Engineering Design Services for

The Municipality of Temagami North Sewage Treatment Lagoon UV System

The Corporation of the Municipality of Temagami

Proposal Number: 999-00066557-PP
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1 Introduction

EXP Company Profile

EXP is a full-service multi-disciplinary engineering and architectural firm. We offer consulting, investigation, testing and problem-solving services in geosciences, environment, building science, mechanical, electrical, construction materials, pipeline services, fire and life safety, municipal, transportation and facilities engineering. We serve both private and public-sector clients across Canada, USA and internationally.

EXP has extensive Experience and an excellent reputation in Water and Wastewater Treatment, including our numerous infrastructure planning feasibility studies for waterfront projects. With the support of our other service lines, we provide seamless delivery of integrated projects.

2 Understanding of Local Conditions

Amended Environmental Compliance approval 7518-BBQPKC Issue Date: June 18, 2019, Condition 12 indicates;

"Before September 30, 2019, the Owner shall submit an application to the Director for the upgrade of the Existing Works including installation of an effluent disinfection system along with a detailed design drawing, design specifications and design calculations for the Proposed Works for approval by the Director. EXP understands that at present the Municipality discharges treated effluent into Net Lake."

Based on these considerations, EXP understands that the Municipality requires an engineer to complete design, sizing and obtain approvals for the installation of an Ultra-violet (UV) treatment system for the Engineering Design Services for the Temagami North Sewage Treatment Lagoon UV System effluent. A separate structure will need to be constructed to house the UV system. Accordingly, design of a suitable structure is also included within the scope of work for this project. It is anticipated that the new structure will be located the south west corner of the existing lagoon Cell #1. We trust that the project understanding is effectively demonstrated in this section and throughout our proposal.

2.1 Project Rationale

The primary reason for the construction of an effluent UV facility for the Temagami North Sewage Treatment Lagoon is to comply with the effluent discharge criteria as referenced in the ECA and future Federal Wastewater Systems Effluent Regulation (WSER) criteria.

We understand that this will, at minimum, consist of the following:

1. Construction of a building, suitable to house the UV units.
2. Modifications to the existing effluent discharge piping to feed the UV treatment equipment via a pumping system to and subsequent discharge into the receiver.
3. Determine appropriate size of the UV system.
4. Provide accurate measurement and recording of effluent volumes.
5. Provide standby power to the UV system, including evaluating the required generator sizing.

6 Amendment to the Lagoon ECA.

2.2 Project Considerations and Scope

To summarize the work required, the following examinations of the effluent sewage and subsequent UV design would need to be made:

EXP will design a UV system that will adequately control effluent water quality to meet current Environmental Compliance Approval guidelines, current Wastewater System Effluent Regulations and future Wastewater System Effluent Regulations.

EXP will work with the selected geotechnical consultant to provide design recommendations for the foundation of the proposed UV building.

EXP will provide drawings for the building, including details on the proposed UV system, piping, sample points and associated appurtenances.

EXP will design a properly classified HVAC system that will adequately manage air quality conditions within the UV system building. EXP recognizes the objective of this aspect of the project is to reduce the effects of humidity and corrosion on metal surfaces within the affected areas.

EXP staff will review and size a diesel generator service both the existing Treatment System and proposed UV system. Based upon these findings, EXP will determine the size a generator unit.

EXP will update the existing Environmental Compliance Approval to incorporate the appropriate changes based on the proposed UV system. This will include coordinating with local MOECC personnel and submitting the appropriate applications.

EXP's architectural staff will complete a design of the proposed building envelope. The plant's infrastructure will be examined, and plans created for the installation of all required pumps and piping to convey the sewage to the UV system for treatment.

EXP will work with OCWA to design PLC programming to facilitate control and monitoring of the UV system.

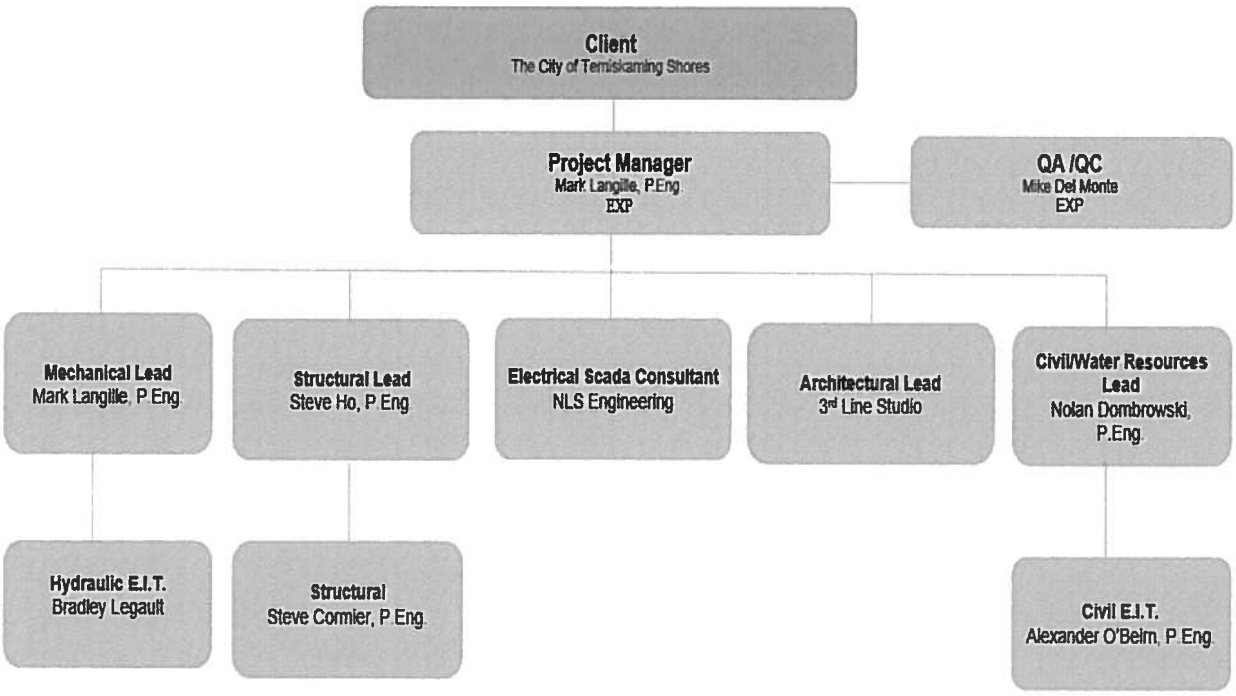
A detailed review of the effluent sewage, as well as a biological/quality analysis of the water itself, will assist in determining the minimum sizing for the UV system necessary to treat the water.

2.3 Project Staging

EXP acknowledges that the Municipality requires that the Temagami North Sewage Treatment Lagoon remains in full operation during construction. Furthermore, all upgrades are to be completed with a minimum of disruption to existing equipment for cost saving purposes. The goal is to have the proposed UV system installed with minimal disruption to existing systems, up to commissioning when the effluent will be redirected to the new UV system.

3 Project Team

3.1 Organization Chart



3.2 Project Team

Project Manager/Water Resource Engineer | Mark Langille, P.Eng.

28 years of Experience

Mark will serve as the project manager as well as the will lead the mechanical design team. Mark is a senior mechanical engineer with over 28 years of Experience in management, project management and civil and mechanical engineering. He has experience on projects involving water distribution systems, sanitary sewer, sanitary and drinking water pumping stations as well as large multi discipline industrial projects. Mark has worked as a Designer, Project Manager, Construction Superintendent and Contract Administrator during his professional career. Mark was the Project Manager and design engineer for the recently completed multi-million-dollar Gray Road Lift Station for the City of Temiskaming Shores, Ont.

Quality Assurance Manager | Michael Del Monte
20 years of Experience

Michael Del Monte will be responsible for assisting Nolan Dombroski in the project management role. Michael is a graduate Biochemical Technologist and Mining Technician. Michael holds Class 3 Certificates in Water Treatment, Wastewater Treatment, Water Distribution and Wastewater Collection. During the past 16 years, he has been a Senior Operations Manager with the Ontario Clean Water Agency, managing multiple projects in water and wastewater treatment, water distribution and wastewater collection for municipalities, industrial clients as well as First Nations. As a resource to his clients and their consultants he has participated in water treatment plants design; wastewater treatment plant design, upgrade, modifications; water distribution network design; sewage network design; and sanitary lift station designs.

Civil/Water Resource Engineer | Nolan Dombroski, P.Eng.
10 years of Experience

Nolan will serve as the Civil and Water Resource Engineer Lead. Nolan is an experienced Civil and Water Resource Engineer in the design of municipal roadways, highways, watermains, sewer systems, water and sewage treatment plants and systems and pumping stations. Nolan has experience as a project manager on projects ranging in construction value from $5,000 to $11,000,000. Nolan began his career with EXP in 2008 as a construction supervisor and progressed to Branch Manager at the New Liskeard office with a staff complement of 35 people.

Electrical/SCADA Engineering Lead | Mark Presti, M.Eng. D., P.Eng.
(NLS Engineering)
18 years of Experience

Mark Presti, M. Eng. D., P. Eng., is an Electrical Engineer with a master's degree in Process Optimization and Design. He has over 18 years of Experience in automation ranging from water treatment & distribution and wastewater collection & treatment, energy, food processing and printing. He spent seven years with the Niagara Region as the Manager of Technical Trades & SCADA Engineer. While at the Niagara Region, he built at team of professionals that allowed the Region to implement state of the art technologies in all of their 12 treatment facilities along with wide area solutions for management and information distribution. His post graduate degree was focused on wastewater collection real time control strategies and made reference to the Port Dalhousie collection system for analysis. Mark also completed a multiyear energy efficiency plan including and facilitated an energy audit in all Water & Wastewater locations which included recommendations to the Energy Efficiency Steering Committee on cost savings initiatives.

Structural Engineering Lead | Stephen Ho, M, P.Eng.,
29 years of Experience

Stephen Ho is a senior structural engineer, offering 29 years of Experience in inspection, planning, design, contract preparation, and construction administration of both building and bridge projects. Stephen has significant amount of Experiences serving Northern Ontario communities. His recent building projects including an industrial (fuel distribution) building in Hearst, a sewage treatment plant in Kapuskasing, a two-story reinforced concrete live fire training building in Temiskaming Shores and the new Subaru Gold Fleet facility in North Bay.

4 Corporate Experience

4.1 Similar Projects

We are pleased to provide the following relevant project examples that demonstrate our capability to successfully undertake this assignment:

Detailed Surface Water Impact Assessment and Sewage Treatment Plant Conceptual Design | 2017

Client: The Corporation of the Municipality of Temagami

Contact: Patrick Cormier, CAO – (705) 569-3421

Project Value: $2,000,000 (excl. HST)

Relevance: The project included the consideration of an Ultra-Violet Disinfection System verses Full Sewage Treatment

Design included the analysis of an open channel UV disinfection verses a full treatment system based upon Rotating Biological Contactor technology. Preliminary design parameters have suggested that two (2) Trojan 3400K PTP Ultra-Violet units will be needed to provide adequate disinfection of effluent for the proposed system based on an average daily flow of 390 m^3/day, peak flow of 2,600 m^3/sec and BOD5 of 250 mg/L.

Cost Analysis Study - Haileybury Wastewater Treatment Plant | 2017

Client: The City of Temiskaming Shores

Contact: Doug Walsh, Director of Public Works – (705) 672-3363

Project Value: $9,000 (Engineering) (excl. HST)

Relevance: The project included a feasibility analysis to incorporate a UV System for Hail WWTP.

Analysis included a full cost estimate to incorporate ultraviolet (UV) disinfection into the Haileybury Wastewater Treatment Plant process, and a full cost estimate to pump the effluent to the North Cobalt Lagoon for treatment.

Emergency Water Distribution System Linking | 2014-2016

Client: The City of Temiskaming Shores

Contact: Doug Walsh, Director of Public Works – (705) 672-3363

Project Value: $5,000,000 (excl. HST)

Relevance: The project included the assessment and retrofit of two water treatment plants.

In plant piping modifications at the New Liskeard and Dymond Reservoirs. At the New Liskeard Shepherdson Road reservoirs, three variable frequency drive (VFD) pumps and components for flow monitoring were installed with electrical system updates, piping in Dymond reservoirs were modified to accommodate new flow control and check valve combination, and installation of trunk watermain. Engineering Services included pre-engineering surveys, preliminary design, Municipal EA and all approvals, detailed hydraulic design using Bentley's Water GEMS and Hammer software, and Contract Administration.

Niven Street Reservoir and Pumping Station | 2008-2010

Client: The City of Temiskaming Shores

Contact: Doug Walsh, Director of Public Works – (705) 672-3363

Project Value: $1,100,000 (excl. HST)

Relevance: The project included the retrofit of a water treatment plant.

The replacement of existing water reservoir (referred to as No. 1) to increase capacity from 660 cu m to 2000 cu m, all associated replumbing with a new concrete reservoir (referred to as No. 3), and the relocation of two existing valves in the valve chamber of another existing reservoir (referred to as No. 2). Engineering Services included preliminary design, Municipal EA and all approvals, detailed design and Contract Administration.

Dymond Reservoir Pump Replacement/ St. Michel's School Water | 2016

Client: The City of Temiskaming Shores

Contact: Doug Walsh, Director of Public Works – (705) 672-3363

Project Value: $250,000 (excl. HST)

Relevance: The project included the retrofit of a water treatment plant and its conversion into a reservoir.

The replacement of four existing submersible pumps with two higher capacity vertical turbine pumps at the Dymond Reservoir, and associated plant upgrades to accommodate the replacement. In the fall of 2015, the New Liskeard drinking water system, and the Dymond drinking water systems were interconnected and later placed into full service in the spring of 2016.

5 Work Plan

5.1 Project Management

Our Process

Strong project management is required throughout all phases of the project in parallel with the tasks described in the work plan. The major project management tasks to be carried out include:

- Effective and efficient communication with project team.
- Management of the inputs of the design team and specialists by the Team Leaders.
- Regular liaison activities with the project team, led by the Team Leaders and/or the EXP Project Manager.
- Preparation of reports by the Team Leaders assisted by other consulting staff and;
- Maintenance of detailed financial and accounting records of the project by the Project Manager.

Our Data Collection Approach

Data collection is the first step in the site visit report. In previous studies, a great amount of information on assorted topics has been collected. Close co-ordination of the project team will be required to validate and update the data, so that it can be used for the preliminary phase of this project.

Accurate knowledge of the existing situation and all relevant elements will help to optimize, restore, and design the networks and facilities, as well as define the most appropriate alternatives.

- The required basic data is related to the following topics:
- Demography: present and past populations, population distribution and growth rate, existing demographic studies.
- Topography, climatology, hydrography, topographic maps, identification of main waterways, hydrologic parameters (imperviousness, area, land use, etc.).
- Existing infrastructure: information on present and planned water supply and for the distribution system.
- Related water quality and environmental norms and standards as applicable.

Our Design and Cost Evaluation Approach

The proposed scheme for treatment will be examined. The alternatives will be screened with respect to pre-set objectives resulting in the selection of a preferred alternative.

The design objective is to provide the lowest cost option which meets all applicable water quality requirements. The water treatment system selected must adequately perform the necessary functions over the design service life of the system.

5.2 Preliminary Design

The Site Visit

The site visit is an important first step of the project and will take place immediately following the award of the project. This process consists of a preliminary field visit of the site by the Project Manager, and the Team Leaders to have a general overview of the project. The main objectives of the site visit are as follows:

- Establish a communication protocol.
- Establish a detailed work plan in consultation with the project team.
- To collect and conduct a preliminary review of background data, relevant documents, previous studies, and applicable laws and regulations.

EXP will meet with the project team and other stakeholders for the project to assess available studies and plans. We will prepare a revised and detailed work plan to be approved. The final detailed work plan will consider comments of the project team and stakeholders. It will become the main guideline in terms of activities and schedule for the entire project.

The Pre-design Meeting

Key members of our team will attend a pre-design meeting with Municipal staff within one week of project award. Specific items to be covered include:

- Reviewing the proposed work plan (including milestone dates);
- Establishing key design criteria;
- Determining the preferred tendering approach; and
- Understanding any other unique project challenges or constraints.

Following the meeting, we will also take the opportunity to complete a full site walk-through.

Our Proposed Design Brief

Prior to our meeting with the Municipality to conclude the preliminary design stage, a design brief will be prepared to present our findings and recommendations. This will be a important step in the project and at a minimum will include the following.

- Design/construction concerns that may affect costs.
- Comprehensive list of required approvals and reviews.
- Plant flow schematics indicating all treatment units and equipment for the primary treatment process and waste handling system.
- Conceptual plant layouts showing the arrangement of treatment process units and other related facilities.
- Plant hydraulic profile establishing operating water elevations through the plant at normal and peak flows.
- Design parameters establishing treatment unit sizes and specific design criteria for minimum, average and maximum conditions.
- Plant control concepts including plant control logic and key control parameters.
- Electrical power supply requirements.
- Evaluation of potential construction risk and proposed mitigation measures to avoid cost overrun.

Hydraulic Analysis for the System.

EXP will utilize Bentley SewerGEMS and Bentley HAMMER to undertake the hydraulic modelling of the existing and proposed configuration of the ultraviolet system. Using the existing and collected information as input, EXP will develop and analyze various scenarios as follows:

- Existing system as it is operated today to calibrate model by comparing model output pressures with field measured pressure records.
- Model proposed system after implementation of the new ultraviolet system to compare with the previous gravity discharge piping, it is should be noted that the new system which will bring the piping above ground near the Farr pumping station will essentially convert the gravity piping to a pressure system that will somewhat reduce the capacity.
- All modelling will be completed using the average daily flow, peak flow, and maximum day plus fire demand conditions.

In addition to the steady state and extended period simulation SewerGEMS analysis, a transient analysis using Bentley HAMMER will be conducted for the various configurations to determine if water hammer is an issue in valve open/close situations. This analysis will assist in determining the ancillary equipment needed to buffer against unacceptable pressures due to water hammer.

EXP is a licensed user of Bentley SewerGems and Bentley Hammer, and we have Experience using these products in environments very similar to the conditions that exist in the Temagami North Lagoons.

Process Control Narrative

The process control narrative will be a comprehensive document that provides a detailed roadmap for how the UV treatment system is going to operate with the automated control system. When operational consensus is reached, we will update the existing process control narrative, or create a new one if one doesn't exist. A first draft of the process control narrative will be submitted for the Municipality's review and comment. Feedback will be incorporated, and the resulting process control narrative will be submitted as final. This document will also function as a *software programming requirements (SPR)* document which functions as the yard-stick to which the PLC programming will be based upon.

Sizing and Selecting the Ultra-Violet System

As part of this proposal, EXP has conducted a limited analysis to get a sense of size and scope for the UV system, below are the design parameters anticipated for this design.

- Peak Flow ≤ 390 L/s
- UV Transmittance (UVT) ≥ 65%
- TSS ≤ 6 mg/L
- Bioassay Dose ≥ 30 mJ/cm2
- Faecal Coliforms ≤ 200 CFU/100 mL (based on a 30-day geometric mean of daily grab samples)

Based upon on the preliminary information, EXP anticipates that to treat the 280 L/s (6.39 mgd) peak flow, the Municipality is going to require a minimum two (2) duty 32AL50's ultra violet treatment units. It also may be beneficial to allow for a third unit to provide some level of redundancy. EXP will consider the alternate option of providing smaller units to save cost as part of our proposed engineering services.

Preliminary Electrical Design

NLS Engineering (NLS) will complete an assessment of the existing electrical systems including the supervisory control and data acquisition system (SCADA), stand by power, and other electrical systems as required.

There will be many components to the electrical design, including an evaluation of the hydro power supply, and power requirement calculations for the Temagami North Lagoon UV System as well as coordination with the Hydro One for the 600 VAC for phase three services. It will include two drawings of the switch room plan layout for the sites, including motor control centers (MCCs) (if required), switchgears, and control panels. In addition, there will be site plans showing the location of the electrical power supply and usage including catalogue sheets for electrical transformers, and switchgears for each site which will include the preferred routing of the buried cables. A single line diagram for the electrical will also be completed. A motor schedule with equipment description, location, power, phase, and type will be prepared. Fire protection system design, and electrical equipment vendor coordination will be completed. The electrical will be considered in the construction cost estimate and material take-offs that

will have an accuracy between -15% to +20 percent. The project schedule for final design, construction, and commissioning will be contained within the design.

Value Added Engineering

In addition, EXP will Explore all funding and rebate programs available under Green Energy initiatives, Save on Energy and any other programs.

5.3 Detailed Design

Mechanical Design

EXP will review the existing system installation, drawings specifications and operating parameters. This will assist in determining the optimum performance characteristics that the ultraviolet system must adhere by.

Our team will re-review the theoretical and the actual effluent flow data. These will ensure that the findings identified in the preliminary design are accurate and are practical for accurate equipment selection.

Our engineers will calculate the system head loss curve (SHLC) using the Moody Diagram approach and the Hazen William formula. The SHLC will include head loss generated by all valves, fittings and other appurtenances, as well as the static head loss caused by the elevation difference between the start and finish of the ultraviolet system. The SHLC is essential to establishing the new capacity of the proposed system.

Mechanical Design (Ventilation)

Data collection and review is an essential step in developing a sound design. The building's proximity to residential housing will play a key role in the ventilation design.

Our engineers will define the ventilation system requirements and calculate the appropriate ventilation rates. This will be accomplished by a thorough review of design standards, guidelines, codes of practice and local laws and regulations. We will ensure environmental parameters, occupational areas and emission points are identified and considered in our design.

Based upon technical calculations, the conditions achieved by different systems are then compared to target levels to aid in identifying acceptable systems. Acceptable alternate systems are then compared, and the most suitable system is selected based on parameters such as:

- Power and energy consumption
- Initial cost
- Life cycle cost

Structural Design

Structural designs of the proposed building will be completed in-house by EXP's structural engineering staff. We will carry out the design work in accordance with the latest edition of the Ontario Building Code (OBC). Public treatment and storage facilities are defined as post-disaster building in OBC. The subject treatment building will therefore be designed as such.

For the purposes of this proposal, we are assuming that the building will be founded on competent native material and that deep foundations are not required.

Civil Design

EXP will prepare detailed Site Grading and Servicing Plans for the location to the satisfaction of Municipality and the building approval authorities. The plans will illustrate the existing and proposed grades, general slopes of parking lot and access roads, finished ground floor elevations of building(s), and the overland storm drainage. Additionally, EXP will complete the design of any necessary on-site ditches or swales, sanitary sewers, and water services required for both sites.

Automation / SCADA

In the detail design stage, NLS and OCWA will develop the process control systems (PCS) and SCADA operations manual based on the provided process narratives. NLS and OCWA will continue to develop the process control network (PCN) design as well as the detailed specifications. The proposed control philosophies, equipment improvements, and opportunities for improvements will be reviewed against the preliminary design report with the Municipality. With consensus on the control philosophy and the equipment, IO and any potential process optimizations or energy improvements, we will develop the detail design drawings and specifications. The design and specifications will include network, SCADA (PLC & HMI), data management, alarm response management, electrical, instrumentation and controls necessary to facilitate the new build. The detail design and tender package will be quantified with construction cost estimates and submitted. Two-week review opportunities will be utilized as client review periods.

At the final detailed design stage, we will incorporate all comments from the previous pre-design meeting and prepare a complete set of contract documents, drawings and specifications relating to the PLC/SCADA scope of work. We will ensure the design package is marked as "Issued for Approval". The draft process control narrative and SCADA operations manual will be updated for Municipality review as well as the cost estimates for PLC/SCADA related equipment.

Diesel Generator System

The existing sewage treatment system does not include a standby generator. Recommendations of the required upgrades from the mechanical team, we will provide inputs to the new generator specifications and prepare the specifications for the new Automatic Transfer Switch (ATS). The electrical team will also provide the electrical portion of the wrap-around engineering for the installation of the new external diesel / natural gas generator, should one be required.

Electrical Design

The 60% design submittals package will contain 60% or more of the essential design components including specifications and details. Some components are the electrical site layout for both sites, the major equipment selection of electrical input, as well as the switch room and building layouts which will include the raceway layouts. The design of the electrical single line diagrams will be updated to at least

the 60% design mark as well as the standby generators grounding layout. The pumping station building grounding layout and lighting layout (for both sites) will be more than 60% completion. A typical motor schematic and wiring diagram drawing will be at least 60% complete and will be included in the submission. Also included will be a detailed specification for Div. 1 (first submission) which will include a summary of electrical works, sequence of construction, testing, and commissioning. The electrical cable schedule will include power cables, control and a communication cable schedule by automation scope for both sites. The 60% design submittals package will include the first detailed specification submission for the following components: standby generators, automatic transfer switches, motor control centers, lighting panelboards and the cables.

The 90% design submittal package will incorporate comments and input from the previous review. It will include a complete set of contract documents consisting of drawings, and technical specifications. The submission will include a complete set of stamped drawings and the cost estimate will be updated to an accuracy within -5% and +10 percent.

Architectural Design

The architectural design component will include the following:

- Based upon site drawings and client requirements, prepare architectural renderings and design drawings of the site and building for review and approval by client.
- Attend planning meeting and site visit with the client.
- Revise design drawings based upon comments received from client for review and approval.
- Review and comment on project cost estimate.
- Prepare architectural construction contract drawings and specifications.

Drawings and specifications 60% and 90% Submissions

This phase of the work will involve preparing detailed drawings and specifications within the framework established during the preliminary design. Throughout this phase, project control must be maintained by close communication with the Project Team.

Following the design of the treatment system, EXP shall design a building to house the ultraviolet system including all architectural, structural, electrical, controls and mechanical components of the building.

The ECA Submission Process

Any fees for permits/applications are excluded from the terms of this proposal. In addition, EXP will prepare the required ECA documents.

5.4 The Tendering Process

EXP will prepare Tender Documents and Technical Specifications in accordance with procurement procedures to hire contractors for execution of the work. In addition, we will ensure that required approvals are in place prior to tender and that all contract documents are complete and contain sufficient detail necessary for the construction of the works.

6 Insurance

EXP is a Professional Consulting Engineering firm, as such, Professional Liability insurance for any actual or alleged error, omission, or negligent act arising out of the professional services provided by EXP, including environmental services, will be provided.

EXP will provide our generic insurance certificates upon award, if requested.

The insurance includes coverage for liability arising out of the actual, alleged or threatened discharge, dispersal, release or escape of pollutants, including, but not limited to, any solid, liquid, gaseous or thermal irritants, toxic or hazardous substances, and contaminants.

Our insurance certificates will show that we are covered for the following

- General Liability $2,000,000.00
- Professional Liability $2,000,000.00
- Errors and Omissions $2,000,000.00
- Automobile $2,000,000.00

7 Schedule

Assuming a project award date of July 3rd, 2019, the completion of the design phase will be September 30th, 2019.

Throughout the project duration, our Project Manager will provide bi-weekly status updates to the Municipality which tracks our progress against schedule. We will also be employing key elements of our internal Quality Management System to ensure that the project stays on track.

8 EXP's Health and Safety Policy

At EXP, we are committed to fostering excellence in environment, health and safety ("EHS") performance in all aspects of our business. We strive to create an injury-free and environmentally responsible workplace for the benefit of our employees, our clients, our business partners and the communities where we work. Excellence in the management of EHS responsibilities and issues is a fundamental corporate responsibility and part of the EXP way of doing business.

EXP's Executive Committee has overall responsibility for EHS matters and leads the strategic direction and performance monitoring of activities carried out by the EHS function in the company. Our business unit leaders also have overall accountability for EHS matters within their businesses and are responsible for implementing organizational arrangements to ensure compliance with this policy and applicable laws.

EXP's employees, at all levels, have a personal responsibility to take due care and follow the company's EHS rules. They also have a responsibility to warn others of potential hazards and unsafe behaviors. Fulfilling these responsibilities is an employment obligation and is consistent with EXP's Worldwide Code of Ethics and Business Conduct.

EXP conducts its business in accordance with the following key EHS principles and is dedicated to creating effective management systems that are based upon the following:

- Meeting or exceeding all applicable laws, regulations and other requirements to which EXP is subject and monitoring compliance with such requirements through periodic assessment;
- Commitment to an injury-free workplace through employee involvement and continual improvement in EHS performance and hazard reduction;
- Robust training systems to ensure that all persons working for or on behalf of the company are competent to fulfill their EHS responsibilities;
- Promotion of health and wellness of our employees;
- Consideration of EHS issues during acquisitions and divestitures;
- Selecting competent subcontractors who will commit to complying with EXP's EHS standards and requirements;
- Communicating with persons working for, or on behalf of, EXP and other stakeholders regarding EXP's EHS policies, programs and performance;
- Update and report to the Executive Committee, on a periodic basis, performance in respect of EHS goals and related metrics for continuous improvement;
- Existing Service locates;
- Fire flow capacities for new or existing hydrants;
- Design of roadways and dewatering systems for newly constructed easements.

Overall, EXP is committed to continually improving our EHS standards, culture and performance and will continue to maintain appropriate controls to ensure compliance with this policy.

9 Closure

Based upon the information provided in the RFP, and the design methodology described in the previous sections, a budget with an upset limit of **$118,800.00** (excluding HST) is proposed for this project. The project budget breakdown is:

Topographic Survey	$3,500.00
Geotechnical Investigation	$9,600.00
Civil Design	$10,000.00
Structural Design	$18,000.00
Architectural Design	$5,000.00
Process Design (Process Flow and P&ID Drawings)	$4,500.00
Mechanical Design (Including HVAC)	$20,000.00
Electrical, Instrumentation and Controls Design	$40,000.00
ECA Submission	$3,200.00
OCWA Allowance (Consultation & Coordination)	$5,000.00
Total (excluding HST)	**$118,800.00**

Disbursements will be charged at standard company rates or at cost plus 5% administration fee.

We thank you for the opportunity of this submission and look forward to working with the Municipality on this project.

m/ Langille

Mark Langille, P.Eng.
Infrastructure Manager
Sudbury