27		0.048	0.045	0.039	16.7	15.7		7.1		7.6	0.1	<0.1				
	28		0.052	0.047	0.041	17.3	16.2		7.1		7.6	0.1	<0.1				
	29		0.051	0.047	0.041	17.0	16.4		7.2		7.7	0.1	<0.1				
	30		0.049	0.046	0.038	16.4	16.3		7.2		7.7	0.1	<0.1				
	31																

Total Precip	Monthly Average	Monthly Average Influent	Monthly Average Effluent	Min Influent	Max Monthly Min Effluent	Max Monthly Min Influent	Max Effluent	Monthly Maximum	Monthly Maximum	30 day arithmetic mean (1) Inf.(mg/l)	Eff.(mg/l)	%Rem.	30 day arithmetic mean (1) Inf.(mg/l)	Eff.(mg/l)	%Rem.
	0.056	17.7	17.7	7.0	7.4	7.2	7.8	15.0	<0.1	200	26	87	200	4.2	98
								30 Day Average Quantity Loading (1)		11 lbs/day			1.8 lbs/day		

(1) Refer to February 2002 edition of *DMR Manual for Completing the Discharge Monitoring Report for the State Pollutant Discharge Elimination System (SPDES)* for procedures to calculate loadings, arithmetic mean, geometric mean, maximum, minimum, percent removal, etc.

(2) If temperature is measured more than once a day, report the average for day.

NOTE: Refer to current SPDES permit for specific monitoring requirements. Sample type for temperature, pH and settleable solids is grab.

FACILITY MAILING ADDRESS (Street, City, State, Zip Code)	TELEPHONE NUMBER	CHIEF OPERATOR'S NAME	CERTIFICATION GRADE
Jay @ P.O. Box 730 11 School ST. Au Sable Forks N.Y. 12912	(518) 647-2204	Chester Pulsifer	

Day	Date	TOTAL PHOSPHORUS (mg/l) Influent Type	TOTAL PHOSPHORUS (mg/l) Effluent Type	CHLORINE RESIDUAL Effluent mg/l Minimum	CHLORINE RESIDUAL Effluent mg/l Maximum	FECAL COLIFORM Effluent MF or MPN/100 ml		REMARKS Enter any other comments, observations, operating problems, equipment failure, etc.
	1							
	2							
	3							
	4		4.8					Replaced aerators on line #3 in Lagoon #1 with EDI tube diffusers; replaced 2" fitting on main trunk Straightened and levelled line #1 in Lagoon #1; Corrected small leak from yesterdays installation.
	5							
	6							
	7							Began introducing water back into Lagoon #1 from Lagoon #2. Removed surface aerators from Lagoon #2.
	8							No discharge - Lagoon #1 being refilled with influent; Lagoon #2 bypassed/isolated.
	9							No discharge - Lagoon #1 filling from influent.
	10							No discharge - Lagoon #1 filling from influent
	11							No discharge - Lagoon #1 filling from influent
	12							No discharge - Lagoon #1 filling from influent
	13							No discharge - Began pumping Lagoon #2 into Lagoon #1
	14							No discharge - Continued pumping Lagoon #2 into Lagoon #1
	15							No discharge - opened bypass valve from Lagoon #1 to effluent chamber
	16							Lagoon #1 began discharging to river
	17							
	18							Lab was 51°F this morning; replaced baseboard heater in main area.
	19							Influent has strong odor due to pumping into pump station from reed beds to make room.
	20							Fullers began washing off banks of Lagoon #2 to prepare for pumping sludge. Troubleshot air distribution.
	21							Lagoon #2 almost empty - air lines exposed, diffusers are not. Sludge pumped to reed beds.
	22							
	23							
	24							Fullers breaking down pumps and pipe line for removal, removed all 8 diffusers from #2. (all broken)
	25							
	26							Replaced all 3 2" couplings on #2's main lines; replaced diffusers with EDI tube diffusers.
	27							Finished washing down liner for repair next week
	28							
	29							
	30							
	31							Liner in Lagoon #2 repaired today

30 day arithmetic mean (1) Influent(mg/l)	30 day arithmetic mean (1) Effluent(mg/l)	Monthly Minimum (1)	Monthly Maximum (1)	30 day Geometric Mean (1)
	4.8			
	2.0 lbs/day			

(1) Refer to February 2002 edition of *DMR Manual for Completing the Discharge Monitoring Report for the State Pollutant Discharge Elimination System (SPDES)* for procedures to calculate loadings, arithmetic mean, geometric mean, maximum, minimum, percent removal, etc.

NOTE: Refer to current SPDES permit for specific monitoring requirements. Sample type for chlorine residual and fecal coliform is grab.

Effect on Receiving Stream

NAME OF RECEIVING STREAM			
DATE	STATION	PARAMETER	RESULT

TRUCKED WASTE RECEIVED THIS MONTH		
1. Septage, holding tank waste and portable toilet waste		
	Total	Max day
Volume (gallons)	0	0
2. All other wastes		
	Total	Max day
Volume (gallons)		
3. Number of Part 364 haulers currently approved to transport wastes to this POTW		
a. Septage, etc.		
b. All others		

Name and amount of chemicals used in treatment process during month:		
a.	Chlorine	lbs.
b.		lbs.
c.		lbs.
d.		lbs.
e.		lbs.
f.		lbs.

Amount of electrical power consumed:		
a.	Commercial	kilowatt hours
b.	Stand-by	kilowatt hours

Amount of fuel consumed:		
a.	Natural Gas	cubic feet
b.	Oil	gallons
c.	Gasoline	gallons
d.	Coal	tons
e.	Digester Gas	cubic feet
f.	Propane	gallons

Sludge removal from plant:		
a.	Amount	cu.yds
b.	Solid Content	%
c.	Volatile Solids Content	%
d.	Disposal Site	

Other Solid Wastes		
a.	Screenings	cubic feet
b.	Grit	cubic feet
c.	Ashes	tons
d.		
e.		
f.		
g.	Disposal Site	
h.	Digester Gas Wasted	cubic feet

Labor Expended:

POSITION NAME	NUMBER FULL TIME	NUMBER PART TIME	TOTAL HOURS
Chief Operator			
Operator in training			
Assistant Operator			

I certify under penalty of the law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Principal Executive Officer or Authorized Agent

10-17-13

Date

ENDYNE Inc.
Environmental Laboratories

Laboratory Report

Town of Jay 200566
P.O. Box 730
Ausable Forks, NY 12912

Atten: Chris Garrow

PROJECT: Inf(BOD, TSS) Eff(BOD, TSS,
WORK ORDER: **1310-19653**
DATE RECEIVED: October 02, 2013
DATE REPORTED: October 09, 2013
SAMPLER: Chet Pulsifer

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody located at the end of this report.

The column labeled Lab/Tech in the accompanying report denotes the laboratory facility where the testing was performed and the technician who conducted the assay. A "W" designates the Williston, VT lab under NELAC certification ELAP 11263; "R" designates the Randolph, VT facility under certification NH 2037 and "N" the Plattsburgh, NY lab under certification ELAP 11892. "Sub" indicates the testing was performed by a subcontracted laboratory. The accreditation status of the subcontracted lab is referenced in the corresponding NELAC and Qual fields.

This NELAC column also denotes the accreditation status of each laboratory for each reported parameter. "A" indicates the referenced laboratory is NELAC accredited for the parameter reported. "N" indicates the laboratory is not accredited. "U" indicates that NELAC does not offer accreditation for that parameter in that specific matrix. Test results denoted with an "A" meet all National Environmental Laboratory Accreditation Program requirements except where denoted by pertinent data qualifiers. Test results are representative of the samples as they were received at the laboratory.

Endyne, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose.

Reviewed by:

Christina A Lafountain
Laboratory Director Plattsburgh, NY

Laboratory Report

CLIENT: Town of Jay
PROJECT: Inf(BOD, TSS) Eff(BOD, TSS,

WORK ORDER: **1310-19653**
DATE RECEIVED: 10/2/13

001 Site: Influent — Date Sampled: 10/2/13 Time: 7:40

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
BOD-5day	66	mg/L	SM18 5210B	10/2/13 12:19	N BEB	A	
Solids, Total Suspended	22.4	mg/L	SM20 2540D	10/2/13	N AAS	A	

002 Site: Effluent — Date Sampled: 10/2/13 Time: 7:40

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
BOD-5day	8.5	mg/L	SM18 5210B	10/2/13 12:22	N BEB	A	
Phosphorus, Total	4.7	mg/L	EPA 365.1	10/5/13	N JGM	A	
Solids, Total Suspended	3.2	mg/L	SM20 2540D	10/2/13	N AAS	A	

Test results comply with all NELAC requirements unless otherwise noted. This Laboratory Report includes the client's COC sample documentation and shall not be reproduced except in full, without written approval of the laboratory.

315 New York Road
Suite 85
Plattsburgh, NY 12903
Phone (518)563-1720
Fax (518)563-0052
info@endynelabs.com
ELAP #11892

ENDYNE INC.
Plattsburgh

LAB USE ONLY
Due Date: OCT 16 2013

E-MAILED OCT 09 2013

Client Town of Jay
Mailing Address PO Box 730, AuSable Forks, NY 12912

Contact Person Chris Garrow
Phone (518) 578-0429
Email Address jayhwysupt@jaydpw.com
Fax (518) 946-1259

Account # 200566
Project Name To Jay WWTF
Quote #
PO #

Fax/Email (+$3) (Y) N

Page 1 of 1

SAMPLE SUPPLY INFORMATION
Water Source Waste Water (Town of Jay)
PWS # N/A
SPDES # 0201910
Collection Address WWTP Town of Jay
State NY
Collector's Name Chet Pulsifer

SAMPLE MATRIX CODES
DW=drinking water SW=Surface Water
WW=waste water SD=solid
MW=monitoring well SO=soil
HW=hazardous waste SL=sludge

Compliance Monitoring? (Y) N
Repeat Samples ? Y N
Check Samples ? Y N

TURNAROUND TIME REQUESTED
Standard XXX
RUSH Due Date (Charges Apply)
Special
Lab Manager RUSH Approval

CLIENT'S SAMPLE IDENTIFICATION	Date/Time	Composite/Grab	Matrix	Type	Bottle Type/Vol.	Preservative	BOD, TSS	T. Phosphorus	Lab Use Only Sample #
Influent	10-2-13 7:45am	N/A	WW	G	1/2 gal	None	X		001
Effluent	10-2-13 7:45am	N/A	WW	G	1/2 gal	None	X	CL2 1.0 pH=7.0	002
Effluent	10-2-13 7:45am	N/A	WW	G	270mL	H2SO4		X	002

Client Instructions/Comments/Special Requirements:

Samples that the Endyne, Inc Labs are not ELAP accredited for will be subcontracted to a NYS accredited lab.

SAMPLE RECEIPT (Lab Use Only)	Date	Time	Samples Relinquished by (SIGN HERE)	Samples Received By	Initials
On Ice Y N	10/9/13	0829	Chet Pulsifer	BB	
Temperature 7.9°C			Chet Pulsifer	EMAILED	
Seal Intact Y N N/A					
No. of Containers 3					
Lab Custody Notes					

Work Order Id Nos 1310-19053

OFFICE USE ONLY:
Analytical Fee $ [illegible] Payment Rec'd ☐ Cash ☐ Check ☐ MO ☐ Charge Account ☐ Check Amt/ Receipt #

NATIONAL POLLUTANT DISCHARGE ELIMINATION [illegible]

DISCHARGE MONITORING REPORT (DMR)

OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: JAY (T)

ADDRESS: PO BOX 730, 11 SCHOOL ST
AUSABLE FORKS, NY 12912-0730

FACILITY: AUSABLE FORKS COMM WWTF

LOCATION: 215 GROVE ROAD
AUSABLE FORKS, NY 12912

COPY

NY0201910	001-M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
10/1/2013	10/31/2013

DMR Mailing ZIP CODE: 12941

MINOR
(SUBR 05)
WWTP OUTFALL
External Outfall

No Discharge ☐

ATTN: CHRISTOPHER GARROW

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Flow rate	SAMPLE MEASUREMENT	0.016	******	MGD	******	******	******	******	0	99/99	RC
00056 1 0 Effluent Gross	PERMIT REQUIREMENT	147 30DA ARI	******	MGD	******	******	******	******		Continuous	RCORDR
BOD, 5-day, 20 deg. C	SAMPLE MEASUREMENT	0.2	0.2	lb/D	******	8.5	8.5	mg/L	0	01/31	GR
00310 1 0 Effluent Gross	PERMIT REQUIREMENT	37 MO AVG	55 7 DA AVG	lb/d	******	30 MO AVG	45 7 DA AVG	mg/L		Monthly	GRAB
pH	SAMPLE MEASUREMENT	******	******	******	7.6	******	7.9	SU	0	01/01	GR
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	6 MINIMUM	******	9 MAXIMUM	SU		Daily	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	0.1	0.1	lb/D	******	3.2	3.2	mg/L	0	01/31	GR
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	85 MO AVG	128 7 DA AVG	lb/d	******	70 MO AVG	105 7 DA AVG	mg/L		Monthly	GRAB
Solids, settleable	SAMPLE MEASUREMENT	******	******	******	******	******	<0.1	mL/L	0	01/01	GR
00545 1 0 Effluent Gross	PERMIT REQUIREMENT	******	******	******	******	******	3 DAILY MX	mL/L		Daily	GRAB
Phosphorus, total [as P]	SAMPLE MEASUREMENT	1.51	******	lb/D	******	4.7	******	mg/L	0	01/31	GR
00665 1 0 Effluent Gross	PERMIT REQUIREMENT	4.47 ROLL AVG	******	lb/d	******	Req. Mon 30DA AVG	******	mg/L		Monthly	GRAB
BOD, 5-day, percent removal	SAMPLE MEASUREMENT	******	******	******	96	******	******	%	0	01/31	CA
81010 K 0 Percent Removal	PERMIT REQUIREMENT	******	******	******	85 MO AV MN	******	******	%		Monthly	CALCTD

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Chris Garrow	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	Chris Garrow	518-946-7170		11-21-13
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

THE PHOSPHORUS ROLLING AVERAGE IS THE 12 MONTH ROLLING AVERAGE. IT SHALL BE COMPUTED AS FOLLOWS: THE SUM OF THE CURRENT MONTH'S (AND THE PAST 11 MONTH'S) 30 DAY ARITHMETIC MEAN IN LBS/DAY DIVIDED BY 12

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

Form Approved
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

NAME: JAY (T)

ADDRESS: PO BOX 730, 11 SCHOOL ST
AUSABLE FORKS, NY 12912-0730

FACILITY: AUSABLE FORKS COMM WWTF

LOCATION: 215 GROVE ROAD
AUSABLE FORKS, NY 12912

ATTN: CHRISTOPHER GARROW

NY0201910	001-M
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
10/1/2013	10/31/2013

DMR Mailing ZIP CODE: 12941
MINOR
(SUBR 05)
WWTP OUTFALL
External Outfall

No Discharge ☐

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Solids, suspended percent removal	SAMPLE MEASUREMENT	******	******	******	98	******	******	%	0	01/31	CA
81011 K 0 Percent Removal	PERMIT REQUIREMENT	******	******	******	85 MO AV MN	******	******	%		Monthly	CALCTD

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE
Chris Garrow	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	518-946-7170		11-21-13
TYPED OR PRINTED			AREA Code	NUMBER	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

THE PHOSPHORUS ROLLING AVERAGE IS THE 12 MONTH ROLLING AVERAGE. IT SHALL BE COMPUTED AS FOLLOWS: THE SUM OF THE CURRENT MONTH'S (AND THE PAST 11 MONTH'S) 30 DAY ARITHMETIC MEAN IN LBS/DAY DIVIDED BY 12.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER

WASTEWATER FACILITY OPERATION REPORT FOR THE MONTH OF October, 2013

SPDES PERMIT NO. NY-0201910 | FACILITY NAME: Ausable Forks WWTF | FACILITY OWNER: Jay ⓣ / Black Brook ⓣ | FACILITY LOCATION: 215 Grove RD. Ausable Forks N.Y. 12912

Day	Date	Daily Precip In/day	VOLUME OF WASTEWATER TREATED Inst. Max MGD	Daily Ave. MGD	inst. Min. MGD	TEMPERATURE (C ⁰F) Influent (2)	Effluent (2)	pH (S.U.) Influent Minimum	Influent Maximum	Effluent Minimum	Effluent Maximum	SETTLEABLE SOLIDS (ml/l) Influent Maximum	Effluent Maximum	B.O.D., (mg/l) Influent Type	Effluent Type	SUSPENDED SOLIDS (mg/l) Influent Type	Effluent Type
	1		0.052	0.049	0.040	17.2	16.8		7.2		7.7						
	2		0.048	0.003	0.000	17.6	17.6		7.2		7.7	0.1	<0.1				
	3		0.000	0.000	0.000							0.1	<0.1	66	8.5	22.4	3.2
	4																
	5																
	6																
	7																
	8																
	9																
	10																
	11																
	12																
	13																
	14																
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	20																
	21																
	22																
	23																
	24																
	25																
	26																
	27																
	28																
	29		0.000	0.000	0.000												
	30		0.005	0.002	0.000		13.5										
	31		0.019	0.011	0.005		10.0				7.6		<0.1				
											7.9		<0.1				
		Total Precip		Monthly Average		Monthly Average Influent	Effluent	Min Influent	Max Monthly Effluent	Min Influent	Max Effluent	Monthly Maximum	Monthly Maximum	30 day arithmetic mean (1) Inf.(mg/l)	Eff.(mg/l)	%Rem.	30 day arithmetic mean (1) Inf.(mg/l)	Eff.(mg/l)	%Rem.
				0.016		17.4	14.5	7.2	7.6	7.2	7.9	0.1	<0.1	200	8.5	96	200	3.2	98
												30 Day Average Quantity Loading (1)		0.2 lbs/day			0.08 lbs/day		

(1) Refer to February 2002 edition of *DMR Manual for Completing the Discharge Monitoring Report for the State Pollutant Discharge Elimination System (SPDES)* for procedures to calculate loadings, arithmetic mean, geometric mean, maximum, minimum, percent removal, etc.

(2) If temperature is measured more than once a day, report the average for day.

NOTE: Refer to current SPDES permit for specific monitoring requirements. Sample type for temperatura, pH end settleable solids is grab.

0.1

FACILITY MAILING ADDRESS (Street, City, State, Zip Code)	TELEPHONE NUMBER	CHIEF OPERATOR'S NAME	CERTIFICATION GRADE
Jay ⓣ P.O. Box 730 11 School St. Au Sable Forks N.Y. 12912	(518) 647-2204	Chester Pulsifer	1

Day	Date	TOTAL PHOSPHORUS(mg/l) Influent Type	TOTAL PHOSPHORUS(mg/l) Effluent Type	CHLORINE RESIDUAL Effluent mg/l Minimum	CHLORINE RESIDUAL Effluent mg/l Maximum	FECAL COLIFORM Effluent MF or MPN/100 ml		REMARKS Enter any other comments, observations, operating problems, equipment failure, etc.
	1							Lagoons #1 and #2 were previously cleaned, aerators repaired, liner patched.
	2		4.7					Started refilling Lagoon #2
	3							No out going flow to river Because of refilling Lagoon #2
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							flow just started to go over weir to river
	31							First good Day of flow to river Clear effluent

30 day arithmetic mean (1) Influent(mg/l)	30 day arithmetic mean (1) Effluent(mg/l)	Monthly Minimum (1)	Monthly Maximum (1)	30 day Geometric Mean (1)
	4.7			
	0.17 lbs/day			

(1) Refer to February 2002 edition of *DMR Manual for Completing the Discharge Monitoring Report for the State Pollutant Discharge Elimination System (SPDES)* for procedures to calculate loadings, arithmetic mean, geometric mean, maximum, minimum, percent removal, etc.

NOTE: Refer to current SPDES permit for specific monitoring requirements. Sample type for chlorine residual and fecal coliform is grab.

Effect on Receiving Stream

NAME OF RECEIVING STREAM			
DATE	STATION	PARAMETER	RESULT

TRUCKED WASTE RECEIVED THIS MONTH		
1. Septage, holding tank waste and portable toilet waste		
	Total	Max day
Volume (gallons)		
2. All other wastes		
	Total	Max day
Volume (gallons)		
3. Number of Part 364 haulers currently approved to transport wastes to this POTW		
a. Septage, etc.		
b. All others		

Name and amount of chemicals used in treatment process during month:		
a.	Chlorine	lbs.
b.		lbs.
c.		lbs.
d.		lbs.
e.		lbs.
f.		lbs.

Amount of electrical power consumed:		
a.	Commercial	kilowatt hours
b.	Stand-by	kilowatt hours

Amount of fuel consumed:		
a.	Natural Gas	cubic feet
b.	Oil	gallons
c.	Gasoline	gallons
d.	Coal	tons
e.	Digester Gas	cubic feet
f.	Propane	gallons

Sludge removal from plant:		
a.	Amount	cu.yds
b.	Solid Content	%
c.	Volatile Solids Content	%
d.	Disposal Site	

Other Solid Wastes		
a.	Screenings	cubic feet
b.	Grit	cubic feet
c.	Ashes	tons
d.		
e.		
f.		
g.	Disposal Site	
h.	Digester Gas Wasted	cubic feet

Labor Expended:

POSITION NAME	NUMBER FULL TIME	NUMBER PART TIME	TOTAL HOURS
Chief Operator	1		
Assistant Operator		1	
Operator in Trainig	1		

I certify under penalty of the law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Principal Executive Officer or Authorized Agent

1-21-13

Date

Appendix S

2020 Adopted Sewer Budgets –
Town of Jay and Town of Black Brook

TOWN OF JAY 2020 SEWER

2020 SEWER BUDGET	Appropriations	Debt Service	Total	Revenues	Unexpended	Total Raised by Tax
	$ 89,766.00	$ 49,600.00	$ 139,366.00	$ 83,913.00	$ 30,000.00	$ 25,453.00
Sewer Bond Balance	$ 147,000.00					
Term	38 years					
Date Issued	5-Nov-91					
Interest Rate	5.875%					
Town of Jay Users	227					
Multipliers						
(billed quarterly)	Not for Profit	$ 50.00				
	Single Dwelling	$ 75.00				
	Vacant Land	$ 25.00				
Multi family dwellings-$75 for first unit plus $50 fo	each additional					

Town Of Black Brook

18 N. Main Street
AUSABLE FORKS, NY 12912
(518) 647-5411 Fax: (518) 647-1294

Operating Statement for the Period Ending 1/31/2020

Current		Monthly Amount	Year - To - Date Amount	Budget	Variance	% Var
Fund: SEWER DISTRICT #1 SS1						
Expenses						
APPROPRIATION ACCOUNT						
81101.7	8110.1 - Administration PS	$192.50	$192.50	$2,400.00	2,207.50	92.0%
81104.7	8110.4 - Administration CE	$5.07	$5.07	$4,500.00	4,494.93	99.9%
81201.7	8120.1 - Sanitary Sewers PS	$527.16	$527.16	$6,853.00	6,325.84	92.3%
81202.7	8120.2 - Sanitary Sewers EQ	$0.00	$0.00	$1,000.00	1,000.00	100.0%
81204.7	8120.4 - Sanitary Sewers CE	$420.58	$420.58	$3,500.00	3,079.42	88.0%
81304.7	8130.4 - Treat.Disp CE	$340.84	$340.84	$15,000.00	14,659.16	97.7%
90108.7	9010.8 - State Retirement	$0.00	$0.00	$1,573.00	1,573.00	100.0%
90308.7	9030.8 - Social Security (Town Share)	$54.15	$54.15	$708.00	653.85	92.4%
90408.7	9040.8 - Workers Comp	$397.77	$397.77	$1,200.00	802.23	66.9%
90608.7	9060.8 - Medical Insuance	$11.92	$11.92	$2,185.17	2,173.25	99.5%
97206.7	9720.6 - Statutory Installment Bonds- Principal	$0.00	$0.00	$8,000.00	8,000.00	100.0%
97207.7	9720.7 - Statutory Installment Bonds- Interest	$0.00	$0.00	$3,000.00	3,000.00	100.0%
	Subtotal for APPROPRIATION ACCOUNT:	**$1,949.99**	**$1,949.99**	**$49,919.17**	**47,969.18**	**96.1%**
	Subtotal for Expenses	**$1,949.99**	**$1,949.99**	**$49,919.17**	**47,969.18**	**96.1%**
Other Income						
REVENUE ACCOUNT						
2120.7	2120 - Sewer Rents	$0.00	$0.00	$47,948.17	47,948.17	100.0%
2128.7	2128 - Interests & Penalties	$0.00	$0.00	$100.00	100.00	100.0%
2401.7	2401 - Interest & Earnings	$0.00	$0.00	$1,871.00	1,871.00	100.0%
	Subtotal for REVENUE ACCOUNT:	**$0.00**	**$0.00**	**$49,919.17**	**49,919.17**	**100.0%**
	Subtotal for Other Income	**$0.00**	**$0.00**	**$49,919.17**	**49,919.17**	**100.0%**
	Net Amounts	**($1,949.99)**	**($1,949.99)**	**$0.00**	**$1,949.99**	**0.0%**

Appendix T

Engineering Report Certification

Engineering Report Certification

To Be Provided by the Professional Engineer Preparing the Report

During the preparation of this Engineering Report, I have studied and evaluated the cost and effectiveness of the processes, materials, techniques, and technologies for carrying out the proposed project or activity for which assistance is being sought from the New York State Clean Water State Revolving Fund. In my professional opinion, I have recommended for selection, to the maximum extent practicable, a project or activity that maximizes the potential for efficient water use, reuse, recapture, and conservation, and energy conservation, taking into account the cost of constructing the project or activity, the cost of operating and maintaining the project or activity over the life of the project or activity, and the cost of replacing the project and activity.

Title of Engineering Report: Town of Jay, Au Sable Forks WWTP Improvements

Date of Report: May 2020

Professional Engineer's Name: Michael D. Panichelli, P.E.

Signature: 

Date: May 8, 2020

NEW YORK STATE OF OPPORTUNITY. | Department of Health | Environmental Facilities Corporation

Smart Growth Assessment Form

This form should be completed by the applicant's project engineer or other design professional.[1]

Applicant Information

Applicant: Town of Jay Project No.:

Project Name: Ausable Forks WWTP Improvements

Is project construction complete? ☐ Yes, date: ☐ No

Project Summary: (provide a short project summary in plain language including the location of the area the project serves)

Improvements to the Town of Jay and Town of Black Brook jointly owned wastewater treatment plant to comply with current and planned SPDES Permit Limits.

Section 1 – Screening Questions

1. Prior Approvals

1A. Has the project been previously approved for EFC financial assistance? ☐ Yes ☐ No

1B. If so, what was the project number(s) for the prior approval(s)? Project No.:

Is the scope of the project substantially the same as that which was approved? ☐ Yes ☐ No

IF THE PROJECT WAS PREVIOUSLY APPROVED BY EFC'S BOARD AND THE SCOPE OF THE PROJECT HAS NOT MATERIALLY CHANGED, THE PROJECT IS **NOT** SUBJECT TO SMART GROWTH REVIEW. SKIP TO SIGNATURE BLOCK.

2. New or Expanded Infrastructure

2A. Does the project add new wastewater collection/new water mains or a new wastewater treatment system/water treatment plant? ☐ Yes ☐ No

Note: A new infrastructure project adds wastewater collection/water mains or a wastewater treatment/water treatment plant where none existed previously

2B. Will the project result in either: ☐ Yes ☐ No

An increase of the State Pollutant Discharge Elimination System (SPDES) permitted flow capacity for an existing treatment system;

OR

An increase such that a NYSDEC water withdrawal permit will need to be obtained or modified, or result in the NYSDOH approving an increase in the capacity of the water treatment plant?

Note: An expanded infrastructure project results in an increase of the SPDES permitted flow capacity for the wastewater treatment system, or an increase of the permitted water withdrawal or the permitted flow capacity for the water treatment system.

[1] If project construction is complete and the project was not previously financed through EFC, an authorized municipal representative may complete and sign this assessment.

IF THE ANSWER IS "NO" TO BOTH "2A" and "2B" ON THE PREVIOUS PAGE, THE PROJECT IS NOT SUBJECT TO FURTHER SMART GROWTH REVIEW. SKIP TO SIGNATURE BLOCK.

3. Court or Administrative Consent Orders

3A. Is the project expressly required by a court or administrative consent order? ☐ Yes ☐ No

3B. If so, have you previously submitted the order to NYS EFC or DOH? If not, please attach. ☐ Yes ☐ No

Section 2 – Additional Information Needed for Relevant Smart Growth Criteria

EFC has determined that the following smart growth criteria are relevant for EFC-funded projects and that projects must meet each of these criteria to the extent practicable:

1. Uses or Improves Existing Infrastructure

1A. Does the project use or improve existing infrastructure? ☐ Yes ☐ No

Please describe:

2. Serves a Municipal Center

Projects must serve an area in either 2A, 2B or 2C to the extent practicable.

2A. Does the project serve an area **limited** to one or more of the following municipal centers?

i. A City or incorporated Village ☐Yes ☐No

ii. A central business district ☐Yes ☐No

iii. A main street ☐Yes ☐No

iv. A downtown area ☐Yes ☐No

v. A Brownfield Opportunity Area ☐Yes ☐No
(for more information, go to www.dos.ny.gov & search "Brownfield")

vi. A downtown area of a Local Waterfront Revitalization Program Area ☐Yes ☐No
(for more information, go to www.dos.ny.gov and search "Waterfront Revitalization")

vii. An area of transit-oriented development ☐Yes ☐No

viii. An Environmental Justice Area ☐Yes ☐No
(for more information, go to www.dec.ny.gov/public/899.html)

ix. A Hardship/Poverty Area ☐Yes ☐No
Note: Projects that primarily serve census tracts and block numbering areas with a poverty rate of at least twenty percent according to the latest census data

Please describe all selections:

2B. If the project serves an area located outside of a municipal center, does it serve an area located adjacent to a municipal center which has clearly defined borders, designated for concentrated development in a municipal or regional comprehensive plan and exhibit strong land use, transportation, infrastructure and economic connections to an existing municipal center? ☐Yes ☐No

Please describe:

2C. If the project is not located in a municipal center as defined above, is the area designated by a comprehensive plan and identified in zoning ordinance as a future municipal center? ☐Yes ☐No

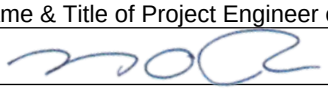
Please describe and reference applicable plans:

3. Resiliency Criteria

3A. Was there consideration of future physical climate risk due to sea-level rise, storm surge, and/or flooding during the planning of this project? ☐Yes ☐No

Please describe:

Signature Block: By entering your name in the box below, you agree that you are authorized to act on behalf of the applicant and that the information contained in this Smart Growth Assessment is true, correct and complete to the best of your knowledge and belief.

Applicant: Town of Jay	Phone Number: 518-647-2204
Michael D. Panichelli, P.E., President	
(Name & Title of Project Engineer or Design Professional or Authorized Municipal Representative)	
	May 8, 2020
(Signature)	(Date)

Appendix V

Responses to
NYSDEC Engineering Report Comments

Engineering and Land Surveying, P.C.

1533 Crescent Road
Clifton Park, NY 12065
Phone: 518.371.0799
Fax: 518.371.0822
mjelspc@mjels.com
mjels.com

May 8, 2020

Ms. Kelly Duval, P.E.
Division of Water
NYS Department of Environmental conservation

RE: Preliminary Engineering Report
Au Sable Forks Community WWTF
State Pollution Discharge Elimination System (SPDES) No. NY 0201910
Jay (T), Essex County

Dear Ms. Duval:

Provided below are responses to comments provided by the NYSDEC in the letter dated April 22, 2020 regarding the Engineering Report submitted for improvements to the Au Sable Forks Community WWTF.

1. Please have the report cover stamped and signed by a licensed, Professional Engineer.

   - **Response: Stamp/Signature has been added.**

2. Section 2.4 states that the current phosphorus loading limit of 4.47 lb/day as a 12-month rolling average (MRA) will be replaced with a monthly average concentration of 1.0 mg/L upon permit renewal in 2023. This is not correct. A monthly average concentration limit for total phosphorus will be added to the SPDES permit, in addition to the existing loading limits 4.47 lb/d as a 12 MRA. The loading limit will not be removed from the permit.

   - **Response: Section has been revised for clarity that a new concentration limit will be added and the existing load limit will remain.**

3. Section 2.4. As indicated in the correspondence in Appendix B, last summer the Department notified the Town that the Department was developing a plan was to add phosphorus concentration limits to municipal wastewater treatment facilities in the Lake Champlain Basin. The Department was considering adding a phosphorus concentration limit of 1.0 mg/L at the Au Sable Forks Community WWTF and would facilitate an optimization study of the plant to determine how the effluent phosphorus concentration limit could be met. Since then, the Department has continued to evaluate the implementation of phosphorus concentration limits at municipal facilities in the Lake Champlain Basin. Currently, the Department plans to first proceed with the optimization studies and determine what effluent phosphorus concentration limit the plants are currently able to meet. Upon Department review and approval of the optimization study, the suggested phosphorus concentration will be added to the SPDES permit.

   - **Response: Discussion of limit determination following completion of an optimization study has been added. For purposes of this report, the Departments initial targeted 1.0 mg/L concentration limit was utilized.**

4. Section 2.4. The Department anticipates the SPDES permit will be modified in 2020, not 2023. This modification will incorporate the effluent limit changes for the 2017 Lake Champlain Basin reclassification of the receiving waterbody, as well as adding a compliance schedule for the optimization study for phosphorus.

   - **Response: Section has been revised with permit modification in 2020. Schedule of compliance for performing optimization study is now discussed relative to Comment 3, concentration limit.**

5. Section 2.4 states that the permit modification will include numerical ammonia limits. The Department provided the seasonal limits to MJ Engineering to aid in design, but the modified SPDES permit will only require monitoring of ammonia concentration and loading without a numeric limit for this permit term.

   - **Response: Section has been updated for clarity that the modified permit will require monitoring only. For purposes of this report, the targeted summer and winter limits provided by the Department were utilized.**

6. Section 4.2.3. Section 8.3.4.1 of TR-16 provides typical ranges for UV transmittance and dosage. Please provide documentation, including sample results, that the proposed UV system will effectively treat the current discharge. This information may be provided in a final engineering report if it is not currently available.

   - **Response: Acknowledged and this information will be provided in the final engineering report.**

7. Section 4.2.3. Ten States Standards Section 104.1 discusses ultraviolet disinfection process design relative to being able to perform properly over the entire projected design flow range. Please discuss if the system will be able to operate under current flow conditions and the projected future design flow.

   - **Response: Discussion added to 1st paragraph of Section.**

     The UV system is designed to handle the peak (instantaneous) flow from the influent pump station and considered conservative due to the hydraulic dampening provide from the lagoons. The 5,200 gpd additional future flows will not require an increase in the influent pump station capacity and therefore will not impact the sizing of the UV system.

     The duty UV bank will operate effectively under all flow conditions up to the peak flow. The inlet end of the UV channel will be designed to reduce turbulence and short circuiting thru UV units. The fixed weir at the end of the channel will provide a maximum headless of 0.5" at the peak flow which keeps the water level in the UV channel consistent over the complete flow range. In addition, the constant submergence keeps the lamps cool and allows the UV system to operate continuously regardless of flow.

8. Section 4.2.3. Please discuss if the UV unit will have bypass capability and dewatering capability.

   - **Response: The energy dissipating inlet/entrance end of the UV channel will be lower than the channel floor and can function as a sump to facilitate draining/cleaning of the UV channel via a small portable pump for return to the lagoons. The channel will be easy to clean as it will be 1 feet wide with an operating depth of 5.5-inches. It is anticipated that the channel can effectively be cleaned without the need to bypass, however, the design contingency included in the project cost will allow for a bypass to be added. It is noted that bypass and dewatering are not required for removal of the UV units from the channel.**

     Providing bypass and/or dewatering capability to facilitate channel cleaning has been added at the end of the 3rd paragraph in Section 4.2.3.

9. Section 7.0 states that there will be an additional energy usage associated with increasing the lagoon aeration blowers. The addition of the UV system will also result in increased energy usage. Please confirm that the new generator installed in 2019 is capable of supplying power to the entire plant, including the proposed upgrades.

   - **Response: The new 80 kW generator was purposely oversized to provide spare capacity, and is adequately sized to handle both existing WWTP loads and additional new electrical loads associated with this project.**

     Cummins generator sizing software was utilized to confirm generator capacity requirements (i.e. 80 kW). Please find enclosed the generator sizing report which includes a list of the associated WWTP electrical load inputs. All existing loads are accounted for in the generator sizing including both influent pumps to ensure no backups occur. Loads excluded from the generator sizing include new Aeration Blower #3 and UV Bank #2 which are standby units and will not be called to operate automatically in conjunction with the duty units.

If you have any questions or concerns, please do not hesitate to contact this office at (518) 371-0799 or contact Carrie Dooley directly at carriedooley@mjels.com.

Sincerely,

Michael D. Panichelli, P.E.
President

Enclosures: Generator Sizing Report

Power Generation

Recommended Generator Report - C80D6C ← Recommended generator is 80 kW

Project - Ausable Forks Community WWTF

Comments -

Project Requirements

Frequency, Hz	: 60.0	**Generators Running in Parallel**	: 1
Duty	: Standby	**Site Altitude, ft(m)**	: 700(213)
Voltage	: 120/208, Parallel Wye	**Site Temperature, °C**	: 32
Phase	: 3	**Max. Altr Temp Rise, °C**	: 125
Fuel	: Diesel	**Project Voltage Distortion Limit, %**	: 10
Emissions	: No Preference		

Calculated Individual Generator Set Load Running and Peak Requirements

Running kW	: 52.4	**Max. Step kW**	: 110.3 In Step 1	**Cumulative Step kW**	: 110.3
Running kVA	: 61.8	**Max. Step kVA**	: 152.6 In Step 1	**Cumulative Step kVA**	: 152.6
Running PF	: 0.85	**Peak kW**	: None	**Cumulative Peak kW**	: None
Running NLL kVA	: 20.7	**Peak kVA**	: None	**Cumulative Peak kVA**	: None
Alternator kW	: 69.6			**Pct Rated Capacity**	: 65.0

Generator Set Configuration

Alternator	: UCD2G	**Engine**	: QSB5-G13
BCode	: B946	**Fuel**	: Diesel
Excitation	: PMG	**Displacement, cu in. (Litre)**	: 272.0(4.5)
Voltage Range	: 220/440-240/480	**Cylinders**	: 4
Number of Leads	: 6	**Altitude Knee, ft(m)**	: 4750(1448)
Reconnectable	: Yes	**Altitude Slope, % per 1000ft(304.8m)**	: 2
Full Single Phase Output	: No	**Temperature Knee, °F(°C)**	: 104(40)
Increased Motor Starting	: No	**Temperature Slope, % per 18°F(10.0°C)**	: 16
Extended Stack	: No	**Emissions**	: *
		Cooling Package	: High Ambient

***Note: Consult your Cummins Power Generation Distributor for more information.**

Set Performance

Running At	: 65.0% Rated Capacity
Max. Step Voltage Dip, %	: 32
Max. Step Frequency Dip, %	: 16
Peak Voltage Dip, %	:
Peak Frequency Dip, %	:
Site Rated Standby kW/kVA	: 80 / 100
Site Rated Max. SkW	: 95
Max. SkVA	: 306
Temp Rise at Full Load, °C	: 120
Voltage Distortion	: 3.9
Site Rated Max Step kW Limit	:

Load Requirements

Max. Allowed Step Voltage Dip	: 35 In Step 1
Max. Allowed Step Frequency Dip	: 16 In Step 1
Peak Voltage Dip Limit %	: 35.0
Peak Frequency Dip Limit %	: 16
Running kW	: 52.4
Running kVA	: 61.8
Effective Step kW	: 89.3
Effective Step kVA	: 152.6
Percent Non-Linear Load	: 36.0
Voltage Distortion Limit	: 10
Max Step kW	:

*Note: Higher temperature rise at full rated load.

*Note: All generator set power derates are based on open generator sets.

Power Generation

Loads Summary Report

Project - Jay WWTP

Comments -

Project Requirements

Frequency, Hz	: 60.0	**Generators Running in Parallel**	: 1
Duty	: Standby	**Site Altitude, ft(m)**	: 700(213)
Voltage	: 120/208, Parallel Wye	**Site Temperature, °C**	: 32
Phase	: 3	**Max. Altr Temp Rise, °C**	: 125
Fuel	: Diesel	**Project Voltage Distortion Limit, %**	: 10
Emissions	: No Preference		

Loads Summary List

***Note: Detailed Loads and Step Report available below**

Step No.	Load Name	Quantity	Running		Starting		Peak		Dip Limits, %		VTHD% Limit
			kW	kVA	kW	kVA	kW	kVA	Vdip	Fdip	
Step01	Aeration Blower 1	1	8.29	9.21	8.29	9.21	None	None	35.0	16.0	10.0
Step01	Aeration Blower 2	1	8.29	9.21	8.29	9.21	None	None	35.0	16.0	10.0
Step01	Air Compressor	1	2.3	2.95	15.2	19.0	None	None	35.0	16.0	0.0
Step01	Existing 3kW Unit Heater 1	1	3.0	3.75	3.0	3.75	None	None	35.0	16.0	0.0
Step01	Existing 3kW Unit Heater 2	1	3.0	3.75	3.0	3.75	None	None	35.0	16.0	0.0
Step01	Influent Pump 1	1	4.44	5.22	22.88	37.5	None	None	35.0	16.0	0.0
Step01	Influent Pump 2	1	4.44	5.22	22.88	37.5	None	None	35.0	16.0	0.0
Step01	Lighting and Ventilation (Existing & Proposed)	1	3.22	3.39	3.22	3.39	None	None	35.0	16.0	0.0
Step01	New 3kW Unit Heater	1	3.0	3.75	3.0	3.75	None	None	35.0	16.0	0.0
Step01	New 5kW Unit Heater	1	5.0	6.25	5.0	6.25	None	None	35.0	16.0	0.0
Step01	Outlets, Instrumentation, and Alarms	1	1.74	2.17	1.74	2.17	None	None	35.0	16.0	0.0
Step01	Septic Receiving Station	1	0.4	0.5	0.4	0.5	None	None	35.0	16.0	0.0
Step01	UV Bank 1	1	2.04	2.27	1.53	1.8	None	None	35.0	16.0	10.0
Step01	Water Heater	1	1.65	2.06	1.65	2.06	None	None	35.0	16.0	0.0
Step01	Well Pump	1	1.59	2.06	10.18	12.73	None	None	35.0	16.0	0.0
Step Summary			52.0	62.0	110.0	153.0	None	None	35.0	16.0	10.0

Project Summary	Running		Max Starting		Cumulative Step		Cumulative Peak		Project VTHD% Limit
	kW	kVA	kW	kVA	kW	kVA	kW	kVA	
	52.4	61.8	110.3	152.6	110.3	152.6	0.0	0.0	10.0

***Note: Detailed Loads and Step Report available below**

Power Generation

Loads and Steps Detail Report

Project - Jay WWTP

Comments -

Project Requirements

Frequency, Hz	: 60.0	**Generators Running in Parallel**	: 1
Duty	: Standby	**Site Altitude, ft(m)**	: 700(213)
Voltage	: 120/208, Parallel Wye	**Site Temperature, °C**	: 32
Phase	: 3	**Max. Altr Temp Rise, °C**	: 125
Fuel	: Diesel	**Project Voltage Distortion Limit, %**	: 10
Emissions	: No Preference		

Calculated Individual Generator Set Load Running and Peak Requirements

Running kW	: 52.4	**Max. Step kW**	: 110.3 In Step 1	**Cumulative Step kW**	: 110.3
Running kVA	: 61.8	**Max. Step kVA**	: 152.6 In Step 1	**Cumulative Step kVA**	: 152.6
Running PF	: 0.85	**Peak kW**	: None	**Cumulative Peak kW**	: None
Running NLL kVA	: 20.7	**Peak kVA**	: None	**Cumulative Peak kVA**	: None
Alternator kW	: 69.6				

Step1

Calculated Individual Generator Set Step Load Requirements

Running kW	: 52.0	**Starting kW**	: 110.0	**Cumulative Step kW**	: 110.0
Running kVA	: 62.0	**Starting kVA**	: 153.0	**Cumulative Step kVA**	: 153.0
Running Amps	: 172.0	**Starting Non-linear kVA**	: 20.0		
Running Non-linear kVA	: 21.0				
Alternator kW	: 69.6				
Voltage Distortion Limit for step	: 10				

Aeration Blower 1 Three Phase Quantity : 1 In this Step

Category : Motor

Running kW	: 8.29	**Starting kW**	: 8.29	**Peak kW**	: None
Running kVA	: 9.21	**Starting kVA**	: 9.21	**Peak kVA**	: None
Running PF	: 0.9	**Starting PF**	: 0.9	**Cyclic**	: No
Running Amps	: 25.59	**Max. % Voltage Dip**	: 35.0	**Max. % Frequency Dip**	: 16.0
Running NLL kVA	: 9.21				
Starting NLL kVA	: 9.21			**Voltage**	: 208
Alternator kW	: 16.58				

Shaft Hp	: 10.0	**Type**	: Variable Frequency Drive
Shaft kW	: 7.46	**Ramp Details**	: None
Rectifier Type	: 6 pulse	**THDI %**	: 26
Efficiency (%)	: 0.9	**THDV %**	: 10

Load Factor : 100.0

Aeration Blower 2 Three Phase Quantity : 1 In this Step

Category : Motor

Running kW	: 8.29	**Starting kW**	: 8.29	**Peak kW**	: None
Running kVA	: 9.21	**Starting kVA**	: 9.21	**Peak kVA**	: None
Running PF	: 0.9	**Starting PF**	: 0.9	**Cyclic**	: No
Running Amps	: 25.59	**Max. % Voltage Dip**	: 35.0	**Max. % Frequency Dip**	: 16.0
Running NLL kVA	: 9.21				
Starting NLL kVA	: 9.21			**Voltage**	: 208
Alternator kW	: 16.58				

Shaft Hp	: 10.0	**Type**	: Variable Frequency Drive
Shaft kW	: 7.46	**Ramp Details**	: None
Rectifier Type	: 6 pulse	**THDI %**	: 26
Efficiency (%)	: 0.9	**THDV %**	: 10
Load Factor	: 100.0		

Air Compressor Single Phase Quantity : 1 In this Step

Category : Motor

Running kW	: 2.3	**Starting kW**	: 15.2	**Peak kW**	: None
Running kVA	: 2.95	**Starting kVA**	: 19.0	**Peak kVA**	: None
Running PF	: 0.78	**Starting PF**	: 0.8	**Cyclic**	: No
Running Amps	: 24.58	**Max. % Voltage Dip**	: 35.0	**Max. % Frequency Dip**	: 16.0
Alternator kW	: 2.3			**Voltage**	: 120

Shaft Hp	: 2.0	**Method**	: Capacitor Start, Induction Run
Shaft kW	: 1.49		
Efficiency (%)	: 0.65	**LRkVA Factor**	: 9.5
Design	: Capacitor Start, Induction Run	**LRkVA Code**	: L
Load Factor	: 100.0		

Existing 3kW Unit Heater 1 Three Phase Quantity : 1 In this Step

Category : User Defined

Running kW	: 3.0	**Starting kW**	: 3.0	**Peak kW**	: None
Running kVA	: 3.75	**Starting kVA**	: 3.75	**Peak kVA**	: None
Running PF	: 0.8	**Starting PF**	: 0.8	**Cyclic**	: No
Running Amps	: 10.42	**Max. % Voltage Dip**	: 35.0	**Max. % Frequency Dip**	: 16.0
Alternator kW	: 3.0			**Voltage**	: 208

Existing 3kW Unit Heater 2 Three Phase Quantity : 1 In this Step

Category : User Defined

Running kW	: 3.0	**Starting kW**	: 3.0	**Peak kW**	: None
Running kVA	: 3.75	**Starting kVA**	: 3.75	**Peak kVA**	: None
Running PF	: 0.8	**Starting PF**	: 0.8	**Cyclic**	: No
Running Amps	: 10.42	**Max. % Voltage Dip**	: 35.0	**Max. % Frequency Dip**	: 16.0
Alternator kW	: 3.0			**Voltage**	: 208

Influent Pump 1 Three Phase Quantity : 1 In this Step

Category : Motor

Running kW	: 4.44	**Starting kW**	: 22.88	**Peak kW**	: None
Running kVA	: 5.22	**Starting kVA**	: 37.5	**Peak kVA**	: None
Running PF	: 0.85	**Starting PF**	: 0.61	**Cyclic**	: No
Running Amps	: 14.51	**Max. % Voltage Dip**	: 35.0	**Max. % Frequency Dip**	: 16.0
Alternator kW	: 4.44			**Voltage**	: 208

Shaft Hp	: 5.0	**Method**	: Across the line
Shaft kW	: 3.73	**Low Inertia**	: No
Efficiency (%)	: 0.84	**LRkVA Factor**	: 7.5
Design	: Standard NEMA Design B,C or D	**LRkVA Code**	: J
Load Factor	: 100.0		

Influent Pump 2 Three Phase Quantity : 1 In this Step

Category : Motor

Running kW	: 4.44	**Starting kW**	: 22.88	**Peak kW**	: None
Running kVA	: 5.22	**Starting kVA**	: 37.5	**Peak kVA**	: None
Running PF	: 0.85	**Starting PF**	: 0.61	**Cyclic**	: No
Running Amps	: 14.51	**Max. % Voltage Dip**	: 35.0	**Max. % Frequency Dip**	: 16.0
Alternator kW	: 4.44			**Voltage**	: 208

Shaft Hp	: 5.0	**Method**	: Across the line
Shaft kW	: 3.73	**Low Inertia**	: No
Efficiency (%)	: 0.84	**LRkVA Factor**	: 7.5
Design	: Standard NEMA Design B,C or D	**LRkVA Code**	: J
Load Factor	: 100.0		

Lighting and Ventilation (Existing & Proposed) Single Phase Quantity : 1 In this Step

Category : Light - Fluorescent

Running kW	: 3.22	**Starting kW**	: 3.22	**Peak kW**	: None
Running kVA	: 3.39	**Starting kVA**	: 3.39	**Peak kVA**	: None
Running PF	: 0.95	**Starting PF**	: 0.95	**Cyclic**	: No
Running Amps	: 28.25	**Max. % Voltage Dip**	: 35.0	**Max. % Frequency Dip**	: 16.0
Alternator kW	: 3.22			**Voltage**	: 120

New 3kW Unit Heater Single Phase Quantity : 1 In this Step

Category : User Defined

Running kW	: 3.0	**Starting kW**	: 3.0	**Peak kW**	: None
Running kVA	: 3.75	**Starting kVA**	: 3.75	**Peak kVA**	: None
Running PF	: 0.8	**Starting PF**	: 0.8	**Cyclic**	: No
Running Amps	: 31.25	**Max. % Voltage Dip**	: 35.0	**Max. % Frequency Dip**	: 16.0
Alternator kW	: 3.0			**Voltage**	: 120

New 5kW Unit Heater Single Phase Quantity : 1 In this Step

Category : User Defined

Running kW	: 5.0	**Starting kW**	: 5.0	**Peak kW**	: None

Running kVA	: 6.25	**Starting kVA**	: 6.25	**Peak kVA**	: None
Running PF	: 0.8	**Starting PF**	: 0.8	**Cyclic**	: No
Running Amps	: 52.08	**Max. % Voltage Dip**	: 35.0	**Max. % Frequency Dip**	: 16.0
Alternator kW	: 5.0			**Voltage**	: 120

Outlets, Instrumentation, and Alarms Single Phase Quantity : 1 In this Step

Category : User Defined

Running kW	: 1.74	**Starting kW**	: 1.74	**Peak kW**	: None
Running kVA	: 2.17	**Starting kVA**	: 2.17	**Peak kVA**	: None
Running PF	: 0.8	**Starting PF**	: 0.8	**Cyclic**	: No
Running Amps	: 18.12	**Max. % Voltage Dip**	: 35.0	**Max. % Frequency Dip**	: 16.0
Alternator kW	: 1.74			**Voltage**	: 120

Septic Receiving Station Single Phase Quantity : 1 In this Step

Category : User Defined

Running kW	: 0.4	**Starting kW**	: 0.4	**Peak kW**	: None
Running kVA	: 0.5	**Starting kVA**	: 0.5	**Peak kVA**	: None
Running PF	: 0.8	**Starting PF**	: 0.8	**Cyclic**	: No
Running Amps	: 4.17	**Max. % Voltage Dip**	: 35.0	**Max. % Frequency Dip**	: 16.0
Alternator kW	: 0.4			**Voltage**	: 120

UV Bank 1 Single Phase Quantity : 1 In this Step

Category : Light - Discharge

Running kW	: 2.04	**Starting kW**	: 1.53	**Peak kW**	: None
Running kVA	: 2.27	**Starting kVA**	: 1.8	**Peak kVA**	: None
Running PF	: 0.9	**Starting PF**	: 0.85	**Cyclic**	: No
Running Amps	: 18.89	**Max. % Voltage Dip**	: 35.0	**Max. % Frequency Dip**	: 16.0
Running NLL kVA	: 2.27				
Starting NLL kVA	: 1.8			**Voltage**	: 120
Alternator kW	: 2.66				

Water Heater Single Phase Quantity : 1 In this Step

Category : User Defined

Running kW	: 1.65	**Starting kW**	: 1.65	**Peak kW**	: None
Running kVA	: 2.06	**Starting kVA**	: 2.06	**Peak kVA**	: None
Running PF	: 0.8	**Starting PF**	: 0.8	**Cyclic**	: No
Running Amps	: 17.19	**Max. % Voltage Dip**	: 35.0	**Max. % Frequency Dip**	: 16.0
Alternator kW	: 1.65			**Voltage**	: 120

Well Pump Single Phase Quantity : 1 In this Step

Category : Motor

Running kW	: 1.59	**Starting kW**	: 10.18	**Peak kW**	: None
Running kVA	: 2.06	**Starting kVA**	: 12.73	**Peak kVA**	: None
Running PF	: 0.77	**Starting PF**	: 0.8	**Cyclic**	: No
Running Amps	: 17.17	**Max. % Voltage Dip**	: 35.0	**Max. % Frequency Dip**	: 16.0
Alternator kW	: 1.59			**Voltage**	: 120

Shaft Hp	: 1.34	**Method**	: Capacitor Start, Induction Run
Shaft kW	: 1.0		
Efficiency (%)	: 0.63	**LRkVA Factor**	: 9.5
Design	: Capacitor Start, Induction Run	**LRkVA Code**	: L
Load Factor	: 100.0		

Power Generation

Steps and Dips Details Report

Project - Jay WWTP

Project Requirements

Frequency, Hz	: 60.0	**Generators Running in Parallel**	: 1
Duty	: Standby	**Site Altitude, ft(m)**	: 700(213)
Voltage	: 120/208, Parallel Wye	**Site Temperature, °C**	: 32
Phase	: 3	**Max. Altr Temp Rise, °C**	: 125
Fuel	: Diesel	**Project Voltage Distortion Limit, %**	: 10
Emissions	: No Preference		

Calculated Individual Generator Set Load Running and Peak Requirements

Running kW	: 52.4	**Max. Step kW**	: 110.3 In Step 1	**Cumulative Step kW**	: 110.3
Running kVA	: 61.8	**Max. Step kVA**	: 152.6 In Step 1	**Cumulative Step kVA**	: 152.6
Running PF	: 0.85	**Peak kW**	: None	**Cumulative Peak kW**	: None
Running NLL kVA	: 20.7	**Peak kVA**	: None	**Cumulative Peak kVA**	: None
Alternator kW	: 69.6				

Generator Set Configuration

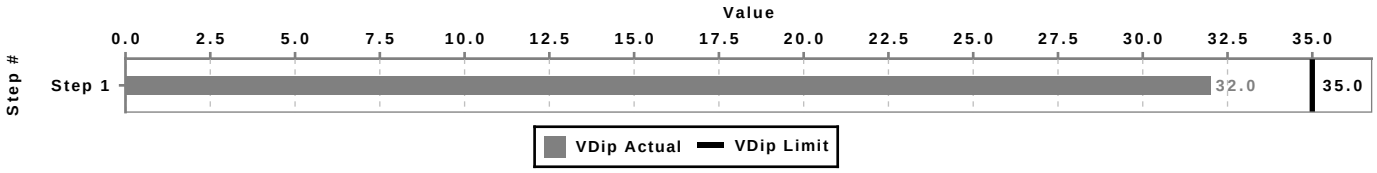
Model	: C80D6C	**Alternator**	: UCD2G
Engine Model	: QSB5-G13	**Excitation**	: PMG
Fuel	: Diesel		High Ambient

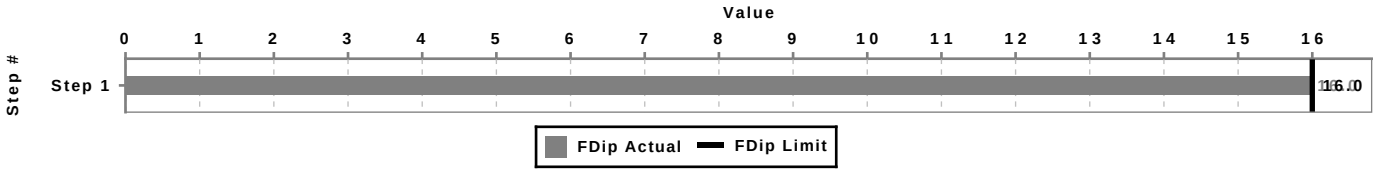
Step Level Dips Summary

Step #	Voltage Dip Limit (%)	Expected Step Voltage Dip (%)	Voltage Recovery Time (s) **	Frequency Dip Limit (%)	Expected Frequency Dip (%)	Frequency recovery Time (s) **
1	35	32	2.5	16	16	3.6

Note: Please refer to the model Spec. sheet for bandwidths used to report recovery times. For products manufactured in the United Kingdom it may be assumed that recovery times are based on ISO8528-5 G2 class bandwidths. Voltage and frequency recovery times are estimates. Typically, allow five to ten seconds between application of load steps when designing your system.

**Please note that in some cases the voltage and frequency recovery time estimates are not shown in list. This is a result of "dummy" data points temporarily being used to fill data gaps in the GenSize database. Please disregard these blank results.


Value
0.0 2.5 5.0 7.5 10.0 12.5 15.0 17.5 20.0 22.5 25.0 27.5 30.0 32.5 35.0
Step #
Step 1
32.0
35.0
VDip Actual
VDip Limit


Value
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Step #
Step 1
16.0
FDip Actual
FDip Limit

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Office of Environmental Quality, Region 5
232 Golf Course Road, Warrensburg, NY 12885
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www.dec.ny.gov

Sent Via Email Only

April 22, 2020

Honorable Archie Depo
Supervisor, Town of Jay
11 School St, P.O. Box 730
Au Sable Forks, NY 12912
supervisor@townofjayny.gov

RE: Preliminary Engineering Report
Au Sable Forks Community WWTF
State Pollutant Discharge Elimination System (SPDES)
No. NY0201910
Jay (T), Essex County

Dear Supervisor Depo:

The Department has reviewed the preliminary engineering report, titled, "Engineering Report for Au Sable Forks WWTF Improvements," dated March 2020, prepared by MJ Engineering and Land Surveying, P.C., and has the following comments. The report was reviewed in accordance with the 2014 edition of the *Recommended Standards for Wastewater Facilities* ("Ten States Standards") and TR-16. Please have your engineering consultant provide a reply and forward it to me.

1. Please have the report cover stamped and signed by a licensed, Professional Engineer.

2. Section 2.4 states that the current phosphorus loading limit of 4.47 lb/day as a 12-month rolling average (MRA) will be replaced with a monthly average concentration of 1.0 mg/L upon permit renewal in 2023. This is not correct. A monthly average concentration limit for total phosphorus will be added to the SPDES permit, in addition to the existing loading limits 4.47 lb/d as a 12 MRA. The loading limit will not be removed from the permit.

3. Section 2.4. As indicated in the correspondence in Appendix B, last summer the Department notified the Town that the Department was developing a plan was to add phosphorus concentration limits to municipal wastewater treatment facilities in the Lake Champlain Basin. The Department was considering adding a phosphorus concentration limit of 1.0 mg/L at the Au Sable Forks Community WWTF and would facilitate an optimization study of the plant to determine how the effluent

phosphorus concentration limit could be met. Since then, the Department has continued to evaluate the implementation of phosphorus concentration limits at municipal facilities in the Lake Champlain Basin. Currently, the Department plans to first proceed with the optimization studies and determine what effluent phosphorus concentration limit the plants are currently able to meet. Upon Department review and approval of the optimization study, the suggested phosphorus concentration will be added to the SPDES permit.

4. Section 2.4. The Department anticipates the SPDES permit will be modified in 2020, not 2023. This modification will incorporate the effluent limit changes for the 2017 Lake Champlain Basin reclassification of the receiving waterbody, as well as adding a compliance schedule for the optimization study for phosphorus.

5. Section 2.4 states that the permit modification will include numerical ammonia limits. The Department provided the seasonal limits to MJ Engineering to aid in design, but the modified SPDES permit will only require monitoring of ammonia concentration and loading without a numeric limit for this permit term.

6. Section 4.2.3. Section 8.3.4.1 of TR-16 provides typical ranges for UV transmittance and dosage. Please provide documentation, including sample results, that the proposed UV system will effectively treat the current discharge. This information maybe provided in a final engineering report if it is not currently available.

7. Section 4.2.3. Ten States Standards Section 104.1 discusses ultraviolet disinfection process design relative to being able to perform properly over the entire projected design flow range. Please discuss if the system will be able to operate under current flow conditions and the projected future design flow.

8. Section 4.2.3. Please discuss if the UV unit will have bypass capability and dewatering capability.

9. Section 7.0 states that there will be an additional energy usage associated with increasing the lagoon aeration blowers. The addition of the UV system will also result in increased energy usage. Please confirm that the new generator installed in 2019 is capable of supplying power to the entire plant, including the proposed upgrades.

Please note that a final engineering report, plans, and specifications must be submitted to the Department for review and approval prior to the start of construction. A SPDES permit modification may also be necessary. Please contact Rebecca Smith in the Division of Environmental Permits (Rebecca.smith@dec.ny.gov) to discuss.

I can be reached at (518) 623-1272 or via email at kelly.duval@dec.ny.gov if you have any questions or concerns.

Sincerely,

Kelly Duval, P.E.
Professional Engineer 1
Division of Water

ec: J. Zalewski, NYSDEC
R. Streeter, NYSDEC
R. Smith, NYSDEC
J. Denno, EFC
J. Geiger, EFC
M. Drislane, MJ Engineering, mdrislane@mjels.com

REPORT ADDENDUM
DATED 7/13/2021

Engineering and Land Surveying, P.C.

1533 Crescent Road
Clifton Park, NY 12065
Phone: 518.371.0799
Fax: 518.371.0822
mjelspc@mjels.com
mjels.com

July 13, 2021

Ms. Kelly Duval, P.E.
Division of Water
NYS Department of Environmental Conservation
232 Golf Course Road
Warrensburg, NY 12885

RE: Addendum to Approved Preliminary Engineering Report (EPG 81077)
Au Sable Forks Community WWTF
SPDES Permit: NY 0201910
Jay (T), Essex County
MJ1075.04

Dear Ms. Duval:

This addendum is being issued for the preliminary engineering report titled "Engineering Report for Au Sable Forks WWTF Improvements" which was previously approved by the NYSDEC on July 13, 2020 (see Attachment A). It provides an update on the recommended alternatives and associated project cost to comply with effluent disinfection and phosphorous limits in the Town of Jay's (Town) SPDES permit. Further, as the Town's current SPDES permit (ExDP 01/31/2026) does not include an ammonia limit (monitoring only), nitrification upgrades to the lagoons (associated with recommended Alternative 1D) are not being advanced at this time.

1. UPDATED RECOMMENDED ALTERNATIVES

Provided below are the updated recommended alternatives for the project.

Secondary Treatment: Recommended Alternative 1D

- Lagoon upgrades are not included in the current (revised) Project scope.

  - ~~Removals:~~
    - ~~Lagoon components including liners, curtain baffle, air piping, air diffusers and aeration blowers. Accumulated sludge to be transferred to existing reed beds.~~
  - ~~Lagoon Upgrades:~~
    - ~~60 mil liners (30 year life) and protective sand bedding, both lagoons~~
    - ~~Floating curtain baffle (Lagoon No. 2)~~
    - ~~Four (4) HDPE fixed film media curtains (Lagoon No. 2)~~
    - ~~Floating cover (polishing cell, Lagoon No. 2)~~
      - ~~Modular HDPE geomembrane cover, 20-year service life~~
    - ~~New HDPE air supply piping~~
    - ~~New Air Diffusers~~
      - ~~Lagoon No.1: Eighteen (18) retrievable fine bubble diffused air assemblies~~
      - ~~Lagoon No. 2: Eight (8) retrievable fine bubble diffused air assemblies~~
    - ~~Aeration Blowers~~
      - ~~Quantity: Three (2 duty, 1 standby)~~
      - ~~Type: Rotary Lobe, Positive Displacement Type~~
      - ~~Capacity (each): 165 CFM, 10 HP~~

- Phosphorous removal, effluent flow monitoring and electrical service upgrade remain in the current Project scope, as follows:

  - Chemical Feed Building: Phosphorous Removal
    - 6-feet wide x 12-feet long insulated fiberglass structure with electric unit heater and forced ventilation
  - Poly-aluminum chloride Chemical Feed System: Phosphorous Removal
    - Skid-mounted duplex chemical feed pumps

  - Containment pallet for three (3) 55-gallon PAC chemical drums
  - Chemical Injection Point: Influent pump station valve vault
  - Chemical Pump Operation: Interlocked with influent pump station
- Effluent Flow Monitoring:
  - Packaged, fiberglass metering manhole with 6-inch Parshall flume and ultrasonic level sensor, located downstream of existing effluent chamber.
  - Flow totalizer and chart recorder in existing control building.

Effluent Disinfection: Recommended Alternative 2C

- No change to recommended Alternative 2C.

2. UPDATED PROJECT COST

Provided in Table 1 below is the updated project cost based on the revised project scope outline in Item No. 1 – Updated Recommended Alternatives. Refer to Attachment B for detailed cost and life cycle estimates.

TABLE 1
UPDATED OPINION OF PROBABLE PROJECT COST (Revised July 2, 2021)

Recommended Alternative	Project Cost	Δ Annual O&M [1]
Alternative 1D – Lagoon Upgrades [2]	$ 890,000	$ 9,300
Alternative 2C – Ultraviolet (UV) [3]	$ 710,000	$ 3,300
Total	**$ 1,600,000**	**$ 12,600**

Notes
[1] Represents change (increase or decrease) in current annual O&M costs (as present value) associated with Alternative.

[2] Lagoon upgrades not included in the current (revised) Alternative 1D project scope. Phosphorous removal, effluent flow monitoring and electrical service upgrades remain as part of the Alternative 1D project scope.

[3] No change to Alternative 2C project cost or annual O&M cost.

The Au Sable Forks Community WWTF is jointly owned by the Town of Jay and Town of Black Brook (Towns'). If the project is financed with a 30-year loan at an assumed 3.5% market rate interest, the resulting levelized annual debt service will be $87,000 as shown in Table 2 below. The combined total increase in annual sewer fund appropriations for the Towns' will be $99,600 and includes the increase in annual O&M expenses associated with the improvements. The resulting increase in annual sewer service charge per user will be approximately +$281.36/yr.

TABLE 2 2020 ADOPTED SEWER BUDGET & PROJECTED SEWER SERVICE CHARGES (Revised July 2, 2021)	
TOWN OF JAY SEWER BUDGET & CURRENT USER COST	
Adopted 2020 Sewer Fund Revenue	$83,913
- Unexpended	$30,000
- Total Raised by Tax	$25,453
Total	**$139,366**
Adopted 2020 Sewer Fund Appropriations	
- O&M, Administrative Expenses	$89,766
- Debt Service	$49,600
Total	**$139,366**
2020 Sewer Service Charges	
# of Users	227
Annual Service Charge per User	**$613.95**
TOWN OF BLACK BROOK BUDGET & CURRENT USER COST	
Adopted 2020 Sewer Fund Revenue	$47,948.17
- Interests & Penalties	$100
- Interest & Earnings	$1,871
Total	**$49,919.17**
Adopted 2020 Sewer Fund Appropriations	
- O&M, Administrative Expenses	$38,919.17
- Statutory Installment Bonds - Principal & Interest	$11,000
Total	**$49,919.17**
2020 Sewer Service Charges	
# of Users	127
Annual Service Charge per User	**$393.06**
PROJECT AND USER COST IMPACTS (Revised July 2,2021)	
Total Project Cost	**$1,600,000.00**
- Levelized Annual Debt Service (30 Yr Loan @ 3.5%)	$87,000.00
- Increase in Annual O&M (as present value)	$12,600
Total Annual Increase - Sewer Fund Appropriations	**$99,600.00**
- Total # of Users (Jay and Black Brook)	354
- Annual Increase in Service Charge per User	**$281.36**
(T) Jay Projected Annual Service Charge per User	$895.31
(T) Black Brook Projected Annual Service Charge per User	$674.42

If you have any questions or concerns, please do not hesitate to contact Matt Drislane at (518) 371-0799 or mdrislane@mjels.com.

Sincerely,

Michael D. Panichelli, P.E.
President

CC:
Archie Depo, Town of Jay Supervisor
Rob Wick, PMP; Essex County Community Resources

Attach:
A. NYSDEC "Engineering Report for Au Sable Forks WWTF Improvements" approval letter dated July 13, 2020.
B. Detailed Cost Estimates and Life Cycle Analysis

Attachment A

NYSDEC “Engineering Report for Au Sable Forks WWTF Improvements” approval letter dated July 13, 2020

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Office of Environmental Quality, Region 5
232 Golf Course Road, Warrensburg, NY 12885
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Sent Via Email Only

July 13, 2020

Honorable Archie Depo
Supervisor, Town of Jay
11 School St, P.O. Box 730
Au Sable Forks, NY 12912
supervisor@townofjayny.gov

RE: Preliminary Engineering Report
Au Sable Forks Community WWTF
State Pollutant Discharge Elimination System (SPDES)
No. NY0201910
Jay (T), Essex County

Dear Supervisor Depo:

The Department has reviewed the revised preliminary engineering report, titled, "Engineering Report for Au Sable Forks WWTF Improvements," dated May 2020, prepared by MJ Engineering and Land Surveying, P.C. The report was reviewed in accordance with the 2014 edition of the *Recommended Standards for Wastewater Facilities* ("Ten States Standards") and TR-16.

This Department does not assume responsibility for the design of the project, that being the responsibility of your design engineer. Our review was limited to sanitary standards rather than a complete detailed review of the design. Further, this approval does not negate the need to obtain other necessary permits or approvals prior to construction.

Please note that a final engineering report, plans, and specifications must be submitted to the Department for review and approval prior to the start of construction.

I can be reached at (518) 623-1272 or via email at kelly.duval@dec.ny.gov if you have any questions or concerns.

Sincerely,

Kelly Duval, P.E.
Professional Engineer 1
Division of Water

ec: J. Zalewski, NYSDEC
R. Streeter, NYSDEC
E. Donhauser, NYSDEC
J. Denno, EFC
J. Geiger, EFC
M. Drislane, MJ Engineering, mdrislane@mjels.com

Attachment B

Detailed Cost Estimates
and Life Cycle Analysis

OPINION OF PROBABLE PROJECT COST: ALTERNATIVE 1D - LAGOON UPGRADES
(Revised July 2, 2021 -Phosphorous Removal, Effluent Flow Monitoring & Electrical Upgrades only)

ITEM	QTY	UNIT	MATERIAL	LABOR	UNIT COST	TOTAL COST
Phosphorus Removal						
Skid Mounted Chemical Dosing System	1	LS	$ 15,000	$ 5,000	$ 20,000	$ 20,000
Chemical Injection Line	1	LS	$ 1,000	$ 4,000	$ 5,000	$ 5,000
8 ft wide x 12 ft long fiberglass building, complete	1	LS	$ 35,000	$ 10,000	$ 45,000	$ 45,000
Effluent Flow Metering						
Ultrasonic Sensor, Metering MH and Recorder	1	LS	$ 20,000	$ 8,000	$ 28,000	$ 28,000
Site Work						
Site & Process Piping	1	LS	$ 20,000	$ 35,000	$ 55,000	$ 55,000
Grading	1	LS	$ 10,000	$ 15,000	$ 25,000	$ 25,000
Topsoil and Seed	700	SF	$ 1.25	$ 1.00	$ 2.25	$ 1,575
Pavement Overlay						
- Asphalt Surface Treatment	1150	SY	$ 1.50	$ 2.00	$ 3.50	$ 4,025
- Asphalt - Top Coarse	140	TON	$ 90	$ 30	$ 120	$ 16,800
Sediment & Erosion Control Measures w/Maintenance	1	LS	$ 1,500	$ 3,000	$ 4,500	$ 4,500
Electric Work	1	LF	$ 160,000	$ 125,000	$ 285,000	$ 285,000
					SUBTOTAL	**$ 489,900**
					Escalation to Construction Start (6%)	$ 29,400
					General Conditions (10%)	$ 49,000
					Contractor Overhead & Profit (15%)	$ 73,500
					Design Contingency / Field Order Allowance (20%)	$ 98,000
					TOTAL CONSTRUCTION COST	**$ 739,800**
					Legal, Admin, Engineering (20%)	$ 148,000
					TOTAL PROJECT COST (ALTERNATIVE 1D)	**$ 887,800**
					SAY	**$ 890,000**

OPINION OF PROBABLE PROJECT COST ALTERNATIVE 2C- ULTRAVIOLET (UV)						
ITEM	**QTY**	**UNIT**	**MATERIAL**	**LABOR**	**UNIT COST**	**TOTAL COST**
Mobilization	1	LS		$ 10,000	$ 10,000	$ 10,000
Disinfection						
8 ft wide x 14 ft long fiberglass building, complete	1	LS	$ 40,000	$ 15,000	$ 55,000	$ 55,000
Concrete Channels and Building Foundation	50	CY	$ 300	$ 700	$ 1,000	$ 50,000
UV Disinfection Equipment & Controls	1	LS	$ 60,000	$ 25,000	$ 85,000	$ 85,000
Fiberglass Grating	1	LS	$ 2,000	$ 2,500	$ 4,500	$ 4,500
Earthwork - Backfill/Grading	1	LS	$ 2,500	$ 10,000	$ 12,500	$ 12,500
Site Work						
Site & Process Piping	1	LS	$ 40,000	$ 25,000	$ 65,000	$ 65,000
Excavation and Bedding	1	LS	$ 10,000	$ 15,000	$ 25,000	$ 25,000
Fill and Grading	1	LS	$ 10,000	$ 5,000	$ 15,000	$ 15,000
Topsoil and Seed	750	SF	$ 1.25	$ 1.00	$ 2.25	$ 1,688
Pavement						
- 12-inch subbase	110	CY	$ 25	$ 40	$ 65	$ 7,150
- Asphalt - Binder	60	TON	$ 90	$ 30	$ 120	$ 7,200
- Asphalt - Top Coarse	40	TON	$ 90	$ 30	$ 120	$ 4,800
- Geotextile Filter Fabric	310	SY	$ 3.00	$ 1.00	$ 4.00	$ 1,240
Sediment & Erosion Control Measures w/Maintenance	1	LS	$ 1,500	$ 3,000	$ 4,500	$ 4,500
Electric Work	1	LF	$ 15,000	$ 25,000	$ 40,000	$ 40,000
					SUBTOTAL	**$ 388,578**
					Escalation to Construction Start (6%)	$ 23,300
					General Conditions (10%)	$ 38,900
					Contractor Overhead & Profit (15%)	$ 58,300
					Design Contingency / Field Order Allowance (20%)	$ 77,700
					TOTAL CONSTRUCTION COST	**$ 586,778**
					Legal, Admin, Engineering (20%)	$ 117,400
					TOTAL PROJECT COST (ALTERNATIVE 2C)	**$ 704,178**
					SAY	**$ 710,000**

ALTERNATIVE 1D (Revised July 2, 2021)
LIFE CYCLE COST

Initial Expenses - Construction	Qty	Unit	Unit Cost	Total Cost	Present Value
Alternative 1D Project Cost	1	LS	$890,000	$890,000	**$890,000**

Future Maintenance Expenses (Non-Annually Recurring Costs)

	Current Base Cost	# of Years to Occurrence	Inflation Rate	Future Cost [1]	Interest Rate	Present Value [2]
Phosphrous Removal						
Yr 7 - Chemical Feed Pump Replacement	$2,500	7	3.0%	$3,075	3.5%	$2,417
Yr 14 - Chemical Feed Pump Replacement	$2,500	14	3.0%	$3,781	3.5%	$2,336
Yr 21 - Chemical Feed Pump Replacement	$2,500	21	3.0%	$4,651	3.5%	$2,258
Yr 28 - Chemical Feed Pump Replacement	$2,500	28	3.0%	$5,720	3.5%	$2,183
Subtotal - Future Maintenance Costs				$17,227		**$9,194**
					SAY	**$10,000**

Future Operational Costs [3]	Qty	Unit	Current Unit Cost	Current Base Cost	UPV[4]	Present Value
PAC Chemical Usage	1,278	gal/yr	$10.00	$12,775	21.00	$268,269
					SAY	**$270,000**

Total Costs	Present Value
Initial Expense	$890,000
Future Maintenance Costs	$10,000
Future Operational Costs	$270,000
Total Life Cycle Cost	**$1,170,000**

Notes

[1] Future Cost = Current Base Cost x $(1+i)^n$ Where; i = inflation rate, n = number of years to occurrence

[2] Present Value = Future Cost x $[1 / (1+d)^n]$ Where; d = interest rate, n = number of years to occurrence

[3] Polyaluminum chloride (PAC) chemical usage based on 3.5 gpd at average day flows and loads

[4] Uniform Present Value (UPV) for determining present value of annual energy costs over a 30 year period derived as follows:

$$UPV = \left(\frac{1+e}{d-e}\right)\left[1-\left(\frac{1+e}{1+d}\right)^{N}\right]$$

Where;
e = escalation rate (@ 1%)
d = interest rate (@ 3.5%)
N = number of timer periods for annual occurrence (30 years)

ALTERNATIVE 2C
LIFE CYCLE COST

Initial Expenses - Construction	Qty	Unit	Unit Cost	Total Cost	Present Value
Alternative 2C Project Cost	1	LS	$710,000	$710,000	**$710,000**

Future Maintenance Expenses (Non-Annually Recurring Costs) [3]

UV Equipment	Current Base Cost	# of Years to Occurrence	Inflation Rate	Future Cost [1]	Interest Rate	Present Value [2]
Yr 2.75 - Lamp Replacement	$1,320	2.75	3.0%	$1,432	3.5%	$1,303
Yr 5 - Intensity Sensors Replacement	$2,000	5.00	3.0%	$2,319	3.5%	$1,952
Yr 5.5 - Lamp Replacement	$1,320	5.50	3.0%	$1,553	3.5%	$1,285
Yr 8.25 - Lamp Replacement	$1,320	8.25	3.0%	$1,685	3.5%	$1,268
Yr 10 - Intensity Sensors Replacement	$2,000	10.00	3.0%	$2,688	3.5%	$1,905
Yr 10 - Air Compressor Replacement	$1,000	10.00	3.0%	$1,344	3.5%	$953
Yr 11 - Lamp Replacement	$1,320	11.00	3.0%	$1,827	3.5%	$1,252
Yr 13.75 - Lamp Replacement	$1,320	13.75	3.0%	$1,982	3.5%	$1,235
Yr 15 - Intensity Sensors Replacement	$2,000	15.00	3.0%	$3,116	3.5%	$1,860
Yr 15 - Controls Rehab	$10,000	15.00	3.0%	$15,580	3.5%	$9,299
Yr 16.5 - Lamp Replacement	$1,320	16.50	3.0%	$2,150	3.5%	$1,219
Yr 19.25 - Lamp Replacement	$1,320	19.25	3.0%	$2,332	3.5%	$1,203
Yr 20 - Intensity Sensors Replacement	$2,000	20.00	3.0%	$3,612	3.5%	$1,815
Yr 20 - Air Compressor Replacement	$1,000	20.00	3.0%	$1,806	3.5%	$908
Yr 22 - Lamp Replacement	$1,320	22.00	3.0%	$2,529	3.5%	$1,187
Yr 24.75 - Lamp Replacement	$1,320	24.75	3.0%	$2,743	3.5%	$1,171
Yr 25 - Intensity Sensors Replacement	$2,000	25.00	3.0%	$4,188	3.5%	$1,772
Yr 27.5 - Lamp Replacement	$1,320	27.50	3.0%	$2,976	3.5%	$1,155
Subtotal - Future Maintenance Costs				$55,860		**$32,741**
					SAY	**$40,000**

Future Operational Costs [4]	Qty	Unit	Current Unit Cost	Current Base Cost	UPV[5]	Present Value
UV Electrical Consumption	17,870	kWh / Yr	$0.14	$2,502	21.00	$52,538
					SAY	**$60,000**

Total Costs	Present Value
Initial Expense	$710,000
Future Maintenance Costs	$40,000
Future Operational Costs	$60,000
Total Life Cycle Cost	**$810,000**

Notes

[1] Future Cost = Current Base Cost x $(1+i)^n$ Where; i = inflation rate, n = number of years to occurrence

[2] Present Value = Future Cost x $[1 / (1+d)^n]$ Where; d = interest rate, n = number of years to occurrence

[3] Lamp replacement based on 12 lamps per bank, 2 banks total, each bank operates 4,380 hrs/yr and lamps are rated for 12,000 hours. Lamp Service Life = 12,000 hr / 4,380 hrs per year = 2.75 yrs per lamp

[4] Annual energy consumption based on 1 bank (12 lamps) operational 24/7 at 2.04 kW/hr.

[5] Uniform Present Value (UPV) for determining present value of annual energy costs over a 30 year period derived as follows:

$$UPV = \left(\frac{1+e}{d-e}\right)\left[1-\left(\frac{1+e}{1+d}\right)^{N}\right]$$

Where;
e = escalation rate (@ 1%)
d = interest rate (@ 3.5%)
N = number of timer periods for annual occurrence (30 years)

APPENDIX C: REFERENCES

CERTIFICATION OF EXPERIENCE

I, _____ HEREBY CERTIFY THAT (COMPANY _____

_____ HAS PERFORMED THE FOLLOWING WORK WITHING THE LAST

THREE YEARS **UNLESS SPECIFIED DIFFERENTLY IN THE SPECIFICATION**:

NAMES OF BUSINESS: _____ CONTACT NAME: _____

ADDRESS: _____

AMOUNT OF CONTRACT: _____ TELEPHONE NO.: _____

TYPE OF WORK: _____ FAX NO.: _____

EMAIL ADDRESS:

NAMES OF BUSINESS: _____ CONTACT NAME: _____

ADDRESS: _____

AMOUNT OF CONTRACT: _____ TELEPHONE NO.: _____

TYPE OF WORK: _____ FAX NO.: _____

EMAIL ADDRESS:

NAMES OF BUSINESS: _____ CONTACT NAME: _____

ADDRESS: _____

AMOUNT OF CONTRACT: _____ TELEPHONE NO.: _____

TYPE OF WORK: _____ FAX NO.: _____

EMAIL ADDRESS:

NAMES OF BUSINESS: _____ CONTACT NAME: _____

ADDRESS: _____

AMOUNT OF CONTRACT: _____ TELEPHONE NO.: _____

TYPE OF WORK: _____ FAX NO.: _____

EMAIL ADDRESS:

NAMES OF BUSINESS: _____ CONTACT NAME: _____

ADDRESS: _____

AMOUNT OF CONTRACT: _____ TELEPHONE NO.: _____

TYPE OF WORK: _____ FAX NO.: _____

EMAIL ADDRESS:

NAMES OF BUSINESS: _____ CONTACT NAME: _____

ADDRESS: _____

AMOUNT OF CONTRACT: _____ TELEPHONE NO.: _____

TYPE OF WORK: EMAIL ADDRESS: _____ FAX NO.: _____

APPENDIX D: CONFLICT OF INTEREST STATEMENT

APPENDIX D: CONFLICT OF INTEREST STATEMENT

_____ ("Respondent")

Conflict of Interest Statement

The owner(s), corporate members or employees of [Respondent], shall derive any personal profit or gain, directly or indirectly, by reason of his or her participation with the [the Town of Lewis]. Each individual shall disclose to the [the Town of Lewis] any personal interest or direct relationship which he or she may have and shall refrain from participation in any decision making in related manners.

Any owner, corporate member or employee of [Respondent] who is an officer, board member, a committee member or staff member of a related organization shall identify his or her affiliation with such agency or agencies; further, in connection with any policy committee or board action specifically associated with [the Town of Lewis], he/she shall not participate in the decision affecting that entity and the decision must be made and/or ratified by the full board. At this time, I am a Board member, a committee member, or an employee of the following organizations/companies:

_____

_____

_____

Now this is to certify that I, except as described below, am not now nor at any time during the past year have been:
1) A participant, directly or indirectly, in any arrangement, agreement, investment, or other activity with any vendor, supplier, or other party; doing business with the [the Town of Lewis] which has resulted or could result in person benefit to me.
2) A recipient, directly or indirectly, of any salary payments or loans or gifts of any kind or any free service or discounts or other fees from or on behalf of any person or organization engaged in any transaction with the [the Town].
Any exceptions to 1 or 2 above are stated below with a full description of the transactions and of the interest, whether direct or indirect, which I have (or have had during the past year) in the persons or organizations having transactions with the [the Town of Lewis].

_____

_____

_____

Respondent: _____

Date: _____

Signature: _____

Printed name: _____

Address: _____

Telephone: _____

APPENDIX E: CERTIFICATE OF AUTHORITY

CERTIFICATE OF AUTHORITY

I, _____
(Officer other than officer executing proposal documents)

certify that I am the _____ of the _____
(Title) (Name of Contractor)

_____ a corporation, duly organized and in good standing under the

_____
(Law under which organized, e.g., the New York Business Corporation Law)

named in the foregoing agreement; that _____
(Person executing proposal documents)

who signed said agreement on behalf of the Contractor was, at the time of execution,

_____ of the Contractor; that said agreement was duly signed for
(Title of such person)

and in behalf of said Contractor by authority of its Board of Directors, thereunto duly authorized, and that such authority is in full force and effect at the date hereof.

_____
Signature

Corporate Seal

STATE OF NEW YORK) SS.:
COUNTY OF ESSEX)

On this _____ day of _____, 20____, before me personally came _____ _____ to me known, and known to me to be the _____ (Title) of _____ the corporation described in and which executed the above certificate, who being by me duly sworn did depose and say that he, the said ____ _____ resides at _____, and that he is _____ _____ of said corporation and knows the corporate seal of the said corporation; that the seal affixed to the above certificate is such corporate seal and that it was so affixed by order of the Board of Directors of said corporation, and that he signed his name thereto by like order.

_____
Notary Public

County

APPENDIX F: VENDOR RESPONSIBILITY QUESTIONNAIRE

AC 3290-S (Rev. 9/13)

NEW YORK STATE

VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT BUSINESS ENTITY

You have selected the For-Profit Non-Construction questionnaire which may be printed and completed in this format or, for your convenience, may be completed online using the New York State VendRep System.

COMPLETION & CERTIFICATION

The person(s) completing the questionnaire must be knowledgeable about the vendor's business and operations. An owner or officer must certify the questionnaire and the signature must be notarized.

NEW YORK STATE VENDOR IDENTIFICATION NUMBER (VENDOR ID)

The Vendor ID is a ten-digit identifier issued by New York State when the vendor is registered on the Statewide Vendor File. This number must now be included on the questionnaire. If the business entity has not obtained a Vendor ID, contact the IT Service Desk at ITServiceDesk@osc.state.ny.us or call 866-370-4672.

DEFINITIONS

All underlined terms are defined in the "New York State Vendor Responsibility Definitions List," found at www.osc.state.ny.us/vendrep/documents/questionnaire/definitions.pdf. These terms may not have their ordinary, common or traditional meanings. Each vendor is strongly encouraged to read the respective definitions for any and all underlined terms. By submitting this questionnaire, the vendor agrees to be bound by the terms as defined in the "New York State Vendor Responsibility Definitions List" existing at the time of certification.

RESPONSES

Every question must be answered. Each response must provide all relevant information which can be obtained within the limits of the law. However, information regarding a determination or finding made in error which was subsequently corrected is not required. Individuals and Sole Proprietors may use a Social Security Number but are encouraged to obtain and use a federal Employer Identification Number (EIN).

REPORTING ENTITY

Each vendor must indicate if the questionnaire is filed on behalf of the entire Legal Business Entity or an Organizational Unit within or operating under the authority of the Legal Business Entity and having the same EIN. Generally, the Organizational Unit option may be appropriate for a vendor that meets the definition of "Reporting Entity" but due to the size and complexity of the Legal Business Entity, is best able to provide the required information for the Organizational Unit, while providing more limited information for other parts of the Legal Business Entity and Associated Entities.

ASSOCIATED ENTITY

An Associated Entity is one that owns or controls the Reporting Entity or any entity owned or controlled by the Reporting Entity. However, the term Associated Entity does not include "sibling organizations" (i.e., entities owned or controlled by a parent company that owns or controls the Reporting Entity), unless such sibling entity has a direct relationship with or impact on the Reporting Entity.

STRUCTURE OF THE QUESTIONNAIRE

The questionnaire is organized into eleven sections. Section I is to be completed for the Legal Business Entity. Section II requires the vendor to specify the Reporting Entity for the questionnaire. Section III refers to the individuals of the Reporting Entity, while Sections IV-VIII require information about the Reporting Entity. Section IX pertains to any Associated Entities, with one question about their Officials/Owners. Section X relates to disclosure under the Freedom of Information Law (FOIL). Section XI requires an authorized contact for the questionnaire information.

NYS Vendor ID: 000000000

NEW YORK STATE

VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT BUSINESS ENTITY

I. LEGAL BUSINESS ENTITY INFORMATION		
Legal Business Entity Name*	EIN	
Address of the Principal Place of Business (street, city, state, zip code)	New York State Vendor Identification Number	
	Telephone ext.	Fax
Email	Website	

Additional Legal Business Entity Identities: If applicable, list any other DBA, Trade Name, Former Name, Other Identity, or EIN used in the last five (5) years and the status (active or inactive).

Type	Name	EIN	Status

1.0 Legal Business Entity Type – Check appropriate box and provide additional information:

☐ Corporation (including PC)	Date of Incorporation
☐ Limited Liability Company (LLC or PLLC)	Date of Organization
☐ Partnership (including LLP, LP or General)	Date of Registration or Establishment
☐ Sole Proprietor	How many years in business?
☐ Other	Date Established

If Other, explain:

1.1 Was the Legal Business Entity formed or incorporated in New York State?	☐ Yes ☐ No

If 'No,' indicate jurisdiction where Legal Business Entity was formed or incorporated and attach a Certificate of Good Standing from the applicable jurisdiction or provide an explanation if a Certificate of Good Standing is not available.

☐ United States State _____

☐ Other Country _____

Explain, if not available:

1.2 Is the Legal Business Entity publicly traded?	☐ Yes ☐ No

If "Yes," provide CIK Code or Ticker Symbol

1.3 Does the Legal Business Entity have a DUNS Number?	☐ Yes ☐ No

If "Yes," Enter DUNS Number

*All underlined terms are defined in the "New York State Vendor Responsibility Definitions List," which can be found at www.osc.state.ny.us/vendrep/documents/questionnaire/definitions.pdf.

NYS Vendor ID: 000000000

NEW YORK STATE

VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT BUSINESS ENTITY

I. LEGAL BUSINESS ENTITY INFORMATION	
1.4 If the Legal Business Entity's Principal Place of Business is not in New York State, does the Legal Business Entity maintain an office in New York State? (Select "N/A," if Principal Place of Business is in New York State.)	☐ Yes ☐ No ☐ N/A
If "Yes," provide the address and telephone number for one office located in New York State.	
1.5 Is the Legal Business Entity a New York State certified Minority-Owned Business Enterprise (MBE), Women-Owned Business Enterprise (WBE), New York State Small Business (SB) or a federally certified Disadvantaged Business Enterprise (DBE)? If "Yes," check all that apply: ☐ New York State certified Minority-Owned Business Enterprise (MBE) ☐ New York State certified Women-Owned Business Enterprise (WBE) ☐ New York State Small Business (SB) ☐ Federally certified Disadvantaged Business Enterprise (DBE)	☐ Yes ☐ No

1.6 Identify Officials and Principal Owners, if applicable. For each person, include name, title and percentage of ownership. Attach additional pages if necessary. If applicable, reference to relevant SEC filing(s) containing the required information is optional.

Name	Title	Percentage Ownership *(Enter 0% if not applicable)*

NYS Vendor ID: 000000000

NEW YORK STATE

VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT BUSINESS ENTITY

II. REPORTING ENTITY INFORMATION

2.0 The Reporting Entity for this questionnaire is:

Note: Select only one.

☐ Legal Business Entity

Note: If selecting this option, "Reporting Entity" refers to the entire Legal Business Entity for the remainder of the questionnaire. (SKIP THE REMAINDER OF SECTION II AND PROCEED WITH SECTION III.)

☐ Organizational Unit within and operating under the authority of the Legal Business Entity

SEE DEFINITIONS OF "REPORTING ENTITY" AND "ORGANIZATIONAL UNIT" FOR ADDITIONAL INFORMATION ON CRITERIA TO QUALIFY FOR THIS SELECTION.

Note: If selecting this option, "Reporting Entity" refers to the Organizational Unit within the Legal Business Entity for the remainder of the questionnaire. (COMPLETE THE REMAINDER OF SECTION II AND ALL REMAINING SECTIONS OF THIS QUESTIONNAIRE.)

IDENTIFYING INFORMATION

a) Reporting Entity Name

Address of the Primary Place of Business (street, city, state, zip code)	Telephone ext.

b) Describe the relationship of the Reporting Entity to the Legal Business Entity

c) Attach an organizational chart

d) Does the Reporting Entity have a DUNS Number? ☐ Yes ☐ No

If "Yes," enter DUNS Number

e) Identify the designated manager(s) responsible for the business of the Reporting Entity.
For each person, include name and title. Attach additional pages if necessary.

Name	Title

NEW YORK STATE

VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT BUSINESS ENTITY

INSTRUCTIONS FOR SECTIONS III THROUGH VII

For each "Yes," provide an explanation of the issue(s), relevant dates, the government entity involved, any remedial or corrective action(s) taken and the current status of the issue(s). For each "Other," provide an explanation which provides the basis for not definitively responding "Yes" or "No." Provide the explanation at the end of the section or attach additional sheets with numbered responses, including the Reporting Entity name at the top of any attached pages.

III. LEADERSHIP INTEGRITY ***Within the past five (5) years, has any current or former reporting entity official or any individual currently or formerly having the authority to sign, execute or approve bids, proposals, contracts or supporting documentation on behalf of the reporting entity with any government entity been:***	
3.0 Sanctioned relative to any business or professional permit and/or license?	☐ Yes ☐ No ☐ Other
3.1 Suspended, debarred, or disqualified from any government contracting process?	☐ Yes ☐ No ☐ Other
3.2 The subject of an investigation, whether open or closed, by any government entity for a civil or criminal violation for any business-related conduct?	☐ Yes ☐ No ☐ Other
3.3 Charged with a misdemeanor or felony, indicted, granted immunity, convicted of a crime or subject to a judgment for: a) Any business-related activity; or b) Any crime, whether or not business-related, the underlying conduct of which was related to truthfulness?	☐ Yes ☐ No ☐ Other
For each "Yes" or "Other" explain:	

IV. INTEGRITY – CONTRACT BIDDING ***Within the past five (5) years, has the reporting entity:***	
4.0 Been suspended or debarred from any government contracting process or been disqualified on any government procurement, permit, license, concession, franchise or lease, including, but not limited to, debarment for a violation of New York State Workers' Compensation or Prevailing Wage laws or New York State Procurement Lobbying Law?	☐ Yes ☐ No
4.1 Been subject to a denial or revocation of a government prequalification?	☐ Yes ☐ No
4.2 Been denied a contract award or had a bid rejected based upon a non-responsibility finding by a government entity?	☐ Yes ☐ No
4.3 Had a low bid rejected on a government contract for failure to make good faith efforts on any Minority-Owned Business Enterprise, Women-Owned Business Enterprise or Disadvantaged Business Enterprise goal or statutory affirmative action requirements on a previously held contract?	☐ Yes ☐ No
4.4 Agreed to a voluntary exclusion from bidding/contracting with a government entity?	☐ Yes ☐ No
4.5 Initiated a request to withdraw a bid submitted to a government entity in lieu of responding to an information request or subsequent to a formal request to appear before the government entity?	☐ Yes ☐ No
For each "Yes," explain:	

NYS Vendor ID: 000000000

NEW YORK STATE

VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT BUSINESS ENTITY

V. INTEGRITY – CONTRACT AWARD *Within the past five (5) years, has the reporting entity*:	
5.0 Been suspended, cancelled or terminated for cause on any government contract including, but not limited to, a non-responsibility finding?	☐ Yes ☐ No
5.1 Been subject to an administrative proceeding or civil action seeking specific performance or restitution in connection with any government contract?	☐ Yes ☐ No
5.2 Entered into a formal monitoring agreement as a condition of a contract award from a government entity?	☐ Yes ☐ No
For each "Yes," explain:	

VI. CERTIFICATIONS/LICENSES *Within the past five (5) years, has the reporting entity*:	
6.0 Had a revocation, suspension or disbarment of any business or professional permit and/or license?	☐ Yes ☐ No
6.1 Had a denial, decertification, revocation or forfeiture of New York State certification of Minority-Owned Business Enterprise, Women-Owned Business Enterprise or federal certification of Disadvantaged Business Enterprise status for other than a change of ownership?	☐ Yes ☐ No
For each "Yes," explain:	

VII. LEGAL PROCEEDINGS *Within the past five (5) years, has the reporting entity*:	
7.0 Been the subject of an investigation, whether open or closed, by any government entity for a civil or criminal violation?	☐ Yes ☐ No
7.1 Been the subject of an indictment, grant of immunity, judgment or conviction (including entering into a plea bargain) for conduct constituting a crime?	☐ Yes ☐ No
7.2 Received any OSHA citation and Notification of Penalty containing a violation classified as serious or willful?	☐ Yes ☐ No
7.3 Had a government entity find a willful prevailing wage or supplemental payment violation or any other willful violation of New York State Labor Law?	☐ Yes ☐ No
7.4 Entered into a consent order with the New York State Department of Environmental Conservation, or received an enforcement determination by any government entity involving a violation of federal, state or local environmental laws?	☐ Yes ☐ No
7.5 Other than previously disclosed: a) Been subject to fines or penalties imposed by government entities which in the aggregate total $25,000 or more; or b) Been convicted of a criminal offense pursuant to any administrative and/or regulatory action taken by any government entity?	☐ Yes ☐ No
For each "Yes," explain:	

NEW YORK STATE

VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT BUSINESS ENTITY

VIII. FINANCIAL AND ORGANIZATIONAL CAPACITY	
8.0 Within the past five (5) years, has the Reporting Entity received any formal unsatisfactory performance assessment(s) from any government entity on any contract?	☐ Yes ☐ No
If "Yes," provide an explanation of the issue(s), relevant dates, the government entity involved, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses.	
8.1 Within the past five (5) years, has the Reporting Entity had any liquidated damages assessed over $25,000?	☐ Yes ☐ No
If "Yes," provide an explanation of the issue(s), relevant dates, contracting party involved, the amount assessed and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses.	
8.2 Within the past five (5) years, have any liens or judgments (not including UCC filings) over $25,000 been filed against the Reporting Entity which remain undischarged?	☐ Yes ☐ No
If "Yes," provide an explanation of the issue(s), relevant dates, the Lien holder or Claimant's name(s), the amount of the lien(s) and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses.	
8.3 In the last seven (7) years, has the Reporting Entity initiated or been the subject of any bankruptcy proceedings, whether or not closed, or is any bankruptcy proceeding pending?	☐ Yes ☐ No
If "Yes," provide the bankruptcy chapter number, the court name and the docket number. Indicate the current status of the proceedings as "Initiated," "Pending" or "Closed." Provide answer below or attach additional sheets with numbered responses.	
8.4 During the past three (3) years, has the Reporting Entity failed to file or pay any tax returns required by federal, state or local tax laws?	☐ Yes ☐ No
If "Yes," provide the taxing jurisdiction, the type of tax, the liability year(s), the tax liability amount the Reporting Entity failed to file/pay and the current status of the tax liability. Provide answer below or attach additional sheets with numbered responses.	
8.5 During the past three (3) years, has the Reporting Entity failed to file or pay any New York State unemployment insurance returns?	☐ Yes ☐ No
If "Yes," provide the years the Reporting Entity failed to file/pay the insurance, explain the situation and any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses.	
8.6 During the past three (3) years, has the Reporting Entity had any government audit(s) completed?	☐ Yes ☐ No
a) If "Yes," did any audit of the Reporting Entity identify any reported significant deficiencies in internal control, fraud, illegal acts, significant violations of provisions of contract or grant agreements, significant abuse or any material disallowance?	☐ Yes ☐ No
If "Yes" to 8.6 a), provide an explanation of the issue(s), relevant dates, the government entity involved, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses.	

NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT BUSINESS ENTITY

IX. ASSOCIATED ENTITIES

This section pertains to any entity(ies) that either controls or is controlled by the reporting entity.
(See definition of "associated entity" for additional information to complete this section.)

9.0 Does the Reporting Entity have any Associated Entities? Note: All questions in this section must be answered if the Reporting Entity is either: – An Organizational Unit; or – The entire Legal Business Entity which controls, or is controlled by, any other entity(ies). If "No," SKIP THE REMAINDER OF SECTION IX AND PROCEED WITH SECTION X.	☐ Yes ☐ No
9.1 Within the past five (5) years, has any Associated Entity Official or Principal Owner been charged with a misdemeanor or felony, indicted, granted immunity, convicted of a crime or subject to a judgment for: a) Any business-related activity; or b) Any crime, whether or not business-related, the underlying conduct of which was related to truthfulness?	☐ Yes ☐ No
If "Yes," provide an explanation of the issue(s), the individual involved, his/her title and role in the Associated Entity, his/her relationship to the Reporting Entity, relevant dates, the government entity involved, any remedial or corrective action(s) taken and the current status of the issue(s).	
9.2 Does any Associated Entity have any currently undischarged federal, New York State, New York City or New York local government liens or judgments (not including UCC filings) over $50,000?	☐ Yes ☐ No
If "Yes," provide an explanation of the issue(s), identify the Associated Entity's name(s), EIN(s), primary business activity, relationship to the Reporting Entity, relevant dates, the Lien holder or Claimant's name(s), the amount of the lien(s) and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses.	
9.3 Within the past five (5) years, has any Associated Entity:	
a) Been disqualified, suspended or debarred from any federal, New York State, New York City or other New York local government contracting process?	☐ Yes ☐ No
b) Been denied a contract award or had a bid rejected based upon a non-responsibility finding by any federal, New York State, New York City, or New York local government entity?	☐ Yes ☐ No
c) Been suspended, cancelled or terminated for cause (including for non-responsibility) on any federal, New York State, New York City or New York local government contract?	☐ Yes ☐ No
d) Been the subject of an investigation, whether open or closed, by any federal, New York State, New York City, or New York local government entity for a civil or criminal violation with a penalty in excess of $500,000?	☐ Yes ☐ No
e) Been the subject of an indictment, grant of immunity, judgment, or conviction (including entering into a plea bargain) for conduct constituting a crime?	☐ Yes ☐ No
f) Been convicted of a criminal offense pursuant to any administrative and/or regulatory action taken by any federal, New York State, New York City, or New York local government entity?	☐ Yes ☐ No
g) Initiated or been the subject of any bankruptcy proceedings, whether or not closed, or is any bankruptcy proceeding pending?	☐ Yes ☐ No
For each "Yes," provide an explanation of the issue(s), identify the Associated Entity's name(s), EIN(s), primary business activity, relationship to the Reporting Entity, relevant dates, the government entity involved, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses.	

NEW YORK STATE

VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT BUSINESS ENTITY

X. FREEDOM OF INFORMATION LAW (FOIL)	
10. Indicate whether any information supplied herein is believed to be exempt from disclosure under the Freedom of Information Law (FOIL). Note: A determination of whether such information is exempt from FOIL will be made at the time of any request for disclosure under FOIL.	☐ Yes ☐ No
If "Yes," indicate the question number(s) and explain the basis for the claim.	

XI. AUTHORIZED CONTACT FOR THIS QUESTIONNAIRE		
Name	Telephone ext.	Fax
Title	Email	

NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT BUSINESS ENTITY

Certification

The undersigned: (1) recognizes that this questionnaire is submitted for the express purpose of assisting New York State government entities (including the Office of the State Comptroller (OSC)) in making responsibility determinations regarding award or approval of a contract or subcontract and that such government entities will rely on information disclosed in the questionnaire in making responsibility determinations; (2) acknowledges that the New York State government entities and OSC may, in their discretion, by means which they may choose, verify the truth and accuracy of all statements made herein; and (3) acknowledges that intentional submission of false or misleading information may result in criminal penalties under State and/or Federal Law, as well as a finding of non-responsibility, contract suspension or contract termination.

The undersigned certifies that he/she:

- is knowledgeable about the submitting Business Entity's business and operations;
- has read and understands all of the questions contained in the questionnaire;
- has not altered the content of the questionnaire in any manner;
- has reviewed and/or supplied full and complete responses to each question;
- to the best of his/her knowledge, information and belief, confirms that the Business Entity's responses are true, accurate and complete, including all attachments, if applicable;
- understands that New York State government entities will rely on the information disclosed in the questionnaire when entering into a contract with the Business Entity; and
- is under an obligation to update the information provided herein to include any material changes to the Business Entity's responses at the time of bid/proposal submission through the contract award notification, and may be required to update the information at the request of the New York State government entities or OSC prior to the award and/or approval of a contract, or during the term of the contract.

Signature of Owner/Official _____

Printed Name of Signatory _____

Title _____

Name of Business _____

Address _____

City, State, Zip _____

Sworn to before me this _____ day of _____, 20___;

_____ Notary Public

CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective April 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the County receive information that a Bidder/Contractor is in violation of the above-referenced certification, the County will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the County shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default.

The County reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, _____, being duly sworn, deposes and says that he/she is the _____ of the _____ Corporation and that neither the Bidder/Contractor nor any proposed subcontractor is identified on the Prohibited Entities List.

_____
SIGNED

SWORN to before me this _____

day of _____, 20__

_____
Notary Public

NON-COLLUSIVE BIDDING CERTIFICATION

1. By submission of this bid, the undersigned bidder and each person signing on behalf of such bidder certifies and in the case of a joint bid each party thereto certifies as to its own organization — UNDER PENALTY OF PERJURY, that to the best of the undersigned's knowledge and belief:

(a) The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;

(b) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and

(c) No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

2. The undersigned acknowledges and agrees that a bid shall not be considered for award nor shall any award be made where any of the above have not been complied with; provided however, that if in any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons therefor. Where one or more of the above has/have not been complied with, the bid shall not be considered for award nor shall any award be made unless the political subdivision, public department, agency or official thereof to which the bid is made, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

3. The undersigned also acknowledges and agrees that the fact that a bidder (a) has published price lists, rates, or tariffs covering items being procured, (b) has informed prospective customers of proposed or pending publication of new or revised price lists for such items, or (c) has sold the same items to other customers at the same prices being bid, does not constitute, without more, a disclosure within the meaning of paragraph 1 above.

4. The undersigned further acknowledges and agrees that any bid hereafter made to any political subdivision of the state or any public department, agency or official thereof by a bidder which is a corporation or a limited liability company for work or services performed or to be performed or goods sold or to be sold, where competitive bidding is required by statute, rule, regulation, or local law, and where such bid contains the certification referred to in paragraph 1 of this certificate, shall be deemed to have been authorized by the board of directors of the bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of the certificate as to non-collusion as the act and deed of the corporation or limited liability company.

Name of Bidder: _____
(print full legal name)

Date Signed: _____ Signature: _____

Name of Person Signing Certificate: _____
(print full legal name of signer)

Bidder is (check one): □ an individual, □ a limited liability partnership, □ a limited liability company, □ other entity (specify): _____

APPENDIX G: W-9 FORM

Form **W-9**
(Rev. December 2014)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

Print or type
See Specific Instructions on page 2.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification; check only **one** of the following seven boxes:

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ _____

Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.)

Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the instructions for line 1 and the chart on page 4 for guidelines on whose number to enter.

Social security number

			–		–				

or

Employer identification number

		–							

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here | **Signature of U.S. person** ▶ | **Date** ▶

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at *www.irs.gov/fw9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding?* on page 2.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting?* on page 2 for further information.

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States:

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the Part II instructions on page 3 for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code* on page 3 and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships* above.

What is FATCA reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code* on page 3 and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account, list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note. ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C Corporation, or S Corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box in line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box in line 3.

Limited Liability Company (LLC). If the name on line 1 is an LLC treated as a partnership for U.S. federal tax purposes, check the "Limited Liability Company" box and enter "P" in the space provided. If the LLC has filed Form 8832 or 2553 to be taxed as a corporation, check the "Limited Liability Company" box and in the space provided enter "C" for C corporation or "S" for S corporation. If it is a single-member LLC that is a disregarded entity, do not check the "Limited Liability Company" box; instead check the first box in line 3 "Individual/sole proprietor or single-member LLC."

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space in line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2—The United States or any of its agencies or instrumentalities

3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities

5—A corporation

6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

7—A futures commission merchant registered with the Commodity Futures Trading Commission

8—A real estate investment trust

9—An entity registered at all times during the tax year under the Investment Company Act of 1940

10—A common trust fund operated by a bank under section 584(a)

11—A financial institution

12—A middleman known in the investment community as a nominee or custodian

13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over $600 required to be reported and direct sales over $5,000[1]	Generally, exempt payees 1 through 5[2]
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

[1] See Form 1099-MISC, Miscellaneous Income, and its instructions.

[2] However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note. You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited Liability Company (LLC)* on this page), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note. See the chart on page 4 for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at *www.ssa.gov*. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at *www.irs.gov/businesses* and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting IRS.gov or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note. Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: *A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.*

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, or 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code* earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account)	The actual owner of the account or, if combined funds, the first individual on the account[1]
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor[2]
4. a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law	The grantor-trustee[1] The actual owner[1]
5. Sole proprietorship or disregarded entity owned by an individual	The owner[3]
6. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor*
For this type of account:	**Give name and EIN of:**
7. Disregarded entity not owned by an individual	The owner
8. A valid trust, estate, or pension trust	Legal entity[4]
9. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
10. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
11. Partnership or multi-member LLC	The partnership
12. A broker or registered nominee	The broker or nominee
13. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
14. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

[1] List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

[4] List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships* on page 2.

*Note. Grantor also must provide a Form W-9 to trustee of trust.

Note. If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records from Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Publication 4535, Identity Theft Prevention and Victim Assistance.

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to *phishing@irs.gov*. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: *spam@uce.gov* or contact them at *www.ftc.gov/idtheft* or 1-877-IDTHEFT (1-877-438-4338).

Visit IRS.gov to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

APPENDIX H: NON-COLLUSION AFFIDAVIT

NON-COLLUSION AFFIDAVIT

The undersigned bidder or agent, being duly sworn on oath, says that he/she has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by him, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting nor to prevent any person from bidding nor to include anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding.

He/She further says that no person or persons, firms, or corporation has, have or will receive directly or indirectly, any rebate, fee gift, commission or thing of value on account of such sale.

OATH AND AFFIRMATION

I HEREBY AFFIRM UNDER THE PENALTIES FOR PERJURY THAT THE FACTS AND INFORMATION CONTAINED IN THE FOREGOING BID FOR PUBLIC WORKS ARE TRUE AND CORRECT.

Dated this ___ day of _____, _____

_____
(Name of Organization)

_____
(Title of Person Signing)

_____
(Signature)

ACKNOWLEDGEMENT

STATE OF _____)
) ss
COUNTY OF_____)

Before me, a Notary Public, personally appeared the above named and swore that the statements contained in the foregoing document are true and correct.

Subscribed and sworn to me this _____ day of _____, _____.

_____
Notary Public Signature

My Commission Expires: _____

APPENDIX I: IRAN DIVESTMENT ACT COMPLIANCE

IRAN DIVESTMENT ACT CERTIFICATION

As a result of the Iran Divestment Act of 2012 (Act), Chapter 1 of the 2012 Laws of New York, a new provision has been added to the State Finance Law (SFL), § 165-a, effective April 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list (prohibited entities list) of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date, at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, Bidder/Contractor (or any assignee) certifies that once the prohibited entities list is posted on the OGS website, it will not utilize on such Contract any subcontractor that is identified on the prohibited entities list.

Additionally, Bidder/Contractor is advised that once the list is posted on the OGS website, any Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to the solicitation, must certify at the time the Contract is renewed, extended or assigned that it is not included on the prohibited entities list.

During the term of the Contract, should the New York State Education Department (AGENCY) receive information that a person is in violation of the above-referenced certification, AGENCY will offer the person an opportunity to respond. If the person fails to demonstrate that it has ceased its engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then AGENCY shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages, or declaring the Contractor in default.

AGENCY reserves the right to reject any bid or request for assignment for an entity that appears on the prohibited entities list prior to the award of a contract, and to pursue a responsibility review with respect to any entity that is awarded a contract and appears on the prohibited entities list after contract award.

Signature:_____

Print Name:_____

Title:_____

Company Name:_____

Date: :_____

APPENDIX J: <INTENTIONALLY LEFT BLANK>

APPENDIX K: DELIVERABLES TABLE

DELIVERABLES	LUMP SUM PROPOSED:	HOURS OF LABOR:
GENERAL REQUIREMENTS		
Task 1) Project Schedule		
Task 2) Project Management & Coordination Meetings ***(incl. MILEAGE)***		
PRELIMINARY DESIGN PHASE		
Task 3) Data Collection & Review		
Task 4) Preliminary Designs ***(Basis of Design for Owner / Regulatory approval)***		
Task 5) Schematic Designs ***(30% Designs to support full permitting)***		
FINAL DESIGN PHASE		
Task 6) Final Designs ***(100% completion for Funding/Regulatory approval)***		
PERMITTING & CONSTRUCITON DOCUMENTS		
Task 7) Produce Final Cosntruction Documents, acquire necessary permits per Task 3		
Task 8) Project Permitting (Local, State, Federal)		
BIDDING PHASE		
Task 9) Provide Compliant Construction Documents ***(incl. PRINTING)***		
Task 10) Advertise for Bidding, provide Bid Response Services ***(incl. PUBLISHING)***		
Task 11) Tabulate Bid Results, Recommend Awards		
CONSTRUCTION ADMIN PHASE		
Task 12) Preconstruction Conference		
Task 13) Construction Period Services: Technical Analysis & Contractor Payments/Submittals		
Task 14) Punch List with Contractor		
Task 15) Closeout (Codes & compliance reivew / certification per 'Closeout Checklist')		
Task 16) Engineer's Notice of Completion Certification		
Task 17) Approx. 120 DAYS of RPR Services		
REIMBURSABLES		
Task 18) Surveys & Base Mapping		
Task 19) Geotechnical Evaluations		

APPENDIX L: NYS SEXUAL HARASSMENT TRAINING CERTIFICATION

Sexual Harassment Prevention EMPLOYER TOOLKIT

NEW YORK STATE | Combating Sexual Harassment

Introduction

New York State is a national leader in the fight against sexual harassment and is partnering with employers across the state to further our commitment to ending sexual harassment in the workplace.

This toolkit will provide you step-by-step guidance to implementing the required training and sexual harassment policy, directing you to resources available through New York State and the relevant state agencies.

These resources are all available on the State's Combating Sexual Harassment in the Workplace website: **www.ny.gov/programs/combating-sexual-harassment-workplace**.

What are the New Requirements?

The 2019 New York State Budget includes the nation's strongest and most comprehensive sexual harassment package, including new resources and requirements for employers. There are two key components under this law:

Policy (see pages 2-4)
Under the new law, every employer in New York State is **required to establish a sexual harassment prevention policy**. The Department of Labor in consultation with the Division of Human Rights has established a model sexual harassment prevention policy for employers to adopt, available at www.ny.gov/programs/combating-sexual-harassment-workplace. Or, employers may adopt a similar policy that meets or exceeds the minimum standards of the model policy (www.ny.gov/combating-sexual-harassment-workplace/employers#model-sexual-harassment-policy).

Training (see pages 5-6)
In addition, every employer in New York State is **required to provide employees with sexual harassment prevention training**. The Department of Labor in consultation with the Division of Human Rights has established this model training for employers to use. Or, employers may use a training program that meets or exceeds the minimum standards of the model training (www.ny.gov/combating-sexual-harassment-workplace/employers#training-requirements).

Policy: Implementation

All employers must adopt and provide a sexual harassment prevention policy to all employees by **October 9, 2018**.

If you want to adopt the State Model Policy:

- The State Model Policy contains fields for you to list your business name and the name/contact information for the individual(s) you have designated to receive sexual harassment complaints. Fill in those fields and apply whatever branding (e.g., logos, etc.) you like. You may choose to modify the policy to reflect the work of your organization and industry specific scenarios or best practices.

- Distribute the policy to all employees in writing or electronically. Employers are also encouraged to have employees acknowledge receipt of the policy, and to post a copy of the policy where employees can easily access it.

If you already have a policy and do NOT want to adopt the State Model Policy:

- Use the checklist on the next page to ensure your policy meets or exceeds the required minimum standards.

- If it already meets those standards, ensure it already has been or will be distributed to employees by October 9, 2018. All future new employees should receive the policy before commencing work.

- Ensure your complaint form and process are up to date and that employees are made aware of it as part of the policy.

- If you do not have a complaint form, a model is available online: www.ny.gov/combating-sexual-harassment-workplace/employers#model-complaint-form

- Review the online FAQs, which outline numerous common questions that may arise: www.ny.gov/combating-sexual-harassment-workplace/combating-sexual-harassment-frequently-asked-questions

- Distribute a copy of your finalized policy to all employees in writing. This may be done electronically, for example, by email. Employers are also encouraged to have employees acknowledge receipt of the policy, and to post a copy of the policy where employees can easily access it.

- You are also encouraged to provide the policy and training to anyone providing services in the workplace.

If you do NOT yet have a policy:

- Download the model policy, available online: www.ny.gov/combating-sexual-harassment-workplace/employers#model-sexual-harassment-policy

- Customize the document by filling in the employer name, person or office designated to receive complaints and appropriate contact information, as highlighted throughout.

- You may choose to modify the policy to reflect the work of your organization and industry specific scenarios or best practices.

- Review the online FAQs, which outline numerous common questions that may arise: www.ny.gov/combating-sexual-harassment-workplace/combating-sexual-harassment-frequently-asked-questions

- Distribute a copy of your finalized policy to all employees in writing. This may be done electronically, for example, by email. Employers are also encouraged to have employees acknowledge receipt of the policy, and to post a copy of the policy where employees can easily access it.

- You are also encouraged to provide the policy and training to anyone providing services in the workplace.

Policy: Minimum Standards Checklist

An employer that does not use the State model policy -- developed by the State Department of Labor and State Division of Human Rights -- must ensure their policy meets or exceeds the following minimum standards.

The policy **must**:

- ☐ Prohibit sexual harassment consistent with guidance issued by the Department of Labor in consultation with the Division of Human Rights;
- ☐ Provide examples of prohibited conduct;
- ☐ Include information concerning the federal and state statutory provisions concerning sexual harassment, remedies available to victims of sexual harassment, and a statement that there may be applicable local laws;
- ☐ Include a complaint form;
- ☐ Include a procedure for the timely and confidential investigation of complaints that ensures due process for all parties;
- ☐ Inform employees of their rights of redress and all available forums for adjudicating sexual harassment complaints administratively and judicially;
- ☐ Clearly state that sexual harassment is considered a form of employee misconduct and that sanctions will be enforced against individuals engaging in sexual harassment and against supervisory and managerial personnel who knowingly allow such behavior to continue; and
- ☐ Clearly state that retaliation against individuals who complain of sexual harassment or who testify or assist in any investigation or proceeding involving sexual harassment is unlawful.

Training: Instructions for Employers

All employers are required to train current employees by October 9, 2019. New employees should be trained as quickly as possible. In addition, all employees must complete sexual harassment prevention training at least once per year. This may be based on calendar year, anniversary of each employee's start date or any other date the employer chooses.

If you already have a training:

- Use the checklist on the next page to ensure your training meets or exceeds the required minimum standards.

- If your existing training does not, it should be updated to include all the listed elements. You may also provide supplemental training to employers who have already completed the training to ensure they have received training that meets or exceeds the minimum standards.

- Review the online FAQs, which outline numerous common questions that may arise: www.ny.gov/combating-sexual-harassment-workplace/combating-sexual-harassment-frequently-asked-questions

If you do NOT yet have a training:

- Download the model training, available online: www.ny.gov/combating-sexual-harassment-workplace/employers#training-requirements.

    - You may execute this training in a variety of ways, including live in person, via webinar or on an individual basis, with feedback as outlined in the training guidance document.

    - Depending on how you choose to present your training, you may utilize different available resources. For example, if you do a live presentation, you should download the PowerPoint and read the script that appears in the "Notes" of each slide.

    - If you choose to train employees with the video, you may direct them to watch it online or download it and show to a group, after which you would provide them a mechanism for feedback, as outlined in the training guidance document.

- Customize the training document(s) and modify them to reflect the work of your organization, including industry specific scenarios or best practices.

- The training should detail any internal process employees are encouraged to use to complain and include the contact information for the specific name(s) and office(s) with which employees alleging harassment should file their complaints.

- You may wish to include additional interactive activities as part of the training, including an opening activity, role playing or group discussion(s).

- Review the online FAQs, which outline numerous common questions that may arise: www.ny.gov/combating-sexual-harassment-workplace/combating-sexual-harassment-frequently-asked-questions

Training: Minimum Standards Checklist

An employer that does not use this model training -- developed by the State Department of Labor and State Division of Human Rights -- must ensure their training meets or exceeds the following minimum standards.

The training **must**:

- ☐ Be interactive (*see the model training guidance document for specific recommendations*);
- ☐ Include an explanation of sexual harassment consistent with guidance issued by the Department of Labor in consultation with the Division of Human Rights;
- ☐ Include examples of unlawful sexual harassment;
- ☐ Include information concerning the federal and state statutory provisions concerning sexual harassment and remedies available to targets of sexual harassment;
- ☐ Include information concerning employees' rights of redress and all available forums for adjudicating complaints; and
- ☐ Include information addressing conduct by supervisors and additional responsibilities for supervisors.

APPENDIX M: DRAFT FORM OF CONTRACT (EJCDC)

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

AGREEMENT
BETWEEN OWNER AND ENGINEER
FOR PROFESSIONAL SERVICES

Prepared by

EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

Issued and Published Jointly by

ACEC
AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

National Society of Professional Engineers®

This Agreement has been prepared for use with EJCDC® C-700, Standard General Conditions of the Construction Contract, 2013 Edition. Their provisions are interrelated, and a change in one may necessitate a change in the other. For guidance on the completion and use of this Agreement, see EJCDC® E-001, Commentary on the EJCDC Engineering Services Agreements, 2013 Edition.

National Society of Professional Engineers
1420 King Street, Alexandria, VA 22314-2794
(703) 684-2882
www.nspe.org

American Council of Engineering Companies
1015 15th Street N.W., Washington, DC 20005
(202) 347-7474
www.acec.org

American Society of Civil Engineers
1801 Alexander Bell Drive, Reston, VA 20191-4400
(800) 548-2723
www.asce.org

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AGREEMENT
BETWEEN OWNER AND ENGINEER
FOR PROFESSIONAL SERVICES

THIS IS AN AGREEMENT effective as of **TBA** ("Effective Date") between

THE TOWNS OF JAY AND BLACK BROOK, NY ("Owner") and

TBA ("Engineer").

Owner's Project, of which Engineer's services under this Agreement are a part, is generally identified as follows:

AUSABLE FORKS WASTE WATER TREATMENT PLANT UPGRADES

("Project").

Other terms used in this Agreement are defined in **Article 7**.

Engineer's services under this Agreement are generally identified as follows:

Provide, or cause to provide, all engineering services to support the design and construction of the WWTP upgrades: plans, specifications, permitting, construction period services, RPR/Clerk-of-the-Works, etc. as defined in this Agreement.

Owner and Engineer further agree as follows:

ARTICLE 1 – SERVICES OF ENGINEER

1.01 *Scope*

A. Engineer shall provide, or cause to be provided, the services set forth herein, in **Exhibit A** and the originating RFP response**, and all revisions** included as **Exhibit P.**

ARTICLE 2 – OWNER'S RESPONSIBILITIES

2.01 *General*

A. Owner shall have the responsibilities set forth herein and in **Exhibit B.**

B. Owner shall pay Engineer as set forth in **Article 4 and Exhibit C.**

C. Owner shall be responsible for all requirements and instructions that it furnishes to Engineer pursuant to this Agreement, and for the accuracy and completeness of all programs, reports, data, and other information furnished by Owner to Engineer pursuant to this Agreement. Engineer may use and rely upon such requirements, programs, instructions, reports, data, and information in performing or furnishing services under this Agreement, subject to any express limitations or reservations applicable to the furnished items.

D. Owner shall give prompt written notice to Engineer whenever Owner observes or otherwise becomes aware of:

1. any development that affects the scope or time of performance of Engineer's services;

2. the presence at the Site of any Constituent of Concern; or

3. any relevant, material defect or nonconformance in: (a) Engineer's services, (b) the Work, (c) the performance of any Constructor, or (d) Owner's performance of its responsibilities under this Agreement.

ARTICLE 3 – SCHEDULE FOR RENDERING SERVICES

3.01 *Commencement*

A. Engineer is authorized to begin rendering services as of the Effective Date.

B. **The term of this agreement shall commence on May 1st, 2022 through August 1st, 2023, time being of the essence.**

3.02 *Time for Completion*

A. Engineer shall complete its obligations within a reasonable time. Specific periods of time for rendering services, or specific dates by which services are to be completed, are provided in **Exhibit A and Exhibit L**, and are hereby agreed to be reasonable.

B. If, through no fault of Engineer, such periods of time or dates are changed, or the orderly and continuous progress of Engineer's services is impaired, or Engineer's services are delayed or suspended, then the time for completion of Engineer's services, and the rates and amounts of Engineer's compensation, shall be adjusted equitably.

C. If Owner authorizes changes in the scope, extent, or character of the Project or Engineer's services, then the time for completion of Engineer's services, and the rates and amounts of Engineer's compensation, shall be adjusted equitably.

D. Owner shall make decisions and carry out its other responsibilities in a timely manner so as not to delay the Engineer's performance of its services.

E. If Engineer fails, through its own fault, to complete the performance required in this Agreement within the time set forth, as duly adjusted, then Owner shall be entitled, as its sole remedy, to the recovery of direct damages, if any, resulting from such failure.

ARTICLE 4 – INVOICES AND PAYMENTS

4.01 *Invoices*

A. *Preparation and Submittal of Invoices:* Engineer shall prepare invoices in accordance with its standard invoicing practices and the terms of **Exhibit C**. Engineer shall submit its invoices to Owner on a monthly basis **prior to the Owners Town Boards meeting for invoice approval**, **which is listed for public knowledge. The Town Boards meets on the second Monday of each month.** Invoices are due and payable ~~within~~ **thirty (30) days ~~of receipt~~ after thirty (30) days of acceptance from the Town Boards**.

4.02 *Payments*

A. *Application to Interest and Principal:* Payment will be credited first to any interest owed to Engineer and then to principal.

B. *Failure to Pay*: If Owner fails to make any payment due Engineer for services and expenses within **thirty (30) days** after receipt of Engineer's invoice, then:

1. amounts due Engineer will be increased at the rate of 1.0% per month (or the maximum rate of interest permitted by law, if less) from said thirtieth day; and

2. Engineer may, after giving **seven (7) days** written notice to Owner, suspend services under this Agreement until Owner has paid in full all amounts due for services, expenses, and other related charges. Owner waives any and all claims against Engineer for any such suspension.

3. **Exceptions to this section apply when the Consultant fails to provide funding agency required reports and/or documents that are complete and on time; if these reports are not supplied as required and further specified in the Attachments hereto, the Owner reserves the right to withhold payment without penalty by the Consultant to ensure that project costs are compliant per the specified funding agency program requirements.**

C. *Disputed Invoices:* If Owner disputes an invoice, either as to amount or entitlement, then Owner shall promptly advise Engineer in writing of the specific basis for doing so, may withhold only that portion so disputed, and must pay the undisputed portion subject to the terms of **Paragraph 4.01.**

~~D. *Sales or Use Taxes:* If after the Effective Date any governmental entity takes a legislative action that imposes additional sales or use taxes on Engineer's services or compensation under this Agreement, then Engineer may invoice such additional sales or use taxes for reimbursement by Owner. Owner shall reimburse Engineer for the cost of such invoiced additional sales or use taxes; such reimbursement shall be in addition to the compensation to which Engineer is entitled under the terms of **Exhibit C.**~~

ARTICLE 5 – OPINIONS OF COST

5.01 *Opinions of Probable Construction Cost*

A. Engineer's opinions (if any) of probable Construction Cost are to be made on the basis of Engineer's experience, qualifications, and general familiarity with the construction industry. However, because Engineer has no control over the cost of labor, materials, equipment, or services furnished by others, or over contractors' methods of determining prices, or over competitive bidding or market conditions, Engineer cannot and does not guarantee that proposals, bids, or actual Construction Cost will not vary from opinions of probable Construction Cost prepared by Engineer. If Owner requires greater assurance as to probable Construction Cost, then Owner agrees to obtain an independent cost estimate.

~~5.02 *Designing to Construction Cost Limit*~~

~~A. If a Construction Cost limit is established between Owner and Engineer, such Construction Cost limit and a statement of Engineer's rights and responsibilities with respect thereto will be specifically set forth in **Exhibit F** to this Agreement.~~

5.03 *Opinions of Total Project Costs*

A. The services, if any, of Engineer with respect to Total Project Costs shall be limited to assisting the Owner in tabulating the various categories that comprise Total Project Costs. Engineer assumes no responsibility for the accuracy of any opinions of Total Project Costs.

ARTICLE 6 – GENERAL CONSIDERATIONS

6.01 *Standards of Performance*

A. *Standard of Care:* The standard of care for all professional engineering and related services performed or furnished by Engineer under this Agreement will be the care and skill ordinarily used by members of the subject profession practicing under similar circumstances at the same time and in the same locality. Engineer makes no warranties, express or implied, under this Agreement or otherwise, in connection with any services performed or furnished by Engineer.

B. *Technical Accuracy:* Owner shall not be responsible for discovering deficiencies in the technical accuracy of Engineer's services. Engineer shall correct deficiencies in technical accuracy without additional compensation, unless such corrective action is directly attributable to deficiencies in Owner-furnished information.

C. *Consultants:* Engineer may retain such Consultants as Engineer deems necessary to assist in the performance or furnishing of the services, subject to reasonable, timely, and substantive objections by Owner.

D. *Reliance on Others:* Subject to the standard of care set forth in **Paragraph 6.01.A**, Engineer and its Consultants may use or rely upon design elements and information ordinarily or customarily furnished by others, including, but not limited to, specialty contractors, manufacturers, suppliers, and the publishers of technical standards.

E. *Compliance with Laws and Regulations, and Policies and Procedures:*

1. Engineer and Owner shall comply with applicable Laws and Regulations.

2. Engineer shall comply with any and all policies, procedures, and instructions of Owner that are applicable to Engineer's performance of services under this Agreement and that Owner provides to Engineer in writing, subject to the standard of care set forth in **Paragraph 6.01.A**, and to the extent compliance is not inconsistent with professional practice requirements.

    a. Articles 8 & 9 NYS Labor Law: Public Works Building & Service Contracts

    b. Section 220-f of NYS Labor Law: International Boycotts

    c. Debarment/Suspension:

1) Exec. Order 12549 & 12689

2) 42 USC ss 1320a-7b(f

d. HIPA Act of 1996

3. This Agreement is based on Laws and Regulations and Owner-provided written policies and procedures as of the Effective Date. The following may be the basis for modifications to Owner's responsibilities or to Engineer's scope of services, times of performance, or compensation:

a. changes after the Effective Date to Laws and Regulations;

b. the receipt by Engineer after the Effective Date of Owner-provided written policies and procedures;

c. changes after the Effective Date to Owner-provided written policies or procedures.

F. Engineer shall not be required to sign any document, no matter by whom requested, that would result in the Engineer having to certify, guarantee, or warrant the existence of conditions whose existence the Engineer cannot ascertain. Owner agrees not to make resolution of any dispute with the Engineer or payment of any amount due to the Engineer in any way contingent upon the Engineer signing any such document.

G. **The general conditions for any construction contract documents prepared hereunder are to be EJCDC® C-700 "Standard General Conditions of the Construction Contract" (2013 Edition), prepared by the Engineers Joint Contract Documents Committee, unless expressly indicated otherwise in Exhibit J or elsewhere in this Agreement.**

H. Engineer shall not at any time supervise, direct, control, or have authority over any Constructor's work, nor shall Engineer have authority over or be responsible for the means, methods, techniques, sequences, or procedures of construction selected or used by any Constructor, or the safety precautions and programs incident thereto, for security or safety at the Site, nor for any failure of a Constructor to comply with Laws and Regulations applicable to that Constructor's furnishing and performing of its work. Engineer shall not be responsible for the acts or omissions of any Constructor.

I. Engineer neither guarantees the performance of any Constructor nor assumes responsibility for any Constructor's, failure to furnish and perform the Work in accordance with the Construction Contract Documents.

J. Engineer shall not be responsible for any decision made regarding the Construction Contract Documents, or any application, interpretation, clarification, or modification of the Construction Contract Documents, other than those made by Engineer or its Consultants.

K. Engineer is not required to provide and does not have any responsibility for surety bonding or insurance-related advice, recommendations, counseling, or research, or enforcement of construction insurance or surety bonding requirements.

L. Engineer's services do not include providing legal advice or representation.

M. Engineer's services do not include (1) serving as a "municipal advisor" for purposes of the registration requirements of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (2010) or the municipal advisor registration rules issued by the Securities and Exchange Commission, or (2) advising Owner, or any municipal entity or other person or entity, regarding municipal financial products or the issuance of municipal securities, including advice with respect to the structure, timing, terms, or other similar matters concerning such products or issuances.

N. While at the Site, Engineer, its Consultants, and their employees and representatives shall comply with the applicable requirements of Contractor's and Owner's safety programs of which Engineer has been informed in writing.

O. The parties each acknowledge, covenant and agree that the relationship of the Consultant to the Owner shall be of an independent contractor The Consultant, in accordance with its status as an independent contractor, further covenants and agrees that it

1. will conduct itself in accordance with its status as an independent contractor;

2. will neither hold itself out as nor claim to be an officer or employee of the Owner;

3. will not make any claim, demand, or application for any right of privilege applicable to an officer or an employee of the Owner, including but not limited to workers' compensation benefits, unemployment insurance benefits, social security coverage or retirement membership or credits.

P. The Consultant shall, during the term of this agreement, obtain and keep in full force and affect any and all licenses, permits and certifications required by any governmental authority having jurisdiction over the rendition and performance of the services to be furnished by the Consultant under this agreement.

~~6.02 *Design Without Construction Phase Services*~~

~~A. Engineer shall be responsible only for those Construction Phase services expressly required of Engineer in **Exhibit A, Paragraph A1.05.** With the exception of such expressly required services, Engineer shall have no design, Shop Drawing review, or other obligations during construction, and Owner assumes all responsibility for the application and interpretation of the Construction Contract Documents, review and response to Contractor claims, Construction Contract administration, processing of Change Orders and submittals, revisions to the Construction Contract Documents during construction, construction observation and review, review of Contractor's payment applications, and all other necessary Construction Phase administrative, engineering, and professional services. Owner waives all claims against the Engineer that may be connected in any way to Construction Phase administrative, engineering, or professional services except for those services that are expressly required of Engineer in **Exhibit A.**~~

6.03 *Use of Documents*

A. All Documents are instruments of service, and Engineer shall retain an ownership and property interest therein (including the copyright and the right of reuse at the discretion of the Engineer) whether or not the Project is completed.

B. The Consultant is to maintain all books, documents, papers, account records and other evidence pertaining to this work ***and to make such materials available*** at their respective offices at all reasonable times during the agreement and **for a period up to six (6) years from the date of final payment under the agreement.**

C. All reports, documents, information and any materials or equipment furnished to the Engineer by the Owner shall remain the sole property of the Owner and except for the Engineer's limited possession of the purpose of carrying out each Agreement, shall be returned to the Owner at the conclusion of each Agreement. **Nothing written in this paragraph, however, will be interpreted to forbid the Engineer from retaining a single copy of the information for its files.**

D. If Engineer is required to prepare or furnish Drawings and/or Specifications under this Agreement, Engineer shall deliver to Owner at least **two** (2) original printed record versions of such Drawings and Specifications, signed and sealed according to applicable Laws and Regulations, and further provide electronic copies (e.g., PDF.) upon completion of the project and upon payment in full to the Engineer.

E. Owner may make and retain copies of Documents for information and reference in connection with the use of the Documents on the Project. Engineer grants Owner a limited license to use the Documents on the Project, extensions of the Project, and for related uses of the Owner, subject to receipt by Engineer of full payment due and owing for all services relating to preparation of the Documents, and subject to the following limitations: (1) Owner acknowledges that such Documents are not intended or represented to be suitable for use on the Project unless completed by Engineer, or for use or reuse by Owner or others on extensions of the Project, on any other project, or for any other use or purpose, without written verification or adaptation by Engineer; (2) any such use or reuse, or any modification of the Documents, without written verification, completion, or adaptation by Engineer, as appropriate for the specific purpose intended, will be at Owner's sole risk and without liability or legal exposure to Engineer or to its officers, directors, members, partners, agents, employees, and Consultants; (3) Owner shall indemnify and hold harmless Engineer and its officers, directors, members, partners, agents, employees, and Consultants from all claims, damages, losses, and expenses, including attorneys' fees, arising out of or resulting from any use, reuse, or modification of the Documents without written verification, completion, or adaptation by Engineer; and (4) such limited license to Owner shall not create any rights in third parties. **THIS PROVISION SHALL NOT APPLY TO SURVEY, MAPPING & GIS PRODUCTS THAT WILL REMAIN THE PROPERTY OF THE OWNER AT PROJECT COMPLETION**.

F. If Engineer at Owner's request verifies the suitability of the Documents, completes them, or adapts them for extensions of the Project or for any other purpose, then Owner shall compensate Engineer at rates or in an amount to be agreed upon by Owner and Engineer.

6.04 *Electronic Transmittals*

A. Owner and Engineer may transmit, and shall accept, Project-related correspondence, Documents, text, data, drawings, information, and graphics, in electronic media or digital format, either directly, or through access to a secure Project website, in accordance with a mutually agreeable protocol.

B. If this Agreement does not establish protocols for electronic or digital transmittals, then Owner and Engineer shall jointly develop such protocols.

C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

6.05 *Insurance*

A. Engineer shall procure and maintain insurance as set forth in **Exhibit G**. Engineer shall cause Owner to be listed as an additional insured on any applicable general liability insurance policy carried by Engineer.

B. Owner shall procure and maintain insurance as set forth in **Exhibit G.** Owner shall cause Engineer and its Consultants to be listed as additional insureds on any general liability policies carried by Owner, which are applicable to the Project.

C. Owner shall require Contractor to purchase and maintain policies of insurance covering workers' compensation, general liability, motor vehicle damage and injuries, and other insurance necessary to protect Owner's and Engineer's interests in the Project. Owner shall require Contractor to cause Engineer and its Consultants to be listed as additional insureds with respect to such liability insurance purchased and maintained by Contractor for the Project.

D. Owner and Engineer shall each deliver to the other certificates of insurance evidencing the coverages indicated in **Exhibit G**. Such certificates shall be furnished prior to commencement of Engineer's services and at renewals thereafter during the life of the Agreement.

E. All policies of property insurance relating to the Project, including but not limited to any builder's risk policy, shall allow for waiver of subrogation rights and contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insured thereunder or against Engineer or its Consultants. Owner and Engineer waive all rights against each other, Contractor, the Consultants, and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by any builder's risk policy and any other property insurance relating to the Project. Owner and Engineer shall take appropriate measures in other Project-related contracts to secure waivers of rights consistent with those set forth in this paragraph.

F. All policies of insurance shall contain a provision or endorsement that the coverage afforded will not be canceled or reduced in limits by endorsement, and that renewal will not be refused, until at least **ten (10) days** prior written notice has been given to the primary insured. Upon receipt of such notice, the receiving party shall promptly forward a copy of the notice to the other party to this Agreement.

G. At any time, Owner may request that Engineer or its Consultants, at Engineers' sole expense, provide additional insurance coverage, increased limits, or revised deductibles that are more protective than those specified in **Exhibit G.** If so requested by Owner, and if commercially available, Engineer shall obtain and shall require its Consultants to obtain such additional insurance coverage, different limits, or revised deductibles for such periods

of time as requested by Owner, and **Exhibit G** will be supplemented to incorporate these requirements.

6.06 *Suspension and Termination*

A. *Suspension:*

1. *By Owner*: Owner may suspend the Project for up to **ninety (90) days** upon **seven (7) days** written notice to Engineer.

2. *By Engineer*: Engineer may, after giving **seven (7) days** written notice to Owner, suspend services under this Agreement if Owner has failed to pay Engineer for invoiced services and expenses, as set forth in **Paragraph 4.02.B**, or in response to the presence of Constituents of Concern at the Site, as set forth in **Paragraph 6.10.D**.

B. *Termination*: The obligation to provide further services under this Agreement may be terminated:

1. For cause,

a. by either party upon **thirty (30) days** written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party.

b. by Engineer:

1) upon **seven (7) days** written notice if Owner demands that Engineer furnish or perform services contrary to Engineer's responsibilities as a licensed professional; or

2) upon **seven (7) days** written notice if the Engineer's services for the Project are delayed or suspended for more than **ninety (90) days** for reasons beyond Engineer's control, or as the result of the presence at the Site of undisclosed Constituents of Concern, as set forth in **Paragraph 6.10.D.**

3) Engineer shall have no liability to Owner on account of such termination.

4) **In the event of such termination, Engineer is still liable to provide copies of any project drawings, specifications, mapping and any other developed Work that the Owner has paid for in the period of performance.**

c. Notwithstanding the foregoing, this Agreement will not terminate under **Paragraph 6.06.B.1.a** if the party receiving such notice begins, within **seven (7) days** of receipt of such notice, to correct its substantial failure to perform and proceeds diligently to cure such failure within no more than **thirty (30) day**s of receipt thereof; provided, however, that if and to the extent such substantial failure cannot be reasonably cured within such **thirty (30) day** period, and if such party has diligently attempted to cure the same and thereafter continues diligently to cure the same, then the cure period provided for herein shall extend up to, but in no case more than, s**ixty (60) days** after the date of receipt of the notice.

2. For convenience, by Owner effective upon Engineer's receipt of notice from Owner.

C. *Effective Date of Termination:* The terminating party under **Paragraph 6.06.B** may set the effective date of termination at a time up to **thirty (30) days** later than otherwise provided to allow Engineer to demobilize personnel and equipment from the Site, to complete tasks whose value would otherwise be lost, to prepare notes as to the status of completed and uncompleted tasks, and to assemble Project materials in orderly files.

D. *Payments Upon Termination:*

1. In the event of any termination under **Paragraph 6.06**, Engineer will be entitled to invoice Owner and to receive full payment for all services performed or furnished in accordance with this Agreement and all Reimbursable Expenses incurred through the effective date of termination. Upon making such payment, Owner shall have the limited right to the use of Documents**, other than survey and Mapping products for which the Owner will have unfettered use,** at Owner's sole risk, subject to the provisions of **Paragraph 6.03.**

2. In the event of termination by Owner for convenience or by Engineer for cause, Engineer shall be entitled, in addition to invoicing for those items identified in **Paragraph 6.06.D.1,** to invoice Owner and receive payment of a reasonable amount for services and expenses directly attributable to termination, both before and after the effective date of termination, such as reassignment of personnel, costs of terminating contracts with Engineer's Consultants, and other related close-out costs, using methods and rates for Additional Services as set forth in **Exhibit C.**

6.07 *Controlling Law*

A. This Agreement is to be governed by the Laws and Regulations of the state in which the Project is located: **HAMLET OF AUSABLE FORKS, ESSEX COUNTY, NEW YORK, and any and all disputes shall be brought to the Essex County Supreme Court, Essex County, NY.**

6.08 *Successors, Assigns, and Beneficiaries*

A. Owner and Engineer are hereby bound and the successors, executors, administrators, and legal representatives of Owner and Engineer (and to the extent permitted by **Paragraph 6.08.B** the assigns of Owner and Engineer) are hereby bound to the other party to this Agreement and to the successors, executors, administrators and legal representatives (and said assigns) of such other party, in respect of all covenants, agreements, and obligations of this Agreement.

B. Neither Owner nor Engineer may assign, sublet, or transfer any rights under or interest (including, but without limitation, money that is due or may become due) in this Agreement without the written consent of the other party, except to the extent that any assignment, subletting, or transfer is mandated by law. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement.

C. Unless expressly provided otherwise in this Agreement:

1. Nothing in this Agreement shall be construed to create, impose, or give rise to any duty owed by Owner or Engineer to any Constructor, other third-party individual or entity, or to any surety for or employee of any of them.

2. All duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of Owner and Engineer and not for the benefit of any other party.

3. Owner agrees that the substance of the provisions of this **Paragraph 6.08.C** shall appear in the Construction Contract Documents.

6.09 *Dispute Resolution*

A. Owner and Engineer agree to negotiate all disputes between them in good faith for a period of **thirty (30) days** from the date of notice ~~prior to invoking the procedures of **Exhibit H**~~ or other provisions of this Agreement or exercising their rights at law.

B. **No Exhibit H is included.**

C. **After the thirty (30) day period for mutual negotiation has expired or the process has failed, then disputes, including breach or alleged breach thereof, *may not be submitted to binding arbitration.* Instead, the dispute must be heard in the Essex County Supreme Court or any other court of competent jurisdiction within Essex County, NY**

~~D. If the parties fail to resolve a dispute through negotiation under **Paragraph 6.09.A**, then either or both may invoke the procedures of **Exhibit H**. If **Exhibit H** is not included, or if no dispute resolution method is specified in **Exhibit H**, then the parties may exercise their rights at law.~~

6.10 *Environmental Condition of Site*

A. Owner represents to Engineer that as of the Effective Date to the best of Owner's knowledge no Constituents of Concern, other than those disclosed in writing to Engineer, exist at or adjacent to the Site.

B. If Engineer encounters or learns of an undisclosed Constituent of Concern at the Site, then Engineer shall notify (1) Owner and (2) appropriate governmental officials if Engineer reasonably concludes that doing so is required by applicable Laws or Regulations.

C. It is acknowledged by both parties that Engineer's scope of services does not include any services related to unknown or undisclosed Constituents of Concern. If Engineer or any other party encounters, uncovers, or reveals an undisclosed Constituent of Concern, then Owner shall promptly determine whether to retain a qualified expert to evaluate such condition or take any necessary corrective action.

D. If investigative or remedial action, or other professional services, are necessary with respect to undisclosed Constituents of Concern, or if investigative or remedial action beyond that reasonably contemplated is needed to address a disclosed or known Constituent of Concern, then Engineer may, at its option and without liability for consequential or any other damages, suspend performance of services on the portion of the Project affected thereby until such portion of the Project is no longer affected.

E. If the presence at the Site of undisclosed Constituents of Concern adversely affects the performance of Engineer's services under this Agreement, then the Engineer shall have the option of (1) accepting an equitable adjustment in its compensation or in the time of completion, or both; or (2) terminating this Agreement for cause on **seven (7) days'** notice.

F. Owner acknowledges that Engineer is performing professional services for Owner and that Engineer is not and shall not be required to become an "owner," "arranger," "operator," "generator," or "transporter" of hazardous substances, as defined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, which are or may be encountered at or near the Site in connection with Engineer's activities under this Agreement.

6.11 *Indemnification and Mutual Waiver*

~~A. *Indemnification by Engineer:* To the fullest extent permitted by Laws and Regulations, Engineer shall indemnify and hold harmless Owner, and Owner's officers, directors, members, partners, agents, consultants, and employees, from losses, damages, and judgments (including reasonable consultants' and attorneys' fees and expenses) arising from third-party claims or actions relating to the Project, provided that any such claim, action, loss, damages, or judgment is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Engineer or Engineer's officers, directors, members, partners, agents, employees, or Consultants.~~ **~~This indemnification provision is subject to and limited by the provisions, if any, agreed to by Owner and Engineer in Exhibit I, "Limitations of Liability."~~**

B. *Indemnification by Owner:* Owner shall indemnify and hold harmless Engineer and its officers, directors, members, partners, agents, employees, and Consultants as required by Laws and Regulations **~~and to the extent (if any) required in Exhibit I, "Limitations of Liability."~~**

C. *Environmental Indemnification:* To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Engineer and its officers, directors, members, partners, agents, employees, and Consultants from all claims, costs, losses, damages, actions, and judgments (including reasonable consultants' and attorneys fees and expenses) caused by, arising out of, relating to, or resulting from a Constituent of Concern at, on, or under the Site, provided that (1) any such claim, cost, loss, damages, action, or judgment is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, and (2) nothing in this paragraph shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence or willful misconduct.

D. *No Defense Obligation:* The indemnification commitments in this Agreement do not include a defense obligation by the indemnitor unless such obligation is expressly stated.

E. *Percentage Share of Negligence:* To the fullest extent permitted by Laws and Regulations, a party's total liability to the other party and anyone claiming by, through, or under the other party for any cost, loss, or damages caused in part by the negligence of the party and in part by the negligence of the other party or any other negligent entity or individual, shall not exceed the percentage share that the party's negligence bears to the total negligence of Owner, Engineer, and all other negligent entities and individuals.

F. *Mutual Waiver:* To the fullest extent permitted by Laws and Regulations, Owner and Engineer waive against each other, and the other's employees, officers, directors, members,

agents, insurers, partners, and consultants, any and all claims for or entitlement to special, incidental, indirect, or consequential damages arising out of, resulting from, or in any way related to this Agreement or the Project, from any cause or causes.

6.12 *Records Retention*

A. Engineer shall establish and maintain complete and accurate books, records, documents, accounts & other evidence directly pertinent to performance under this contract of the Consultant on file in legible form, for a period of **six (6) years** following completion or termination of its services under each Task Order **plus the year in which the Work was completed**; all Documents, records (including cost records), and design calculations related to Consultant's services or pertinent to Consultant's performance under this Agreement.

B. Upon Owner's request, Consultant shall provide access to the Records during normal business hours at an office of the Consultant in the State of New York; if not such office is available, then at a mutually agreeable venue for the purposes of inspection, auditing and copying. Consultant will also ensure the ability to send and utilize electronic/digital files of the same of more efficient transference of Records, per **Paragraph 6.04**. a copy of any such item to Owner at cost.

C. The Owner shall take reasonable steps to protect from public disclosure any of the records which are exempt from disclosure under Section 87 of the Public Officers Law (The "Statute") provided that: (1) the Consultant shall timely inform an appropriate Owner official, in writing, that said records should not be disclosed; and (2) said records shall be sufficiently identified and designation of said records as exempt under the statute is reasonable. Nothing contained herein shall diminish, or in any way affect, the Owners' right to discovery in any pending or future litigation.

6.13 *Miscellaneous Provisions*

A. *Notices:* Any notice required under this Agreement will be in writing, addressed to the appropriate party at its address on the signature page and given personally, by registered or certified mail postage prepaid, or by a commercial courier service. All notices shall be effective upon the date of receipt.

B. *Survival:* All express representations, waivers, indemnifications, and limitations of liability included in this Agreement will survive its completion or termination for any reason.

C. *Severability:* Any provision or part of the Agreement held to be void or unenforceable under any Laws or Regulations shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Engineer, which agree that the Agreement shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

D. *Waiver:* A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Agreement.

E. *Accrual of Claims:* To the fullest extent permitted by Laws and Regulations, all causes of action arising under this Agreement shall be deemed to have accrued, and all statutory periods of limitation shall commence, no later than the date of Substantial Completion.

F. *Discrimination Prohibited:* The services to be furnished and rendered under this agreement by the Consultant shall be available to any and all residents of Essex County without regard to race, color, creed, sex, religion, national or ethnic origin, handicap, or source of payment; and under no circumstances shall a resident's financial ability to pay for the services provided be considered unless such consideration is allowed by State and/or Federal law, rule, or regulation.

G. *Non-Discrimination in Employment:* The consultant will not discriminate against any employee or applicant for employment because of race, color, creed, sex, religion, national or ethnic origin, disability, or marital status. In the event that this is a contract to be performed in whole or in part within the State of New York for (a) the construction, alteration or repair of any public building or public work, (b) for the manufacture, sale of distribution of materials, equipment of supplies, (c) for building service, the Consultant agrees that neither it nor its subcontractors shall, by any race, color, creed, sex, religion, national or ethnic origin, handicap, or marital status:

a. Discriminate in hiring against any citizen who is qualified and available to perform the work; or

b. Discriminate against or intimidate any employee hired for the performance of work under the contract.

ARTICLE 7 – DEFINITIONS

7.01 *Defined Terms*

A. Wherever used in this Agreement (including the Exhibits hereto) terms (including the singular and plural forms) printed with initial capital letters have the meanings indicated in the text above, in the exhibits, or in the following definitions:

1. *Addenda*—Written or graphic instruments issued prior to the opening of bids which clarify, correct, or change the bidding requirements or the proposed Construction Contract Documents.

2. *Additional Services*—The services to be performed for or furnished to Owner by Engineer in accordance with Part 2 of Exhibit A of this Agreement.

3. *Agreement*—This written contract for professional services between Owner and Engineer, including all exhibits identified in Paragraph 8.01 and any duly executed amendments.

4. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Construction Contract.

5. *Basic Services*—The services to be performed for or furnished to Owner by Engineer in accordance with Part 1 of Exhibit A of this Agreement.

6. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Construction Contract Price or the Construction Contract Times, or other revision to the Construction Contract, issued on or after the effective date of the Construction Contract.

7. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth in the Construction Contract, seeking an adjustment in Construction Contract Price or Construction Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Construction Contract Documents or the acceptability of Work under the Construction Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Construction Contract.

8. *Constituent of Concern*—Asbestos, petroleum, radioactive material, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA"); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. ("RCRA"); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, State, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

9. *Construction Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.

10. *Construction Contract Documents*—Those items designated as "Contract Documents" in the Construction Contract, and which together comprise the Construction Contract.

11. *Construction Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Construction Contract Documents.

12. *Construction Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve milestones, if any, in the Construction Contract; (b) achieve Substantial Completion; and (c) complete the Work.

13. *Construction Cost*—The cost to Owner of the construction of those portions of the entire Project designed or specified by or for Engineer under this Agreement, including construction labor, services, materials, equipment, insurance, and bonding costs, and allowances for contingencies. Construction Cost does not include costs of services of Engineer or other design professionals and consultants; cost of land or rights-of-way, or compensation for damages to property; Owner's costs for legal, accounting, insurance counseling, or auditing services; interest or financing charges incurred in connection with the Project; or the cost of other services to be provided by others to Owner. Construction Cost is one of the items comprising Total Project Costs.

14. *Constructor*—Any person or entity (not including the Engineer, its employees, agents, representatives, and Consultants), performing or supporting construction activities relating to the Project, including but not limited to Contractors, Subcontractors, Suppliers, Owner's work forces, utility companies, other contractors, construction managers, testing firms, shippers, and truckers, and the employees, agents, and representatives of any or all of them.

15. *Consultants*—Individuals or entities having a contract with Engineer to furnish services with respect to this Project as Engineer's independent professional associates and consultants; subcontractors; or vendors.

16. *Contractor*—The entity or individual with which Owner enters into a Construction Contract.

17. *Documents*—Data, reports, Drawings, Specifications, Record Drawings, building information models, civil integrated management models, and other deliverables, whether in printed or electronic format, provided or furnished in appropriate phases by Engineer to Owner pursuant to this Agreement.

18. *Drawings*—That part of the Construction Contract Documents that graphically shows the scope, extent, and character of the Work to be performed by Contractor.

19. *Effective Date*—The date indicated in this Agreement on which it becomes effective, but if no such date is indicated, the date on which this Agreement is signed and delivered by the last of the parties to sign and deliver.

20. *Engineer*—The individual or entity named as such in this Agreement.

21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Construction Contract Price or the Construction Contract Times.

22. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

23. *Owner*—The individual or entity named as such in this Agreement and for which Engineer's services are to be performed. Unless indicated otherwise, this is the same individual or entity that will enter into any Construction Contracts concerning the Project.

24. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the services to be performed or furnished by Engineer under this Agreement are a part.

25. *Record Drawings*—Drawings depicting the completed Project, or a specific portion of the completed Project, prepared by Engineer as an Additional Service and based on Contractor's record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications, as delivered to Engineer and annotated by Contractor to show changes made during construction.

26. *Reimbursable Expenses*—The expenses incurred directly by Engineer in connection with the performing or furnishing of Basic Services and Additional Services for the Project.

27. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site during the Construction Phase. As used herein, the term Resident Project Representative or "RPR" includes any assistants or field staff of Resident

Project Representative. The duties and responsibilities of the Resident Project Representative, if any, are as set forth in Exhibit D.

28. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.

29. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Construction Contract Documents.

30. *Site*—Lands or areas to be indicated in the Construction Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.

31. *Specifications*—The part of the Construction Contract Documents that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.

32. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

33. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Construction Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

34. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.

35. *Total Project Costs*—The total cost of planning, studying, designing, constructing, testing, commissioning, and start-up of the Project, including Construction Cost and all other Project labor, services, materials, equipment, insurance, and bonding costs, allowances for contingencies, and the total costs of services of Engineer or other design professionals and consultants, together with such other Project-related costs that Owner furnishes for inclusion, including but not limited to cost of land, rights-of-way, compensation for damages to properties, Owner's costs for legal, accounting, insurance counseling, and auditing services, interest and financing charges incurred in connection with the Project, and the cost of other services to be provided by others to Owner.

36. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Construction Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Construction Contract Documents.

37. *Work Change Directive*—A written directive to Contractor issued on or after the effective date of the Construction Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

B. *Day*:

1. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

ARTICLE 8 – EXHIBITS AND SPECIAL PROVISIONS

8.01 *Exhibits Included:*

A. Exhibit A, Engineer's Services.

B. Exhibit B, Owner's Responsibilities.

C. Exhibit C, Payments to Engineer for Services and Reimbursable Expenses.

D. Exhibit D, Duties, Responsibilities and Limitations of Authority of Resident Project Representative.

E. Exhibit E, EJCDC Notice of Acceptability of Work.

~~F. Exhibit F, Construction Cost Limit.~~

G. Exhibit G, Insurance.

~~H. Exhibit H, Dispute Resolution.~~

~~I. Exhibit I, Limitations of Liability.~~

J. **Exhibit J, Special Provisions – Additional Terms & Conditions to Agreement.**

K. Exhibit K, EJCDC Amendment to Owner-Engineer Agreement.

L. **Exhibit L, Project Schedule.**

M. **Exhibit M, Funding Program Requirements.** *(See solicitation Appendix A)*

N. **Exhibit N, EJCDC Contractor Payment Application.** *(For Inclusion at Bidding)*

O. **Exhibit O, Project Closeout Checklist.** *(For inclusion at Bidding)*

P. **Exhibit P, Engineer's Originating Proposal.**

8.02 *Total Agreement*

A. This Agreement, (together with the exhibits included above) constitutes the entire agreement between Owner and Engineer and supersedes all prior written or oral understandings. This Agreement may only be amended, supplemented, modified, or

canceled by a written instrument duly executed by both parties. Amendments should be based whenever possible on the format of **Exhibit K** to this Agreement.

8.03 *Designated Representatives*

A. With the execution of this Agreement, Engineer and Owner shall designate specific individuals to act as Engineer's and Owner's representatives with respect to the services to be performed or furnished by Engineer and responsibilities of Owner under this Agreement. Such an individual shall have authority to transmit instructions, receive information, and render decisions relative to this Agreement on behalf of the respective party whom the individual represents.

8.04 *Engineer's Certifications*

A. Engineer certifies that it has not engaged in corrupt, fraudulent, or coercive practices in competing for or in executing the Agreement. For the purposes of this **Paragraph 8.04:**

1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the selection process or in the Agreement execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the selection process or the execution of the Agreement to the detriment of Owner, or (b) to deprive Owner of the benefits of free and open competition;

3. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the selection process or affect the execution of the Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, the Effective Date of which is indicated on page 1.

Owner: **TOWNS OF JAY & BLACK BROOK**	Engineer: **TBA**
By:	By:
Print name: **HON. MATTHEW STANLEY** **HON. JON DOUGLASS**	Print name:
Title: **TOWN SUPERVISOR**	Title:
Date Signed:	Date Signed:
	Engineer License or Firm's Certificate No. (if required):
	State of: **NEW YORK**
Address for Owner's receipt of notices:	Address for Engineer's receipt of notices:
PO BOX 730	
JAY, NY 12912	
Designated Representative (**Paragraph 8.03.A)**:	Designated Representative (**Paragraph 8.03.A**):
Rob Wick, PMP	
Title: **Project Management Specialist**	Title:
Phone Number: **(518) 873-3426**	Phone Number:
E-Mail Address: **Rob.wick@essexcountyny.gov**	E-Mail Address:

This is **EXHIBIT A**, consisting of **17** pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated **TBA.**

Engineer's Services

Article 1 of the Agreement is supplemented to include the following agreement of the parties.

Engineer shall provide Basic and Additional Services as set forth below.

PART 1 – BASIC SERVICES

A1.01 *General Requirements:*

A. Engineer shall provide:

1. *Project Schedule.*

a. Produce a project schedule in Gantt chart format at the start of the project as a baseline and continue to keep the schedule updated throughout project.

b. Provide updates to the Owner for any changes to the schedule that may impact the timely execution of the project per the terms of the contract.

2. *Project & Program Management:*

a. Conduct **bi-weekly progress meetings**, a minimum of one (1) project meeting per month, through all phases of design and construction; Engineer will notify Owner of any additional meetings required, whether they be informal, formal or official Board Meetings to pass various Resolutions.

b. Engineer will keep all meeting minutes and distribute to attendees.

c. Engineer will coordinate with Owner (or Owner's Designated Representative) for necessary permits.

d. Ensure Engineer's own contract is compliant by the Owners' funding program requirements, and produce all necessary reports required.

e. Ensure that Owners' Contractors contracts are also compliant per the Owners' funding program requirements, and all necessary reports required are produced.

~~*Study and Report Phase*~~

~~B. Engineer shall:~~

~~1. Consult with Owner to define and clarify Owner's requirements for the Project, including design objectives and constraints, space, capacity and performance requirements, flexibility, and expandability, and any budgetary limitations, and identify available data, information, reports, facilities plans, and site evaluations.~~

a. If Owner has already identified one or more potential solutions to meet its Project requirements, then proceed with the study and evaluation of such potential solutions.

b. If Owner has not identified specific potential solutions for study and evaluation, then assist Owner in determining whether Owner's requirements, and available data, reports, plans, and evaluations, point to a single potential solution for Engineer's study and evaluation, or are such that it will be necessary for Engineer to identify, study, and evaluate multiple potential solutions.

c. If it is necessary for Engineer to identify, study, and evaluate multiple potential solutions, then identify **[2]** alternative solutions potentially available to Owner, unless Owner and Engineer mutually agree that some other specific number of alternatives should be identified, studied, and evaluated.

2. Identify potential solution(s) to meet Owner's Project requirements, as needed.

3. Study and evaluate the potential solution(s) to meet Owner's Project requirements.

4. Visit the Site, or potential Project sites, to review existing conditions and facilities, unless such visits are not necessary or applicable to meeting the objectives of the Study and Report Phase.

5. Advise Owner of any need for Owner to obtain, furnish, or otherwise make available to Engineer additional Project related data and information, for Engineer's use in the study and evaluation of potential solution(s) to Owner's Project requirements, and preparation of a related report.

6. After consultation with Owner, recommend to Owner the solution(s) which in Engineer's judgment meet Owner's requirements for the Project.

7. Identify, consult with, and analyze requirements of governmental authorities having jurisdiction to approve the portions of the Project to be designed or specified by Engineer, including but not limited to mitigating measures identified in an environmental assessment for the Project.

8. Prepare a report (the "Report") which will, as appropriate, contain schematic layouts, sketches, and conceptual design criteria with appropriate exhibits to indicate the agreed-to requirements, considerations involved, and Engineer's recommended solution(s). For each recommended solution Engineer will provide the following, which will be separately itemized: opinion of probable Construction Cost; proposed allowances for contingencies; the estimated total costs of design, professional, and related services to be provided by Engineer and its Consultants; and, on the basis of information furnished by Owner, a tabulation of other items and services included within the definition of Total Project Costs.

9. Advise Owner of any need for Owner to provide data or services of the types described in Exhibit B, for use in Project design, or in preparation for Contractor selection and construction.

10. When mutually agreed, assist Owner in evaluating the possible use of building information modeling; civil integrated management; geotechnical baselining of subsurface site conditions; innovative design, contracting, or procurement strategies; or other strategies, technologies, or techniques for assisting in the design, construction, and

~~operation of Owner's facilities. The subject matter of this paragraph shall be referred to in Exhibit A and B as "Project Strategies, Technologies, and Techniques."~~

~~11. If requested to do so by Owner, assist Owner in identifying opportunities for enhancing the sustainability of the Project, and pursuant to Owner's instructions plan for the inclusion of sustainable features in the design.~~

~~12. Use ASCE 38, "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data" as a means to advise the Owner on a recommended scope of work and procedure for the identification and mapping of existing utilities.~~

~~13. Develop a scope of work and survey limits for any topographic and other surveys necessary for design.~~

~~14. Perform or provide the following other Study and Report Phase tasks or deliverables:~~

~~15. Furnish [**2**] review copies of the Report and any other Study and Report Phase deliverables to Owner within [**90**] days of the Effective Date and review it with Owner. Within [**30**] days of receipt, Owner shall submit to Engineer any comments regarding the furnished items.~~

~~16. Revise the Report and any other Study and Report Phase deliverables in response to Owner's comments, as appropriate, and furnish [**2**] copies of the revised Report and any other Study and Report Phase deliverables to the Owner within [**30**] days of receipt of Owner's comments.~~

~~C. Engineer's services under the Study and Report Phase will be considered complete on the date when Engineer has delivered to Owner the revised Report and any other Study and Report Phase deliverables.~~

A1.02 *Preliminary Design Phase*

A. After acceptance by Owner of the Report and any other Study and Report Phase deliverables; selection by Owner of a recommended solution; issuance by Owner of any instructions of for use of Project Strategies, Technologies, and Techniques, or for inclusion of sustainable features in the design; and indication by Owner of any specific modifications or changes in the scope, extent, character, or design requirements of the Project desired by Owner, (1) Engineer and Owner shall discuss and resolve any necessary revisions to Engineer's compensation (through application of the provisions regarding Additional Services, or otherwise), or the time for completion of Engineer's services, resulting from the selected solution, related Project Strategies, Technologies, or Techniques, sustainable design instructions, or specific modifications to the Project, and (2) upon written authorization from Owner, Engineer shall:

1. *Project Permitting (these are not inclusive; may vary or change during the project):*

    a. Topographic Survey & Map
    b. Boundary Survey & Map
    c. CONSULTANT shall provide technical support as needed to support any permitting process.
    d. CONSULTANT has allocated fees to cover the creation of drawings, technical documents, review of permit related documents and revision as needed

2. Prepare Schematic Design Phase documents consisting of final design criteria, preliminary drawings, outline specifications, and written descriptions of the Project.

3. In preparing the Schematic Design Phase documents, use any specific applicable Project Strategies, Technologies, and Techniques authorized by Owner during or following the Study and Report Phase, and include sustainable features, as appropriate, pursuant to Owner's instructions.

4. Provide necessary field surveys and topographic and utility mapping for Engineer's design purposes. Comply with the scope of work and procedure for the identification and mapping of existing utilities selected and authorized by Owner pursuant to advice from Engineer **based on ASCE 38, "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data,"** as set forth in **Paragraph A1.01.A.12** above. If no such scope of work and procedure for utility mapping has been selected and authorized, then at a minimum the utility mapping will include Engineer contacting utility owners and obtaining available information.

5. Visit the Site as needed to prepare the Schematic Design Phase documents.

6. Advise Owner if additional reports, data, information, or services of the types described in **Exhibit B** are necessary and assist Owner in obtaining such reports, data, information, or services.

7. Continue to assist Owner with Project Strategies, Technologies, and Techniques that Owner has chosen to implement.

8. Based on the information contained in the Schematic Design Phase documents, prepare a revised opinion of probable Construction Cost, and assist Owner in tabulating the various cost categories which comprise Total Project Costs.

9. Obtain and review Owner's instructions regarding Owner's procurement of construction services (including instructions regarding advertisements for bids, instructions to bidders, and requests for proposals, as applicable), Owner's construction contract practices and requirements, insurance and bonding requirements, electronic transmittals during construction, and other information necessary for the finalization of Owner's bidding-related documents (or requests for proposals or other construction procurement documents), and Construction Contract Documents. Also obtain and review copies of Owner's design and construction standards, Owner's standard forms, general conditions (if other than EJCDC® C-700, Standard General Conditions of the Construction Contract, 2013 Edition), supplementary conditions, text, and related documents or content for Engineer to include in the draft bidding-related documents (or requests for proposals or other construction procurement documents), and in the draft Construction Contract Documents, when applicable.

10. Perform or provide the following other Schematic Design Phase tasks or deliverables:

    COORDINATE WITH THE OWNER AND OWNER'S PROJECT TEAM TO SUPPORT EFFORTS IN ACHIEVING ANY AND ALL PERMITTING NECESSARY FOR PROJECT TO REGULATORY AND FUNDING AGENCIES, PRIOR TO FINAL DESIGN AND IN TIME TO SUPPORT BIDDING OF CONSTRUCTION.

11. Furnish **two [2]** review copies of the Schematic Design Phase documents, opinion of probable Construction Cost, and any other Schematic Design Phase deliverables to Owner within **thirty [30]** days of authorization to proceed with this phase, and review them with Owner. Within **ten [10]** days of receipt, Owner shall submit to Engineer any comments regarding the furnished items.

12. Revise the Schematic Design Phase documents, opinion of probable Construction Cost, and any other Schematic Design Phase deliverables in response to Owner's comments, as appropriate, and furnish to Owner **two [2] copies** of the revised Schematic Design Phase documents, revised opinion of probable Construction Cost, and any other deliverables within **fifteen [15] days** after receipt of Owner's **and any required Regulatory Agencies'** comments.

B. Engineer's services under the Schematic Design Phase will be considered complete on the date when Engineer has delivered to Owner the revised Schematic Design Phase documents, revised opinion of probable Construction Cost, and any other Schematic Design Phase deliverables.

A1.03 *Final Design Phase (100% complete Design for Regulatory/Funding Agency reviews)*

A. After acceptance by Owner of the Schematic Design Phase documents, revised opinion of probable Construction Cost as determined in the Schematic Design Phase, and any other Schematic Design Phase deliverables, subject to any Owner-directed modifications or changes in the scope, extent, character, or design requirements of or for the Project, and upon written authorization from Owner, Engineer shall:

1. Prepare final Drawings and Specifications indicating the scope, extent, and character of the Work to be performed and furnished by Contractor.

2. Visit the Site as needed to assist in preparing the final Drawings and Specifications.

3. Provide technical criteria, written descriptions, and design data for Owner's use in filing applications for permits from or approvals of governmental authorities having jurisdiction to review or approve the final design; assist Owner in consultations with such authorities; and revise the Drawings and Specifications in response to directives from such authorities, as appropriate.

4. Advise Owner of any recommended adjustments to the opinion of probable Construction Cost.

5. After consultation with Owner, include in the Construction Contract Documents any specific protocols for the transmittal of Project-related correspondence, documents, text, data, drawings, information, and graphics, in electronic media or digital format, either directly, or through access to a secure Project website. Any such protocols shall be applicable to transmittals between and among Owner, Engineer, and Contractor during the Construction Phase and Post-Construction Phase, and unless agreed otherwise shall supersede any conflicting protocols previously established for transmittals between Owner and Engineer.

6. Assist Owner in assembling known reports and drawings of Site conditions, and in identifying the technical data contained in such reports and drawings upon which bidders or other prospective contractors may rely.

7. In addition to preparing the final Drawings and Specifications, assemble drafts of other Construction Contract Documents based on specific instructions and contract forms, text, or content received from Owner.

8. Prepare or assemble draft bidding-related documents (or requests for proposals or other construction procurement documents), based on the specific bidding or procurement-related instructions and forms, text, or content received from Owner.

9. Perform or provide the following other Final Design Phase tasks or deliverables: **PROVIDE A "FINAL APPROVABLE" SET OF PLANS & SPECS TO REGULATORY AND FUNDING AGENCIES IN SUCH TIME TO ALLOW FOR FORMAL REVIEW ACCEPTANCE PRIOR TO BIDDING CONSTRUCTION PROJECT; PROVIDE COPIES OF PLANS & SPECIFICATIONS TO OWNER UPON ACCEPTANCE BY REGULATORY & FUNDING AGENCIES (PLANS TO BE PROVIDED IN .SHP AND .PDF FILES TYPES).**

10. Furnish for review by Owner, its legal counsel, and other advisors, **two [2] copies** of the final Drawings and Specifications, assembled drafts of other Construction Contract Documents, the draft bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables, within **sixty [60] days** of authorization to proceed with the Final Design Phase, and review them with Owner. Within **fifteen [15] days** of receipt, Owner shall submit to Engineer any comments regarding the furnished items, and any instructions for revisions.

11. Revise the final Drawings and Specifications, assembled drafts of other Construction Contract Documents, the draft bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables in accordance with comments and instructions from the Owner, as appropriate, and submit **two [2] final copies** of such documents to Owner **and any required Regulatory Agencies** within **twenty [20] days** after receipt of Owner's/Agencies comments and instructions.

B. Engineer's services under the Final Design Phase will be considered complete on the date when Engineer has delivered to Owner the final Drawings and Specifications, other assembled Construction Contract Documents, bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables.

C. In the event that the Work designed or specified by Engineer is to be performed or furnished under more than one prime contract, or if Engineer's services are to be separately sequenced with the work of one or more prime Contractors (such as in the case of fast-tracking), Owner and Engineer shall, prior to commencement of the Final Design Phase, develop a schedule for performance of Engineer's services during the Final Design, Bidding, Construction, and Post-Construction Phases in order to sequence and coordinate properly such services as are applicable to the work under such separate prime contracts. This schedule is to be prepared and included in or become an amendment to Exhibit A whether or not the work under such contracts is to proceed concurrently.

D. The number of prime contracts for Work designed or specified by Engineer upon which the Engineer's compensation has been established under this Agreement is **[4 - GENERAL CONTRACTION, PLUMBING, MECHANICAL AND ELECTRICAL.** If more prime contracts are awarded, Engineer shall be entitled to an equitable increase in its compensation under this Agreement.

A1.04 *Bidding Phase (incl. Program Compliant "Construction Documents")*

A. After acceptance by Owner of the final Drawings and Specifications, other Construction Contract Documents, bidding-related documents (or requests for proposals or other construction procurement documents), and the most recent opinion of probable Construction Cost as determined in the Final Design Phase, and upon written authorization by Owner to proceed, Engineer shall:

1. Conduct a Pre-Bidding Conference and ensure all potential Bidders are cognizant of any special considerations, to include Funding Agency requirements.

2. Assist Owner in advertising for and obtaining bids or proposals for the Work, assist Owner in issuing assembled design, contract, and bidding-related documents (or requests for proposals or other construction procurement documents) to prospective contractors, and, where applicable, maintain a record of prospective contractors to which documents have been issued, attend pre-bid conferences, if any, and receive and process contractor deposits or charges for the issued documents.

3. Prepare and issue Addenda as appropriate to clarify, correct, or change the issued documents.

4. Provide information or assistance needed by Owner in the course of any review of proposals or negotiations with prospective contractors.

5. Consult with Owner as to the qualifications of prospective contractors.

6. Consult with Owner as to the qualifications of ubcontractors, suppliers, and other individuals and entities proposed by prospective contractors, for those portions of the Work as to which review of qualifications is required by the issued documents.

7. If the issued documents require, the Engineer shall evaluate and determine the acceptability of "or equals" and substitute materials and equipment proposed by prospective contractors, provided that such proposals are allowed by the bidding-related documents (or requests for proposals or other construction procurement documents) prior to award of contracts for the Work. Services under this paragraph are subject to the provisions of **Paragraph A2.02.A.2 of this Exhibit A.**

8. Attend the bid opening, prepare bid tabulation sheets to meet Owner's schedule, and assist Owner in evaluating bids or proposals, assembling final contracts for the Work for execution by Owner and Contractor, and in issuing notices of award of such contracts.

9. If Owner engages in negotiations with bidders or proposers, assist Owner with respect to technical and engineering issues that arise during the negotiations.

10. Perform or provide the following other Bidding Phase tasks or deliverables:

ENSURE ALL FUNDING REQUIREMENTS THAT THE PROJECT MUST BE COMPLIANT TO ARE CLEARLY CITED IN THE CONTRACT DOCUMENTS, TO ENSURE CONTRATOR(S) HAVE ALL NECESSARY AGENCY PLAN & REPORT FORMS TO POPULATE, PER EXHIBIT M.

B. The Bidding Phase will be considered complete upon commencement of the Construction Phase or upon cessation of negotiations with prospective contractors (except as may be required if **Exhibit F** is a part of this Agreement).

A1.05 *Construction Phase*

A. Upon successful completion of the Bidding Phase, and upon written authorization from Owner, Engineer shall:

1. *General Administration of Construction Contract:* Consult with Owner and act as Owner's representative as provided in the Construction Contract. The extent and limitations of the duties, responsibilities, and authority of Engineer shall be as assigned in EJCDC® C-700, Standard General Conditions of the Construction Contract (2013 Edition), prepared by the Engineers Joint Contract Documents Committee, or other construction general conditions specified in this Agreement. If Owner, or Owner and Contractor, modify the duties, responsibilities, and authority of Engineer in the Construction Contract, or modify other terms of the Construction Contract having a direct bearing on Engineer, then Owner shall compensate Engineer for any related increases in the cost to provide Construction Phase services. Engineer shall not be required to furnish or perform services contrary to Engineer's responsibilities as a licensed professional. All of Owner's instructions to Contractor will be issued through Engineer, which shall have authority to act on behalf of Owner in dealings with Contractor to the extent provided in this Agreement and the Construction Contract except as otherwise provided in writing.

2. ***Resident Project Representative (RPR):*** Provide the services of an RPR at the Site to assist the Engineer and to provide more extensive observation of Contractor's work. Duties, responsibilities, and authority of the RPR are as set forth in **Exhibit D**. The furnishing of such RPR's services will not limit, extend, or modify Engineer's responsibilities or authority except as expressly set forth in **Exhibit D.**

3. **Additionally, RPR will conduct Wage Rate Interviews for any applicable HUD funding per Exhibit M, as required.**

~~**4.** *Selection of Independent Testing Laboratory:* Assist Owner in the selection of an independent testing laboratory to perform the services identified in **Exhibit B, Paragraph B2.01.**~~

5. *Pre-Construction Conference:* Participate in a pre-construction conference prior to commencement of Work at the Site.

6. *Electronic Transmittal Protocols:* If the Construction Contract Documents do not specify protocols for the transmittal of Project-related correspondence, documents, text, data, drawings, information, and graphics, in electronic media or digital format, either directly, or through access to a secure Project website, then together with Owner and Contractor jointly develop such protocols for transmittals between and among Owner, Contractor, and Engineer during the Construction Phase and Post-Construction Phase.

7. *Original Documents:* If requested by Owner to do so, maintain and safeguard during the Construction Phase at least one original printed record version of the Construction Contract Documents, including Drawings and Specifications signed and sealed by Engineer and other design professionals in accordance with applicable Laws and Regulations. Throughout the Construction Phase, make such original printed record

version of the Construction Contract Documents available to Contractor and Owner for review.

8. *Schedules:* Receive, review, and determine the acceptability of any and all schedules that Contractor is required to submit to Engineer, including the Progress Schedule, Schedule of Submittals, and Schedule of Values.

9. *Baselines and Benchmarks:* As appropriate, establish baselines and benchmarks for locating the Work which in Engineer's judgment are necessary to enable Contractor to proceed.

10. *Visits to Site and Observation of Construction:* In connection with observations of Contractor's Work while it is in progress:

    a. Make visits to the Site at intervals appropriate to the various stages of construction, as Engineer deems necessary, to observe as an experienced and qualified design professional the progress of Contractor's executed Work. Such visits and observations by Engineer, and the Resident Project Representative, if any, are not intended to be exhaustive or to extend to every aspect of the Work or to involve detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in this Agreement and the Construction Contract Documents, but rather are to be limited to spot checking, selective sampling, and similar methods of general observation of the Work based on Engineer's exercise of professional judgment, as assisted by the Resident Project Representative, if any. Based on information obtained during such visits and observations, Engineer will determine in general if the Work is proceeding in accordance with the Construction Contract Documents, and Engineer shall keep Owner informed of the progress of the Work.

    b. The purpose of Engineer's visits to the Site, and representation by the Resident Project Representative, if any, at the Site, will be to enable Engineer to better carry out the duties and responsibilities assigned to and undertaken by Engineer during the Construction Phase, and, in addition, by the exercise of Engineer's efforts as an experienced and qualified design professional, to provide for Owner a greater degree of confidence that the completed Work will conform in general to the Construction Contract Documents and that Contractor has implemented and maintained the integrity of the design concept of the completed Project as a functioning whole as indicated in the Construction Contract Documents. Engineer shall not, during such visits or as a result of such observations of the Work, supervise, direct, or have control over the Work, nor shall Engineer have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected or used by any Constructor, for security or safety at the Site, for safety precautions and programs incident to any Constructor's work in progress, for the coordination of the Constructors' work or schedules, nor for any failure of any Constructor to comply with Laws and Regulations applicable to furnishing and performing of its work. Accordingly, Engineer neither guarantees the performance of any Constructor nor assumes responsibility for any Constructor's failure to furnish or perform the Work, or any portion of the Work, in accordance with the Construction Contract Documents.

11. *Defective Work:* Reject Work if, on the basis of Engineer's observations, Engineer believes that such Work is defective under the terms and standards set forth in the Construction Contract Documents. Provide recommendations to Owner regarding

whether Contractor should correct such Work or remove and replace such Work, or whether Owner should consider accepting such Work as provided in the Construction Contract Documents.

12. *Compatibility with Design Concept:* If Engineer has express knowledge that a specific part of the Work that is not defective under the terms and standards set forth in the Construction Contract Documents is nonetheless not compatible with the design concept of the completed Project as a functioning whole, then inform Owner of such incompatibility, and provide recommendations for addressing such Work.

13. *Clarifications and Interpretations:* Accept from Contractor and Owner submittal of all matters in question concerning the requirements of the Construction Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Construction Contract Documents. With reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Construction Contract Documents.

14. *Non-reviewable Matters:* If a submitted matter in question concerns the Engineer's performance of its duties and obligations, or terms and conditions of the Construction Contract Documents that do not involve (1) the performance or acceptability of the Work under the Construction Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer will not provide a decision or interpretation.

15. *Field Orders:* Subject to any limitations in the Construction Contract Documents, Engineer may prepare and issue Field Orders requiring minor changes in the Work.

16. *Change Orders and Work Change Directives:* Recommend Change Orders and Work Change Directives to Owner, as appropriate, and prepare Change Orders and Work Change Directives as required.

17. *Differing Site Conditions:* Respond to any notice from Contractor of differing site conditions, including conditions relating to underground facilities such as utilities, and hazardous environmental conditions. Promptly conduct reviews and prepare findings, conclusions, and recommendations for Owner's use.

18. *Shop Drawings, Samples, and Other Submittals:* Review and approve or take other appropriate action with respect to Shop Drawings, Samples, and other required Contractor submittals, but only for conformance with the information given in the Construction Contract Documents and compatibility with the design concept of the completed Project as a functioning whole as indicated by the Construction Contract Documents. Such reviews and approvals or other action will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions and programs incident thereto. Engineer shall meet any Contractor's submittal schedule that Engineer has accepted.

19. *Substitutes and "Or-equal":* Evaluate and determine the acceptability of substitute or "or-equal" materials and equipment proposed by Contractor, but subject to the provisions of **Paragraph A2.02.A.2 of this Exhibit A.**

20. *Inspections and Tests:*

    a. Receive and review all certificates of inspections, tests, and approvals required by Laws and Regulations or the Construction Contract Documents. Engineer's review of such certificates will be for the purpose of determining that the results certified indicate compliance with the Construction Contract Documents and will not constitute an independent evaluation that the content or procedures of such inspections, tests, or approvals comply with the requirements of the Construction Contract Documents. Engineer shall be entitled to rely on the results of such inspections and tests.

    b. As deemed reasonably necessary, request that Contractor uncover Work that is to be inspected, tested, or approved.

    c. Pursuant to the terms of the Construction Contract, require special inspections or testing of the Work, whether or not the Work is fabricated, installed, or completed.

21. *Change Proposals and Claims:* (a) Review and respond to Change Proposals. Review each duly submitted Change Proposal from Contractor and, within **ten (10) days** after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part **such that the Owner can pay the Contractor within a thirty (30) day term from invoice submission.** Such actions shall be in writing, with a copy provided to Owner and Contractor. If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer will not resolve the Change Proposal. (b) Provide information or data to Owner regarding engineering or technical matters pertaining to Claims.

22. *Applications for Payment:* Based on Engineer's observations as an experienced and qualified design professional and on review of Applications for Payment and accompanying supporting documentation:

    a. Determine the amounts that Engineer recommends Contractor be paid. Recommend reductions in payment (set-offs) based on the provisions for set-offs stated in the Construction Contract. Such recommendations of payment will be in writing and will constitute Engineer's representation to Owner, based on such observations and review, that, to the best of Engineer's knowledge, information and belief, Contractor's Work has progressed to the point indicated, the Work is generally in accordance with the Construction Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Construction Contract Documents, and to any other qualifications stated in the recommendation), and the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work. In the case of unit price Work, Engineer's recommendations of payment will include final determinations of quantities and classifications of the Work (subject to any subsequent adjustments allowed by the Construction Contract Documents).

    b. By recommending payment, Engineer shall not thereby be deemed to have represented that observations made by Engineer to check the quality or quantity of Contractor's Work as it is performed and furnished have been exhaustive, extended to every aspect of Contractor's Work in progress, or involved detailed inspections of

the Work beyond the responsibilities specifically assigned to Engineer in this Agreement. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment including final payment will impose on Engineer responsibility to supervise, direct, or control the Work, or for the means, methods, techniques, sequences, or procedures of construction or safety precautions or programs incident thereto, or Contractor's compliance with Laws and Regulations applicable to Contractor's furnishing and performing the Work. It will also not impose responsibility on Engineer to make any examination to ascertain how or for what purposes Contractor has used the money paid to Contractor by Owner; ~~to determine that title to any portion of the Work, including materials or equipment, has passed to Owner free and clear of any liens, claims, security interests, or encumbrances;~~ or that there may not be other matters at issue between Owner and Contractor that might affect the amount that should be paid.

23. *Contractor's Completion Documents:* Receive from Contractor, review, and transmit to Owner maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance required by the Construction Contract Documents, certificates of inspection, tests and approvals, and Shop Drawings, **Record Drawings,** Samples, and other data approved as provided under **Paragraph A1.05.A.17.** Receive from Contractor, review, and transmit to Owner the annotated record documents which are to be assembled by Contractor in accordance with the Construction Contract Documents to obtain final payment. The extent of Engineer's review of record documents shall be to check that Contractor has submitted all pages. **Engineer shall ensure that all Project Closeout documents listed in Exhibit P, "Project Closeout Checklist", are secured prior to issuing the "Notice of Acceptability of Work". Provided in Exhibit E.**

24. *Substantial Completion:* Promptly after notice from Contractor that Contractor considers the entire Work ready for its intended use, in company with Owner and Contractor, visit the Site to review the Work and determine the status of completion. Follow the procedures in the Construction Contract regarding the preliminary certificate of Substantial Completion, punch list of items to be completed, Owner's objections, notice to Contractor, and issuance of a final certificate of Substantial Completion. Assist Owner regarding any remaining engineering or technical matters affecting Owner's use or occupancy of the Work following Substantial Completion.

25. *Other Tasks:* Perform or provide the following other Construction Phase tasks or deliverables: **ENSURE ALL DELIVERABLES THROUGH CONSTRUCTION ADMINISTRATION ARE COMPLIANT AND IN ACCORDANCE WITH FUNDING PROGRAM REQUIREMENTS, LISTED IN EXHIBIT M.**

26. *Final Notice of Acceptability of the Work:* Conduct a final visit to the Project to determine if the Work is complete and acceptable so that Engineer may recommend, in writing, final payment to Contractor. Accompanying the recommendation for final payment, Engineer shall also provide a notice to Owner and Contractor in the form attached hereto as **Exhibit E ("Notice of Acceptability of Work")** that the Work is acceptable (subject to the provisions of the Notice and **Paragraph A1.05.A.21.b**) to the best of Engineer's knowledge, information, and belief, and based on the extent of the services provided by Engineer under this Agreement.

27. *Standards for Certain Construction-Phase Decisions:* Engineer will render decisions regarding the requirements of the Construction Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth in the Construction Contract for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

B. *Duration of Construction Phase:* The Construction Phase will commence with the execution of the first Construction Contract for the Project or any part thereof and will terminate upon written recommendation by Engineer for final payment to Contractors. If the Project involves more than one prime contract as indicated in **Paragraph A1.03.D,** then Construction Phase services may be rendered at different times in respect to the separate contracts. Subject to the provisions of **Article 3**, Engineer shall be entitled to an equitable increase in compensation if Construction Phase services (including Resident Project Representative services, if any) are required after the original date for completion and readiness for final payment of Contractor as set forth in the Construction Contract.

A1.06 *Close Out*

A. Upon written authorization from Owner during the Post-Construction Phase, Engineer shall:

1. Together with Owner, visit the Project to observe any apparent defects in the Work, make recommendations as to replacement or correction of defective Work, if any, or the need to repair of any damage to the Site or adjacent areas, and assist Owner in consultations and discussions with Contractor concerning correction of any such defective Work and any needed repairs.

~~2. Together with Owner, visit the Project within one month before the end of the Construction Contract's correction period to ascertain whether any portion of the Work or the repair of any damage to the Site or adjacent areas is defective and therefore subject to correction by Contractor.~~

3. Perform or provide the following other ~~Post-Construction~~ Close Out Phase tasks or deliverables:

ENSURE ALL NECESSARY PROGRAM MANAGEMENT & DOCUMENTS ADDRESS FUNDING AGENCY REQUIREMENTS AS DEFINED IN <u>EXHIBIT M.</u>

B. The Post-Construction/Close Out Phase services may commence during the Construction Phase and, if not otherwise modified in this Exhibit A, will terminate ~~twelve~~ **two** months after the commencement of the Construction Contract's correction period.

PART 2 – ADDITIONAL SERVICES

A2.01 *Additional Services Requiring Owner's <u>Written Authorization</u>*

A. If authorized in writing by Owner, Engineer shall provide Additional Services of the types listed below. These services are not included as part of Basic Services and will be paid for by Owner as indicated in **Exhibit C.**

1. Preparation of applications and supporting documents (in addition to those furnished under Basic Services) for private or governmental grants, loans, or advances in connection with the Project; preparation or review of environmental assessments and impact statements; review and evaluation of the effects on the design requirements for the Project of any such statements and documents prepared by others; and assistance in obtaining approvals of authorities having jurisdiction over the anticipated environmental impact of the Project.

2. Services to make measured drawings of existing conditions or facilities, to conduct tests or investigations of existing conditions or facilities, or to verify the accuracy of drawings or other information furnished by Owner or others.

3. Services resulting from significant changes in the scope, extent, or character of the portions of the Project designed or specified by Engineer, or the Project's design requirements, including, but not limited to, changes in size, complexity, Owner's schedule, character of construction, or method of financing; and revising previously accepted studies, reports, Drawings, Specifications, or Construction Contract Documents when such revisions are required by changes in Laws and Regulations enacted subsequent to the Effective Date or are due to any other causes beyond Engineer's control.

4. Services resulting from Owner's request to evaluate additional Study and Report Phase alternative solutions beyond those agreed to in **Paragraph A1.01.A.1 and 2.**

5. Services required as a result of Owner's providing incomplete or incorrect Project information to Engineer.

6. Providing renderings or models for Owner's use, including services in support of building information modeling or civil integrated management.

   NOTE: A PRIMARY DELIVERABLE OF THIS CONTRACT IS TO PROVIDE OWNER AN ELECTRONIC SET OF PROJECT DESIGN DATA TO INCLUDE ANY MAPS, DESIGNS, SPECIFICATIONS, ETC. USED IN CONJUNCTION WITH ESTABLISHING CONSTRUCTION DOCUMENTS (.pdf & .shp file type); THIS ACTIVITY IS NOT SUBJECT TO INTERPRETATION AS AN "ADDITIONAL SERVICE".

7. Undertaking investigations and studies including, but not limited to:

   a. detailed consideration of operations, maintenance, and overhead expenses;

   ~~b. the preparation of feasibility studies (such as those that include projections of output capacity, utility project rates, project market demand, or project revenues) and cash flow analyses, provided that such services are based on the engineering and technical aspects of the Project, and do not include rendering advice regarding municipal financial products or the issuance of municipal securities;~~

   ~~c. preparation of appraisals;~~

   ~~d. evaluating processes available for licensing, and assisting Owner in obtaining process licensing;~~

   ~~e. detailed quantity surveys of materials, equipment, and labor; and~~

~~f. audits or inventories required in connection with construction performed or furnished by Owner.~~

NOTE: AS A PART OF THE CONSTRUTION PHASE ADMINISTRATION SERVICES, THE ENGINEER IS EXPECTED TO PROVIDE ANALYSIS OF THE CONTRACTOR'S PAYMENT APPLICATIONS FOR ACCURACY REMITTED EACH MONTH, PER ATTACHED FORMS IN EXHIBITS, AND NOT SUBJECT TO INTERPRETATION AS AN "ADDITIONAL SERVICE".

8. Furnishing services of Consultants for other than Basic Services.

9. Providing data or services of the types described in **Exhibit B**, when Owner retains Engineer to provide such data or services instead of Owner furnishing the same.

10. Providing the following services:

    a. Services attributable to more prime construction contracts than specified in **Paragraph A1.03. D.**

    b. Services to arrange for performance of construction services for Owner by contractors other than the principal prime Contractor and administering Owner's contract for such services.

11. Services during out-of-town travel required of Engineer, ***other than for visits to the Site or Owner's office as required in*** **Basic Services (Part 1 of Exhibit A).**

12. Preparing for, coordinating with, participating in and responding to structured independent review processes, including, but not limited to, construction management, cost estimating, project peer review, value engineering, and constructibility review requested by Owner; and performing or furnishing services required to revise studies, reports, Drawings, Specifications, or other documents as a result of such review processes.

13. Preparing additional bidding-related documents (or requests for proposals or other construction procurement documents) or Construction Contract Documents for alternate bids or cost estimates requested by Owner for the Work or a portion thereof.

14. Assistance in connection with bid protests, rebidding, or renegotiating contracts for construction, materials, equipment, or services, except when such assistance is required to complete services required by **Paragraph 5.02.A and Exhibit F.**

15. Preparing conformed Construction Contract Documents that incorporate and integrate the content of all Addenda and any amendments negotiated by Owner and Contractor.

16. Providing Construction Phase services beyond the original date for completion and readiness for final payment of Contractor, but only if such services increase the total quantity of services to be performed in the Construction Phase, rather than merely shifting performance of such services to a later date.

17. Preparing Record Drawings, and furnishing such Record Drawings to Owner.

NOTE: ENGINEER SHALL CITE IN CONSTRUCTION DOCUMENTS THAT THE CONTRACTOR IS RESPONSIBLE TO PROVIDE (2) SETS OF RECORD

DRAWINGS, AND ENGINEER SHALL REVIEW FOR ACCURACY AND APPLY ANY NECESSARY MARKUPS, AS REQUIRED AS A NORMAL CONSTRUCTION PHASE SERVICES ACTIVITY, NOT SUBJECT TO INTERPRETATION AS "ADDITIONAL SERVICES".

18. Supplementing Record Drawings with information regarding the completed Project, Site, and immediately adjacent areas obtained from field observations, Owner, utility companies, and other reliable sources.

19. Conducting surveys, investigations, and field measurements to verify the accuracy of Record Drawing content obtained from Contractor, Owner, utility companies, and other sources; revise and supplement Record Drawings as needed.

20. Preparation of operation, maintenance, and staffing manuals.

21. Protracted or extensive assistance in refining and adjusting of Project equipment and systems (such as initial startup, testing, and balancing).

22. Assistance to Owner in training Owner's staff to operate and maintain Project equipment and systems.

23. Assistance to Owner in developing systems and procedures for (a) control of the operation and maintenance of Project equipment and systems, and (b) related recordkeeping.

24. Preparing to serve or serving as a consultant or witness for Owner in any litigation, arbitration, lien or bond claim, or other legal or administrative proceeding involving the Project.

25. Overtime work requiring higher than regular rates.

26. Providing construction surveys and staking to enable Contractor to perform its work other than as required under **Paragraph A1.05.A.8;** any type of property surveys or related engineering services needed for the transfer of interests in real property; and providing other special field surveys.

27. Providing more extensive services required to enable Engineer to issue notices or certifications requested by Owner.

28. Extensive services required during any correction period, or with respect to monitoring Contractor's compliance with warranties and guarantees called for in the Construction Contract (except as agreed to under Basic Services).

29. Other additional services performed or furnished by Engineer not otherwise provided for in this Agreement.

A2.02 *Additional Services Not Requiring Owner's Written Authorization*

A. Engineer shall advise Owner that Engineer is commencing to perform or furnish the Additional Services of the types listed below. For such Additional Services, Engineer need not request or obtain specific advance written authorization from Owner. Engineer shall cease performing or furnishing such Additional Services upon receipt of written notice to cease from Owner.

1. Services in connection with Work Change Directives and Change Orders to reflect changes requested by Owner.

2. Services in making revisions to Drawings and Specifications occasioned by the acceptance of substitute materials or equipment other than "or equal" items; services after the award of the Construction Contract in evaluating and determining the acceptability of a proposed "or equal" or substitution which is found to be inappropriate for the Project; evaluation and determination of an excessive number of proposed "or equals" or substitutions, whether proposed before or after award of the Construction Contract.
   NOTE: ENGINEER SHALL COMMUNICATE TO OWNER ANY CHANGES TO THE PLANS & SPECIFICATIONS THAT RESULT IN PRODUCT CHANGES THAT DO NOT MEET THE EXISTING CONFIGURATION MANAGEMENT OR PRODUCT STANDARDS, PER THE ORIGINATING RFP, APPENDIX P.

3. Services resulting from significant delays, changes, or price increases occurring as a direct or indirect result of materials, equipment, or energy shortages.

4. Additional or extended services arising from (a) the presence at the Site of any Constituent of Concern or items of historical or cultural significance, (b) emergencies or acts of God endangering the Work, (c) damage to the Work by fire or other causes during construction, (d) a significant amount of defective, neglected, or delayed Work, (e) acceleration of the progress schedule involving services beyond normal working hours, or (f) default by Contractor.

5. Services (other than Basic Services during the Post-Construction Phase) in connection with any partial utilization of the Work by Owner prior to Substantial Completion.

6. Evaluating unreasonable or frivolous requests for interpretation or information (RFIs), Change Proposals, or other demands from Contractor or others in connection with the Work, or an excessive number of RFIs, Change Proposals, or demands.

7. Reviewing a Shop Drawing or other Contractor submittal more than three times, as a result of repeated inadequate submissions by Contractor.

8. While at the Site, compliance by Engineer and its staff with those terms of Owner's or Contractor's safety program provided to Engineer subsequent to the Effective Date that exceed those normally required of engineering personnel by federal, State, or local safety authorities for similar construction sites.

This is **EXHIBIT B**, consisting of **4** pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated **TBA**.

Owner's Responsibilities

Article 2 of the Agreement is supplemented to include the following agreement of the parties.

B2.01 In addition to other responsibilities of Owner as set forth in this Agreement, Owner shall at its expense:

A. Provide Engineer with all criteria and full information as to Owner's requirements for the Project, including design objectives and constraints, space, capacity and performance requirements, flexibility, and expandability, and any budgetary limitations.

B. Give instructions to Engineer regarding Owner's procurement of construction services (including instructions regarding advertisements for bids, instructions to bidders, and requests for proposals, as applicable), Owner's construction contract practices and requirements, insurance and bonding requirements, electronic transmittals during construction, and other information necessary for the finalization of Owner's bidding-related documents (or requests for proposals or other construction procurement documents), and Construction Contract Documents. Furnish copies (or give specific directions requesting Engineer to use copies already in Engineer's possession) of all design and construction standards, Owner's standard forms, general conditions (if other than EJCDC® C-700, Standard General Conditions of the Construction Contract, 2013 Edition), supplementary conditions, text, and related documents and content for Engineer to include in the draft bidding-related documents (or requests for proposals or other construction procurement documents), and draft Construction Contract Documents, when applicable. Owner shall have responsibility for the final content of (1) such bidding-related documents (or requests for proposals or other construction procurement documents), and (2) those portions of any Construction Contract other than the design (as set forth in the Drawings, Specifications, or otherwise), and other engineering or technical matters; and Owner shall seek the advice of Owner's legal counsel, risk managers, and insurance advisors with respect to the drafting and content of such documents.

C. Furnish to Engineer any other available information pertinent to the Project including reports and data relative to previous designs, construction, or investigation at or adjacent to the Site.

D. Following Engineer's assessment of initially-available Project information and data and upon Engineer's request, obtain, furnish, or otherwise make available (if necessary through title searches, or retention of specialists or consultants) such additional Project-related information and data as is reasonably required to enable Engineer to complete its Basic and Additional Services. Such additional information or data would generally include the following:

1. Property descriptions.

2. Zoning, deed, and other land use restrictions.

~~3. Utility and topographic mapping and surveys.~~

4. Property, boundary, easement, right-of-way, and other special surveys or data, including establishing relevant reference points.

~~5.~~ Explorations and tests of subsurface conditions at or adjacent to the Site; ~~geotechnical reports and investigations~~; drawings of physical conditions relating to existing surface or subsurface structures at the Site; hydrographic surveys, ~~laboratory tests and inspections of samples, materials, and equipment; with appropriate professional interpretation of such information or data.~~

6. Environmental assessments, audits, investigations, and impact statements, and other relevant environmental, historical, or cultural studies relevant to the Project, the Site, and adjacent areas.

7. Data or consultations as required for the Project but not otherwise identified in this Agreement.

E. Arrange for safe access to and make all provisions for Engineer to enter upon public and private property as required for Engineer to perform services under the Agreement.

F. Recognizing and acknowledging that Engineer's services and expertise do not include the following services, provide, as required for the Project:

1. Accounting, bond and financial advisory (including, if applicable, "municipal advisor" services as described in Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (2010) and the municipal advisor registration rules issued by the Securities and Exchange Commission), independent cost estimating, and insurance counseling services.

2. Legal services with regard to issues pertaining to the Project as Owner requires, Contractor raises, or Engineer reasonably requests.

3. Such auditing services as Owner requires to ascertain how or for what purpose Contractor has used the money paid.

~~G. Provide the services of an independent testing laboratory to perform all inspections, tests, and approvals of samples, materials, and equipment required by the Construction Contract Documents (other than those required to be furnished or arranged by Contractor), or to evaluate the performance of materials, equipment, and facilities of Owner, prior to their incorporation into the Work with appropriate professional interpretation thereof. Provide Engineer with the findings and reports generated by testing laboratories, including findings and reports obtained from or through Contractor.~~

NOTE: THE ENGINEER SHALL PROVIDE AND/OR PROCURE AND NECESSARY TESTING THAT NEEDS TO OCCUR IN ORDER TO PRODUCE CONSTRUCTION DOCUMENTS. THE ENGINEER SHALL CITE IN CONSTRUCTION DOCUMENTS THE REQUISITE CONSTRUCTION PERMITTING, AND THAT THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CONSTRUCTION PHASE TESTING THAT IS NECESSARY.

~~H. Provide reviews, approvals, and permits from all governmental authorities having jurisdiction to approve all phases of the Project designed or specified by Engineer and such reviews, approvals, and consents from others as may be necessary for completion of each phase of the Project.~~

NOTE: THE ENGINEER IS RESPONSIBLE TO WORK WITH OWNER RESOURCES FROM COUNTY DEPARTMENTS TO SECURE ALL NECESSARY PERMITTING AND ENVIRONMENTAL APPROVALS FOR THE PROJECT.

I. Advise Engineer of the identity and scope of services of any independent consultants employed by Owner to perform or furnish services in regard to the Project, including, but not limited to, cost estimating, project peer review, value engineering, and constructability review.

J. If Owner designates a construction manager or an individual or entity other than, or in addition to, Engineer to represent Owner at the Site, define and set forth as an attachment to this **Exhibit B** the duties, responsibilities, and limitations of authority of such other party and the relation thereof to the duties, responsibilities, and authority of Engineer.

K. If more than one prime contract is to be awarded for the Work designed or specified by Engineer, then designate a person or entity to have authority and responsibility for coordinating the activities among the various prime Contractors, and define and set forth the duties, responsibilities, and limitations of authority of such individual or entity and the relation thereof to the duties, responsibilities, and authority of Engineer as an attachment to this **Exhibit B** that is to be mutually agreed upon and made a part of this Agreement before such services begin.

L. Inform Engineer in writing of any specific requirements of safety or security programs that are applicable to Engineer, as a visitor to the Site.

M. Examine all alternative solutions, studies, reports, sketches, Drawings, Specifications, proposals, and other documents presented by Engineer (including obtaining advice of an attorney, risk manager, insurance counselor, financial/municipal advisor, and other advisors or consultants as Owner deems appropriate with respect to such examination) and render in writing timely decisions pertaining thereto.

N. Inform Engineer regarding any need for assistance in evaluating the possible use of Project Strategies, Technologies, and Techniques, as defined in **Exhibit A**.

O. Advise Engineer as to whether Engineer's assistance is requested in identifying opportunities for enhancing the sustainability of the Project.

P. Place and pay for advertisement for Bids in appropriate publications.

Q. Furnish to Engineer data as to Owner's anticipated costs for services to be provided by others (including, but not limited to, accounting, bond and financial, independent cost estimating, insurance counseling, and legal advice) for Owner so that Engineer may assist Owner in collating the various cost categories which comprise Total Project Costs.

R. Attend and participate in the pre-bid conference, bid opening, pre-construction conferences, construction progress and other job-related meetings, and Site visits to determine Substantial Completion and readiness of the completed Work for final payment.

S. Authorize Engineer to provide Additional Services as set forth in **Part 2 of Exhibit A** of the Agreement, as required.

T. Perform or provide the following: (**SEE EXHIBIT J and EXHIBIT P**)

This is **EXHIBIT C**, consisting of **2** pages, referred to in and part of the Agreement between Owner and Engineer for Professional Services dated **TBA**.

Payments to Engineer for Services and Reimbursable Expenses
COMPENSATION PACKET BC-1: Basic Services – Lump Sum

Article 2 of the Agreement is supplemented to include the following agreement of the parties:

ARTICLE 2 – OWNER'S RESPONSIBILITIES

C2.01 *Compensation for Basic Services (other than Resident Project Representative) – Lump Sum Method of Payment*

A. Owner shall pay Engineer for Basic Services set forth in **Exhibit A**, *except for services of Engineer's Resident Project Representative*, if any, as follows:

1. A Lump Sum amount of **$TBA** based on the following estimated distribution of compensation, **and per the cost proposal included in Exhibit P**:

a.	**General Requirements**	**$TBA**
b.	**Inspection & Maintenance Plan**	**$TBA**
c.	**Preliminary Design Phase**	**$TBA**
d.	**Final Design Phase**	**$TBA**
e.	**Bidding Phase**	**$TBA**
f.	**Construction Phase**	**$TBA**
g.	**Post-Construction Phase**	**$TBA**

2. Engineer may alter the distribution of compensation between individual phases noted herein to be consistent with services actually rendered, but shall not exceed the total Lump Sum amount unless approved in writing by the Owner.

3. The Lump Sum includes compensation for Engineer's services and services of Engineer's Consultants, if any. Appropriate amounts have been incorporated in the Lump Sum to account for labor costs, overhead, profit, expenses (other than any expressly allowed Reimbursable Expenses), and Consultant charges.

4. In addition to the Lump Sum, Engineer is also entitled to reimbursement from Owner for the following **Reimbursable Expenses (to include fees for Resident Project Representative included in "Compensation Packet RPR-2". Also see Appendix 1 for rates or charges**): **$TBA**

5. The portion of the Lump Sum amount billed for Engineer's services will be based upon Engineer's estimate of the percentage of the total services actually completed during the billing period. If any Reimbursable Expenses are expressly allowed, Engineer may also bill for any such Reimbursable Expenses incurred during the billing period.

B. *Period of Service:* The compensation amount stipulated in **Compensation Packet BC-1** is conditioned on a period of service **not exceeding August 1st, 2023.** If such period of service is extended, the compensation amount for Engineer's services shall be appropriately adjusted.

COMPENSATION PACKET RPR-2:
Resident Project Representative – Standard Hourly Rates

Article 2 of the Agreement is supplemented to include the following agreement of the parties:

C2.04 *Compensation for Resident Project Representative Basic Services – Standard Hourly Rates Method of Payment*

A. *Owner shall pay Engineer for Resident Project Representative Basic Services as follows:*

1. *Resident Project Representative Services:* For services of Engineer's Resident Project Representative under **Paragraph A1.05.A of Exhibit** A, an amount equal to the cumulative hours charged to the Project by each class of Engineer's personnel times Standard Hourly Rates for each applicable billing class for all Resident Project Representative services performed on the Project, plus related Reimbursable Expenses and Engineer's Consultant's charges, if any. The total compensation under this paragraph is estimated to be **$TBA** (*This figure includes projected travel fees: Labor is **$TBA** and travel is projected at **$TBA**)* based upon full-time RPR services on an eight-hour workday, Monday through Friday, **over an a projection of (40) hours per week, or approximately (~ 960) hours of allocation during the approximate one hundred twenty (120) day** construction schedule.

B. *Compensation for Reimbursable Expenses:*

1. For those Reimbursable Expenses that are not accounted for in the compensation for Basic Services under **Paragraph C2.01**, and are directly related to the provision of Resident Project Representative or Post-Construction Basic Services, Owner shall pay Engineer at the rates set forth in **Appendix 1 to this Exhibit C**.

2. Reimbursable Expenses include the expenses identified in **Appendix 1** and the following: transportation (including mileage), lodging, and subsistence incidental thereto; ~~providing and maintaining field office facilities including furnishings and utilities; subsistence and~~ transportation of Resident Project Representative and assistants; toll telephone calls, ~~mobile phone charges, and courier charges;~~ reproduction of reports, Drawings, Specifications, bidding-related or other procurement documents, Construction Contract Documents, and similar Project-related items. In addition, if authorized in advance by Owner, Reimbursable Expenses will also include expenses incurred for the use of highly specialized equipment.

3. The amounts payable to Engineer for Reimbursable Expenses, if any, will be those internal expenses related to the Resident Project Representative Basic Services that are actually incurred or allocated by Engineer, plus all invoiced external Reimbursable Expenses allocable to such services, the latter multiplied by a factor of **1.1, AND LIMITED TO THE DELIVERABLES LISTED IN PARAGRAPH C2.01 OF EXHIBIT C**.

4. The Reimbursable Expenses Schedule will be adjusted annually **(as of January 1st, 2022)** to reflect equitable changes in the compensation payable to Engineer.

C. *Other Provisions Concerning Payment Under this **Paragraph C2.04**:*

1. **Whenever Engineer is entitled to compensation for the charges of Engineer's Consultants,** those charges shall be the amounts billed by Engineer's Consultants to Engineer times a factor of **1.1 , AND LIMITED TO THE DELIVERABLES LISTED IN PARAGRAPH C2.01 OF EXHIBIT C**.

2. *Factors*: The external Reimbursable Expenses and Engineer's Consultant's factors include Engineer's overhead and profit associated with Engineer's responsibility for the administration of such services and costs.

3. *Estimated Compensation Amounts*:

   a. Engineer's estimate of the amounts that will become payable for specified services are only estimates for planning purposes, are not binding on the parties, and are not the minimum or maximum amounts payable to Engineer under the Agreement.

   b. When estimated compensation amounts have been stated herein and it subsequently becomes apparent to Engineer that the total compensation amount thus estimated will be exceeded, Engineer shall give Owner written notice thereof, allowing Owner to consider its options, including suspension or termination of Engineer's services for Owner's convenience. Upon notice Owner and Engineer promptly shall review the matter of services remaining to be performed and compensation for such services. Owner shall either exercise its right to suspend or terminate Engineer's services for Owner's convenience, agree to such compensation exceeding said estimated amount, or agree to a reduction in the remaining services to be rendered by Engineer, so that total compensation for such services will not exceed said estimated amount when such services are completed. If Owner decides not to suspend Engineer's services during negotiations and Engineer exceeds the estimated amount before Owner and Engineer have agreed to an increase in the compensation due Engineer or a reduction in the remaining services, then Engineer shall be paid for all services rendered hereunder.

4. To the extent necessary to verify Engineer's charges and upon Owner's timely request, Engineer shall make copies of such records available to Owner at cost.

COMPENSATION PACKET AS-1:
Additional Services – Standard Hourly Rates

Article 2 of the Agreement is supplemented to include the following agreement of the parties:

C2.05 Compensation for Additional Services – Standard Hourly Rates Method of Payment

A. Owner shall pay Engineer for Additional Services, if any, as follows:

1. *General*: For services of Engineer's personnel engaged directly on the Project pursuant to **Paragraph A2.01 or A2.02 of Exhibit A**, except for services as a consultant or witness under **Paragraph A2.01.A.20,** (which if needed shall be separately negotiated based on the nature of the required consultation or testimony) an amount equal to the cumulative hours charged to the Project by each class of Engineer's personnel times Standard Hourly Rates for each applicable billing class for all Additional Services performed on the Project, plus related Reimbursable Expenses and Engineer's Consultant's charges, if any.

B. *Compensation For Reimbursable Expenses:*

1. For those Reimbursable Expenses that are not accounted for in the compensation for Basic Services under **Paragraph C2.01** and are directly related to the provision of Additional Services, Owner shall pay Engineer at the rates set forth in **Appendix 1 to this Exhibit C.**

2. Reimbursable Expenses include the expenses identified in **Appendix 1** and the following categories: transportation (including mileage), ~~lodging, and subsistence incidental~~ thereto; ~~providing and maintaining field office facilities including furnishings and utilities; toll telephone calls, mobile phone charges, and courier charges;~~ reproduction of reports, Drawings, Specifications, bidding-related or other procurement documents, Construction Contract Documents, and similar Project-related items; and Consultants' charges. In addition, if authorized in advance by Owner, Reimbursable Expenses will also include expenses incurred for the use of highly specialized equipment.

3. The amounts payable to Engineer for Reimbursable Expenses, if any, will be the Additional Services-related internal expenses actually incurred or allocated by Engineer, plus all invoiced external Reimbursable Expenses allocable to such Additional Services, the latter multiplied by a factor of **ONE POINT ONE [1.1], AND LIMITED TO THE DELIVERABLES LISTED IN PARAGRAPH C2.01 OF EXHIBIT C.**

~~4. The Reimbursable Expenses Schedule will be adjusted annually **(as of January 1st, 2019)** to reflect equitable changes in the compensation payable to Engineer.~~

C. *Other Provisions Concerning Payment for Additional Services:*

1. Whenever Engineer is entitled to compensation for the charges of Engineer's Consultants, those charges shall be the amounts billed by Engineer's Consultants to Engineer times a factor of **ONE POINT ONE [1.1], AND LIMITED TO THE DELIVERABLES LISTED IN PARAGRAPH C2.01 OF EXHIBIT C.**

2. *Factors:* The external Reimbursable Expenses and Engineer's Consultant's Factors include Engineer's overhead and profit associated with Engineer's responsibility for the administration of such services and costs.

3. To the extent necessary to verify Engineer's charges and upon Owner's timely request, Engineer shall make copies of such records available to Owner at cost.

This is **Appendix 1 to EXHIBIT C**, consisting of **1** pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated **TBA**.

Reimbursable Expenses Schedule

Reimbursable Expenses are subject to review and adjustment per **Exhibit C.** Rates and charges for Reimbursable Expenses as of the date of the Agreement are:

This is **Appendix 2 to EXHIBIT C**, consisting of **2** pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated **TBA**.

Standard Hourly Rates Schedule

A. *Standard Hourly Rates:*

1. Standard Hourly Rates are set forth in this **Appendix 2 to this Exhibit C** and include salaries and wages paid to personnel in each billing class plus the cost of customary and statutory benefits, general and administrative overhead, non-project operating costs, and operating margin or profit.

2. The Standard Hourly Rates apply only as specified in **Article C2.**

B. *Schedule:*

Hourly rates for services performed on or after the date of the Agreement are:

This is **EXHIBIT D**, consisting of **5** pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated **TBA**.

Duties, Responsibilities, and Limitations of Authority of Resident Project Representative

Article 1 of the Agreement is supplemented to include the following agreement of the parties:

ARTICLE 1 - SERVICES OF ENGINEER

D1.01 *Resident Project Representative*

A. Engineer shall furnish a Resident Project Representative ("RPR") to assist Engineer in observing progress and quality of the Work. The RPR may provide full time representation or may provide representation to a lesser degree. RPR is Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.

B. Through RPR's observations of the Work, including field checks of materials and installed equipment, Engineer shall endeavor to provide further protection for Owner against defects and deficiencies in the Work. However, Engineer shall not, as a result of such RPR observations of the Work, supervise, direct, or have control over the Work, nor shall Engineer (including the RPR) have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected or used by any Constructor, for security or safety at the Site, for safety precautions and programs incident to the Work or any Constructor's work in progress, for the coordination of the Constructors' work or schedules, or for any failure of any Constructor to comply with Laws and Regulations applicable to the performing and furnishing of its work. The Engineer (including RPR) neither guarantees the performances of any Constructor nor assumes responsibility for any Constructor's failure to furnish and perform the Work, or any portion of the Work, in accordance with the Construction Contract Documents. In addition, the specific terms set forth in **Exhibit A, Paragraph A1.05,** of this Agreement are applicable.

C. The duties and responsibilities of the RPR are as follows:

1. *General:* RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.

2. *Schedules:* Review the progress schedule, schedule of Shop Drawing and Sample submittals, schedule of values, and other schedules prepared by Contractor and consult with Engineer concerning acceptability of such schedules.

3. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings (but not including Contractor's safety meetings), and as appropriate prepare and circulate copies of minutes thereof.

4. *Safety Compliance:* Comply with Site safety programs, as they apply to RPR, and if required to do so by such safety programs, receive safety training specifically related to RPR's own personal safety while at the Site.

5. *Liaison:*

    a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Construction Contract Documents.

    b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-site operations.

    c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.

6. *Clarifications and Interpretations:* Receive from Contractor submittal of any matters in question concerning the requirements of the Construction Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Construction Contract Documents. Report to Engineer regarding such RFIs. Report to Engineer when clarifications and interpretations of the Construction Contract Documents are needed, whether as the result of a Contractor RFI or otherwise. Transmit Engineer's clarifications, interpretations, and decisions to Contractor. ,

7. *Shop Drawings and Samples:*

    a. Record date of receipt of Samples and Contractor-approved Shop Drawings.

    b. Receive Samples that are furnished at the Site by Contractor and notify Engineer of availability of Samples for examination.

    c. Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal, if RPR believes that the submittal has not been received from Contractor or has not been approved by Contractor or Engineer.

8. *Proposed* M*odifications:* Consider and evaluate Contractor's suggestions for modifications to the Drawings or Specifications, and report such suggestions, together with RPR's recommendations, if any, to Engineer. Transmit Engineer's response (if any) to such suggestions to Contractor.

9. *Review of Work; Defective Work:*

    a. Report to Engineer whenever RPR believes that any part of the Work is defective under the terms and standards set forth in the Construction Contract Documents and provide recommendations as to whether such Work should be corrected, removed and replaced, or accepted as provided in the Construction Contract Documents.

    b. Inform Engineer of any Work that RPR believes is not defective under the terms and standards set forth in the Construction Contract Documents, but is nonetheless not compatible with the design concept of the completed Project as a functioning whole, and provide recommendations to Engineer for addressing such Work; and

c. Advise Engineer of that part of the Work that RPR believes should be uncovered for observation, or requires special testing, inspection, or approval.

10. *Inspections, Tests, and System Start-ups:*

    a. Consult with Engineer in advance of scheduled inspections, tests, and systems start-ups.

    b. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.

    c. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.

    d. Observe whether Contractor has arranged for inspections required by Laws and Regulations, including but not limited to those to be performed by public or other agencies having jurisdiction over the Work.

    e. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work, record the results of these inspections, and report to Engineer.

11. *Records*:

    a. Maintain at the Site orderly files for correspondence, reports of job conferences, copies of Construction Contract Documents including all Change Orders, Field Orders, Work Change Directives, Addenda, additional Drawings issued subsequent to the execution of the Construction Contract, RFIs, Engineer's clarifications and interpretations of the Construction Contract Documents, progress reports, approved Shop Drawing and Sample submittals, and other Project-related documents.

    b. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.

    c. Upon request from Owner to Engineer, photograph or video Work in progress or Site conditions.

    d. Record and maintain accurate, up-to-date lists of the names, addresses, fax numbers, e-mail addresses, websites, and telephone numbers (including mobile numbers) of all Contractors, Subcontractors, and major Suppliers of materials and equipment.

    e. Maintain records for use in preparing Project documentation.

    f. Upon completion of the Work, furnish original set of all RPR Project documentation to Engineer.

12. *Reports:*

    a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the progress schedule and schedule of Shop Drawing and Sample submittals.

    b. Draft and recommend to Engineer-proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.

    c. Furnish to Engineer and Owner copies of all inspection, test, and system start-up reports.

    d. Immediately inform Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, possible force majeure or delay events, damage to property by fire or other causes, or the discovery of any potential differing site condition or Constituent of Concern.

13. *Payment Requests:* Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the schedule of values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

14. *Certificates, Operation and Maintenance Manuals:* During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.

15. *Completion*:

    a. Participate in Engineer's visits to the Site regarding Substantial Completion, assist in the determination of Substantial Completion, and prior to the issuance of a Certificate of Substantial Completion submit a punch list of observed items requiring completion or correction.

    b. Participate in Engineer's visit to the Site in the company of Owner and Contractor, to determine completion of the Work, and prepare a final punch list of items to be completed or corrected by Contractor.

    c. Observe whether all items on the final punch list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the Notice of Acceptability of the Work (**Exhibit E)**.

D. Resident Project Representative shall not:

1. Authorize any deviation from the Construction Contract Documents or substitution of materials or equipment (including "or-equal" items).

2. Exceed limitations of Engineer's authority as set forth in this Agreement.

3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers, or any Constructor.

4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of the Work, by Contractor or any other Constructor.

5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.

6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.

7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.

8. Authorize Owner to occupy the Project in whole or in part.

This is **EXHIBIT E**, consisting of **2** pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated **TBA.**

EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

NOTICE OF ACCEPTABILITY OF WORK

PROJECT: **AUSABLE FORKS WASTE WATER TREATMENT PLANT UPGRADES**

OWNER: **TOWNS OF JAY & BLACKBROOK, NY**

CONTRACTOR: **TBA**

OWNER'S CONSTRUCTION CONTRACT IDENTIFICATION: **P-1057-2021**

EFFECTIVE DATE OF THE CONSTRUCTION CONTRACT: **TBA**

ENGINEER: **TBA**

NOTICE DATE:

To: **Towns of Jay & Black Brook**
Owner

And To: **TBA**
Contractor

From: **TBA**
Engineer

The Engineer hereby gives notice to the above Owner and Contractor that Engineer has recommended final payment of Contractor, and that the Work furnished and performed by Contractor under the above Construction Contract is acceptable, expressly subject to the provisions of the related Contract Documents, the Agreement between Owner and Engineer for Professional Services dated _____, and the following terms and conditions of this Notice:

CONDITIONS OF NOTICE OF ACCEPTABILITY OF WORK

The Notice of Acceptability of Work ("Notice") is expressly made subject to the following terms and conditions to which all those who receive said Notice and rely thereon agree:

1. This Notice is given with the skill and care ordinarily used by members of the engineering profession practicing under similar conditions at the same time and in the same locality.

2. This Notice reflects and is an expression of the Engineer's professional opinion.

3. This Notice is given as to the best of Engineer's knowledge, information, and belief as of the Notice Date.

4. This Notice is based entirely on and expressly limited by the scope of services Engineer has been employed by Owner to perform or furnish during construction of the Project (including observation of the Contractor's work) under Engineer's Agreement with Owner, and applies only to facts that are within Engineer's knowledge or could reasonably have been ascertained by Engineer as a result of carrying out the responsibilities specifically assigned to Engineer under such Agreement.

5. This Notice is not a guarantee or warranty of Contractor's performance under the Construction Contract, an acceptance of Work that is not in accordance with the related Contract Documents, including but not limited to defective Work discovered after final inspection, nor an assumption of responsibility for any failure of Contractor to furnish and perform the Work thereunder in accordance with the Construction Contract Documents, or to otherwise comply with the Construction Contract Documents or the terms of any special guarantees specified therein.

6. This Notice does not relieve Contractor of any surviving obligations under the Construction Contract, and is subject to Owner's reservations of rights with respect to completion and final payment.

By: _____

Title: _____

Dated: _____

This is **EXHIBIT F**, consisting of **1 pages, referred to in and part of the Agreement between Owner and Engineer for Professional Services** dated [ ].

Construction Cost Limit

Paragraph 5.02 of the Agreement is supplemented to include the following agreement of the parties:

F5.02 *Designing to Construction Cost Limit*

A. Owner and Engineer hereby agree to a Construction Cost limit in the amount of $[ ].

B. A bidding or negotiating contingency of [ ] percent will be added to any Construction Cost limit established.

C. The acceptance by Owner at any time during Basic Services of a revised opinion of probable Construction Cost in excess of the then-established Construction Cost limit will constitute a corresponding increase in the Construction Cost limit.

D. Engineer will be permitted to determine what types and quality of materials, equipment and component systems are to be included in the Drawings and Specifications. Engineer may make reasonable adjustments in the scope, extent, and character of the Project to the extent consistent with the Project requirements and sound engineering practices, to bring the Project within the Construction Cost limit.

E. If the Bidding or Negotiating Phase has not commenced within three months after completion of the Final Design Phase, or if industry-wide prices are changed because of unusual or unanticipated events affecting the general level of prices or times of delivery in the construction industry, the established Construction Cost limit will not be binding on Engineer. In such cases, Owner shall consent to an adjustment in the Construction Cost limit commensurate with any applicable change in the general level of prices in the construction industry between the date of completion of the Final Design Phase and the date on which proposals or Bids are sought.

F. If the lowest bona fide proposal or Bid exceeds the established Construction Cost limit, Owner shall (1) give written approval to increase such Construction Cost limit, or (2) authorize negotiating or rebidding the Project within a reasonable time, or (3) cooperate in revising the Project's scope, extent, or character to the extent consistent with the Project's requirements and with sound engineering practices. In the case of (3), Engineer shall modify the Construction Contract Documents as necessary to bring the Construction Cost within the Construction Cost Limit. Owner shall pay Engineer's cost to provide such modification services, including the costs of the services of its Consultants, all overhead expenses reasonably related thereto, and Reimbursable Expenses, but without profit to Engineer on account of such services. The providing of such services will be the limit of Engineer's responsibility in this regard and, having done so, Engineer shall be entitled to payment for services and expenses in accordance with this Agreement and will not otherwise be liable for damages attributable to the lowest bona fide proposal or bid exceeding the established Construction Cost limit.

This is **EXHIBIT G**, consisting of **3** pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated **TBA**.

Insurance

Paragraph 6.05 of the Agreement is supplemented to include the following agreement of the parties:

G6.05 *Insurance*

A. The limits of liability for the insurance required by **Paragraph 6.05.A and 6.05.B** of the Agreement are as follows:

1. By Engineer:

a. Workers' Compensation: Statutory

b. Employer's Liability --

1)	Bodily injury, each accident:	$100,000.00
2)	Bodily injury by disease, each employee:	$50,000.00
3)	Bodily injury/disease, aggregate:	$100,000.00

c. General Liability --

1)	Each Occurrence (Bodily Injury and Property Damage):	$1,000,000.00
2)	General Aggregate:	$2,000,000.00

d. Excess or Umbrella Liability --

1)	Per Occurrence:	$1,000,000.00
2)	General Aggregate:	$1,000,000.00

Automobile Liability --Combined Single Limit (Bodily Injury and Property Damage): $1,000,000.00

e. Professional Liability –

1)	Each Claim Made	$1,000,000.00
2)	Annual Aggregate	$2,000,000.00

f. Other (specify): $[ ]

2. By Owner:

a. Workers' Compensation: Statutory

b. Employer's Liability --

1)	Bodily injury, Each Accident	$100,000.00
2)	Bodily injury by Disease, Each Employee	$500,000.00
3)	Bodily injury/Disease, Aggregate	$100,000.00

c. General Liability --

1)	General Aggregate:	$2,000,000.00
2)	Each Occurrence (Bodily Injury and Property Damage):	$1,000,000.00

d. Excess Umbrella Liability

1)	Per Occurrence:	$1,000,000.00
2)	General Aggregate:	$1,000,000.00

Automobile Liability – Combined Single Limit (Bodily Injury and Property Damage): $1,000,000.00

e. Other (specify): $[ ]

B. *Additional Insureds:*

1. The following individuals or entities are to be listed on Owner's general liability policies of insurance as additional insureds:

a. **TBA**
Engineer

b. **TBA**
Engineer's Consultant

c. **TBA**
Engineer's Consultant

d. [ ]

[other]

2. During the term of this Agreement the Engineer shall notify Owner of any other Consultant to be listed as an additional insured on Owner's general liability policies of insurance.

3. The Owner shall be listed on Engineer's general liability policy as provided in **Paragraph 6.05.A.**

This is **EXHIBIT H**, consisting of 2 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated **December 1st, 2018**.

Dispute Resolution

Paragraph 6.09 of the Agreement is supplemented to include the following agreement of the parties:

[NOTE TO USER: Select one of the two alternatives provided.]

H6.08 *Dispute Resolution*

A. *Mediation*: Owner and Engineer agree that they shall first submit any and all unsettled claims, counterclaims, disputes, and other matters in question between them arising out of or relating to this Agreement or the breach thereof ("Disputes") to mediation by ***[here insert name of mediator, or mediation service]***. Owner and Engineer agree to participate in the mediation process in good faith. The process shall be conducted on a confidential basis, and shall be completed within 120 days. If such mediation is unsuccessful in resolving a Dispute, then (1) the parties may mutually agree to a dispute resolution of their choice, or (2) either party may seek to have the Dispute resolved by a court of competent jurisdiction.

[or]

A. *Arbitration:* All Disputes between Owner and Engineer shall be settled by arbitration in accordance with the ***[insert the name of a specified arbitration service or organization here]*** rules effective at the Effective Date, subject to the conditions stated below. This agreement to arbitrate and any other agreement or consent to arbitrate entered into in accordance with this Paragraph H6.09.A will be specifically enforceable under prevailing law of any court having jurisdiction.

1. Notice of the demand for arbitration must be filed in writing with the other party to the Agreement and with the ***[specified arbitration service or organization]***. The demand must be made within a reasonable time after the Dispute has arisen. In no event may the demand for arbitration be made after the date when institution of legal or equitable proceedings based on such Dispute would be barred by the applicable statute of limitations.

2. All demands for arbitration and all answering statements thereto which include any monetary claims must contain a statement that the total sum or value in controversy as alleged by the party making such demand or answering statement is not more than $[ ] (exclusive of interest and costs). The arbitrators will not have jurisdiction, power, or authority to consider, or make findings (except in denial of their own jurisdiction) concerning any Dispute if the amount in controversy in such Dispute is more than $[ ] (exclusive of interest and costs), or to render a monetary award in response thereto against any party which totals more than $[ ] (exclusive of interest and costs). Disputes that are not subject to arbitration under this paragraph may be resolved in any court of competent jurisdiction.

3. The rules of any arbitration shall be supplemented to include the following: The award rendered by the arbitrators shall be in writing, and shall include (a) a precise breakdown of the award, and (b) a written explanation of the award specifically citing the Agreement provisions deemed applicable and relied on in making the award.

4. ~~The award rendered by the arbitrators will be consistent with the Agreement of the parties and final, and judgment may be entered upon it in any court having jurisdiction thereof, and will not be subject to appeal or modification.~~

5. ~~If a Dispute in question between Owner and Engineer involves the work of a Contractor, Subcontractor, or consultants to the Owner or Engineer (each a "Joinable Party"), and such Joinable Party has agreed contractually or otherwise to participate in a consolidated arbitration concerning this Project, then either Owner or Engineer may join such Joinable Party as a party to the arbitration between Owner and Engineer hereunder. Nothing in this Paragraph H6.09.A.5 nor in the provision of such contract consenting to joinder shall create any claim, right, or cause of action in favor of the Joinable Party and against Owner or Engineer that does not otherwise exist.~~

This is **EXHIBIT I**, consisting of [ ] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated **August 17th, 2018.**.

Limitations of Liability

Paragraph 6.11 of the Agreement is supplemented to include the following agreement of the parties:

A. *Limitation of Engineer's Liability*

1. *Engineer's Liability Limited to Stated Amount, or Amount of Engineer's Compensation:* To the fullest extent permitted by Laws and Regulations, and notwithstanding any other provision of this Agreement, the total liability, in the aggregate, of Engineer and Engineer's officers, directors, members, partners, agents, employees, and Consultants, to Owner and anyone claiming by, through, or under Owner for any and all injuries, claims, losses, expenses, costs, or damages whatsoever arising out of, resulting from, or in any way related to the Project, Engineer's or its Consultants' services. or this Agreement, from any cause or causes whatsoever, including but not limited to the negligence, professional errors or omissions, strict liability, breach of contract, indemnity obligations, or warranty express or implied, of Engineer or Engineer's officers, directors, members, partners, agents, employees, or Consultants, shall not exceed the total amount of $[ ] or the total compensation received by Engineer under this Agreement, whichever is greater. Higher limits are available for an additional fee.

2. *Exclusion of Special, Incidental, Indirect, and Consequential Damages:* To the fullest extent permitted by Laws and Regulations, and notwithstanding any other provision in the Agreement, consistent with the terms of Paragraph 6.11, the Engineer and Engineer's officers, directors, members, partners, agents, Consultants, and employees shall not be liable to Owner or anyone claiming by, through, or under Owner for any and all claims for or entitlement to special, incidental, indirect, or consequential damages arising out of, resulting from, or in any way related to this Agreement or the Project, from any cause or causes, including but not limited to:

[NOTE TO USER: List here particular types of damages that may be of special concern because of the nature of the project or specific circumstances, e.g., cost of replacement power, loss of use of equipment or of the facility, loss of profits or revenue, loss of financing, regulatory fines, etc.]

B. *Indemnification by Owner*: To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Engineer and its officers, directors, members, partners, agents, employees, and Consultants from and against any and all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to the Project, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death or to injury to or

~~destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Owner or Owner's officers, directors, members, partners, agents, employees, consultants, or others retained by or under contract to the Owner with respect to this Agreement or to the Project.~~

This is **EXHIBIT J**, consisting of [1] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated **TBA**.

Special Provisions

Paragraph(s) A. 1.03 of the Agreement is/are amended to include the following agreement(s) of the parties:

SEE EXHIBIT(S) ATTACHED FOR ADDITONAL TERMS & CONDITIONS FOR TOWN CONTRACTS.

ALSO SEE EXHIBIT P., "ENGINEER'S ORIGINATING PROPOSAL" FOR SCOPE AND COST PROPOSAL ELEMENTS, ALSO INCLUDED IN THIS CONTRACT.

Exhibit J - SPECIAL PROVISIONS

Additional Terms and Conditions to Agreement

Between The Towns of Jay and Black Brook ("the Towns") and

TBA. ("Engineer")

The parties hereto agree that the terms and conditions of this **Appendix 2** shall supersede and control over any conflicting or contrary provisions in this contract and should there be a dispute between the same, the provisions of this **Appendix 2** shall control and prevail.

1. CLAIMS AND DISPUTES

1.1 *Definition.* A Claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, extension of time or other relief with respect to the terms of the contract. The term "Claim" also includes other disputes and matters in question between Town and Engineer arising out of or relating to the Contract. Claims must be made by written notice. The responsibili1y to substantiate Claims shall rest with the party making the Claim. The written notice of claim must be accompanied by full documentation and proof to substantiate the claim.

1.2 *Decision of the Town, its Engineer or Construction Manager.* Claims shall be referred initially to the Town, or its Engineer or Construction Manager for action as provided below. A decision by the Town or its Engineer or Construction Manager, shall be required as a condition precedent to litigation of a Claim between the Town and Contractor as to all such matters arising prior to the date final payment is due, regardless of (1) whether such matters relate to the execution and progress of the Work or (2) the extent to which the Work has been completed. The decision by the Town or Construction Manager in response to a Claim shall not be a condition precedent to arbitration or litigation in the event (1) the position of t h e Town or Construction Manager is vacant, {2) the Town or Construction Manager has not received evidence or has failed to render a decision within agreed time limits, (3) t h e Town or its Engineer or Construction Manager has failed to take action required under **Section 1.3** within **fifteen (15) days** after the Claim is made, (4) **forty-five (45) days** has passed after the Claim has been referred to the Town or its Engineer or Construction Manager or (5) the Claim relates to a mechanic's lien.

1.3 *Time Limits on Claims.* Claims by either party must be made within **fifteen (15) days** after occurrence of the even giving rise to such Claim or within **fifteen (15) days** after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims must be made by written notice. An additional Claim made after the Initial Claim has been implemented by Change Order will not be considered unless submitted in a timely manner.

2. RESOLUTION OF CLAIMS AND DISPUTES

2.1 The Town or Construction Manager will review Claims and take one or more of the following preliminary actions within **fifteen (15) days** of receipt of a Claim: (1) request additional supporting data from the claimant, (2) submit a schedule to the parties indicating when Town or Construction Manager expects to take action, (3) reject the Claim in whole or in part, stating reasons for rejection, (4) recommend approval of the Claim by the other party or (5) suggest a compromise. T h e Town or Construction Manager may also, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim.

2.2 If a Claim has been resolved, the Town or Construction Manager will prepare or obtain appropriate documentation.

2.3 If a Claim has not been resolved, the party making the Claim shall, within **ten (10) days** after the Town or Construction Manager's preliminary response, take one or more of the following actions: (1) submit additional supporting data requested by Town or Construction Manager, (2) modify the initial Claim or (3) notify the Town or Construction Manager that the initial Claim stands.

2.4 If a Claim has not been resolved after consideration of the foregoing and of further evidence presented by the parties or requested by the Town or Construction Manager, the Town or Construction Manager will notify the parties in writing that the Town or Construction Manager's decision will be made within **ten (10) days**, which decision shall be final and binding on the parties but subject to arbitration. Upon expiration of such time period, the Town or Construction Manager will render to the parties the Town or Construction Manager's written decision relative to the Claim, including any change in the Contract Sum or Contract Time or both. If there is a surety and there appears to be a possibility of a Contractor's default, the Town or Construction Manager may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

The parties expressly agree that any and all controversies and claims arising out of this contract will not be referred to arbitration but will be referred and brought in a Court of competent jurisdiction within Essex County, New York.

3. DELAYS.

3.1 The Town shall not be liable to Contractor or any subcontractors for claims or damages of any nature caused by or rising out of delays. The sole remedy against the Town for delays shall be the allowance of additional time for completion of the Work, the amount of which shall be subject to the claims procedure set forth herein. Except to the extent, If any, expressly prohibited by law, Contractor expressly agrees not to make and hereby waives any claim for damages for delay, including, but not limited to those resulting from increased labor or material costs, directions given or not given by the Town, including scheduling of the work, or an account of any delay, or on account of any delay, obstruction or hindrance for any cause whatsoever by the Town, or its agents or any other Contractor on the project, whether or not foreseeable property damage , death arising out of or in connection with its officers, employees, agents, contractors, sub-contractors, guests or invitees' negligence or its/their performance or failure to perform this agreement.

4. TOWN'S RIGHT TO SET-OFF

The Town shall have all of its common law, equitable and statutory rights of set- off. These rights shall include, but not be limited to, the Town's option to withhold for the purposes of set-off any moneys due to the Contractor under this agreement up to any amounts due and owing to the Town with regard to this contract, any other contract with any Town department or agency, including any contract for a term commencing prior to the term of this contract, plus any amounts due and owing to the Town for any other reason, including, without limitation, tax delinquencies, fee delinquencies or monetary penalties relative thereto. The Town shall exercise its set-off rights in accordance with normal Town practices, including, in cases of set-off pursuant to an audit, the acceptance of such audit by the Town Board or its designated representative.

This is **EXHIBIT K**, consisting of [ ] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated **TBA**.

AMENDMENT TO OWNER-ENGINEER AGREEMENT
Amendment No. _____

The Effective Date of this Amendment is: _____.

Background Data

Effective Date of Owner-Engineer Agreement:

Owner: **TOWNS OF JAY & BLACKBROOK, NY**

Engineer: **TBA**

Project: **AUSABLE FORKS WASTEWATER SYSTEM UPGRADES**

Nature of Amendment: [Check those that are applicable and delete those that are inapplicable.]

____ Additional Services to be performed by Engineer

____ Modifications to services of Engineer

____ Modifications to responsibilities of Owner

____ Modifications of payment to Engineer

____ Modifications to time(s) for rendering services

____ Modifications to other terms and conditions of the Agreement

Description of Modifications:

Here describe the modifications, in as much specificity and detail as needed. Use an attachment if necessary.

Agreement Summary:

Original agreement amount:	$_____
Net change for prior amendments:	$_____
This amendment amount:	$_____
Adjusted Agreement amount:	$_____

Change in time for services (days or date, as applicable): _____

The foregoing Agreement Summary is for reference only and does not alter the terms of the Agreement, including those set forth in **Exhibit C.**

Owner and Engineer hereby agree to modify the above-referenced Agreement as set forth in this Amendment. All provisions of the Agreement not modified by this or previous Amendments remain in effect.

OWNER: TOWNS OF JAY & BLACKBROOK NY	**ENGINEER: TBA**
By:	**By:**
Print name: HON. MATTHEW STANLEY HON. JON DOUGLASS	**Print name:**
Title: TOWN SUPERVISOR	**Title:**
Date Signed:	**Date Signed:**