TOWNSHIP OF ASSIGINACK

PO. Box 238 Manitowaning, ON., P0P 1N0
(705) 859-3196 or 1-800-540-0179
www.assiginack.ca

COMMITTEE OF THE WHOLE AGENDA

Tuesday, October 8, 2024 at 7:00 p.m.

OPENING AND DECLARATIONS

1. **ADMINISTRATION/FINANCE/PLANNING**
   a.) Funding Proposal- Community Emergency Preparedness Grant
   b.) Veteran's Banner Policy Discussion
   c.) Encroachment Agreement Discussion

2. **PUBLIC WORKS**
   a.) Housing Enabling Water Systems Fund (HEWSF) Discussion

3. **PROTECTION AND CONTROL**
   NONE

4. **RECREATION AND CULTURE**
   NONE

5. **CLOSED SESSION**
   a.) Personal information about an identifiable individual, including municipal employees.

TOWNSHIP OF ASSIGINACK

Veteran's Banner Policy

Purpose: The purpose of this policy is to set out procedures on how the Township of Assiginack will implement the installation of the Veteran's Banners on the posts located throughout the downtown core, as identified with Staff.

Background Information: The Veteran's Banners initiative is in conjunction with the Royal Canadian Legion and allows community members to purchase a banner in remembrance or celebration of a family member who served in the Military. At this time, a community member has volunteered to act as a liaison with the Legion and coordinate the development of these banners for our community.

Procedures for Installation:

Once the Township has received the Veteran's Banners, Public Works Staff will be responsible for the installation of these banners throughout the downtown core of Manitowaning.

These banners will be installed after Thanksgiving Weekend and remain displayed until the week after Remembrance Day, keeping in line with the same practices as the other communities across Manitoulin Island.

All banners should have two sleeves, one at the top and bottom, so they can be properly secured to ensure longevity.

Storage Procedures:

Upon removal of the banners by Public Works Staff, it is recommended that the banners be stored for safekeeping indoors at the Assiginack Heritage Center and Museum.

Damage:

In the event that a banner is damaged due to weather conditions, any and all damaged banners will be returned to the original purchasers. Public Works will notify and return the banner to the Municipal Office, where Municipal Staff will contact the purchasers and coordinate pick-up of the damaged banner.

Banner Program Capacity

When the number of Veteran's Banners purchased exceeds the number of posts that the Township has available for use, then the Township will move to rotating these banners using a lottery system. The Township will use a simple lottery system, where all of the purchaser's names are entered into the draw/lottery and the first 28 purchaser's names to be drawn, will have their banners on display for that year. The remaining names and banners will be displayed the following year. This process will rotate back and forth each year to allow for the expansion of the Veteran's Banner program as required and to promote and ensure a fair and inclusive process.

Manitowaning Water Distribution System Upgrade Costing and HEWSF Fund

EXP Northern Ontario Engineering

Type of Document:
Proposal

Project Name:
The Corporation of the Township of Assiginack

Prepared By:
Russel Moulton, EIT
Mechanical EIT
EXP Services Inc.
885 Regent Street, Suite 3-6A
Sudbury, ON, P3E 5M4
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Date Submitted:
2024-09-24

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1. Introduction

1.1 Company Profile

EXP Services Inc. (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, hydraulic, 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 is a Canadian-owned firm, which today employs more than 3,000 highly qualified people, with 1,500 engineers and architects from various disciplines, assisted by technicians, draftspersons, and administrative staff. We offer specialized expertise in engineering, architecture, environmental science as well as a number of activities closely related to applied sciences.

EXP has extensive experience and an excellent reputation in ***Water and Wastewater Distribution Systems, Water Treatment Plant Design, Wastewater Treatment Design*** and accompanying ***Hydraulic Analysis***, 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. Project Understanding

2.1 Background

The Township of Assiginack is located on the eastern portion of Manitoulin Island. The main community, Manitowaning, is the administrative center of Assiginack Township and was founded in 1836. Manitowaning is nestled in the picturesque Manitowaning Bay with a current estimated population of approximately 600 people. The Corporation of the Township of Assiginack is requesting a proposal to prepare as built drawings of the existing water distribution system to assist an HEWSF application and a detailed report with updated cost estimates to upgrade the aging buried infrastructure throughout the town.

2.2 Existing System Overview

The township's water treatment plant intakes water from Manitowaning Bay where water is treated then fed to the distribution system by three (3) vertical turbine highlift pumps, two (2) duty and one (1) standby. Each pump has a capacity of 777.6 m^3/day at 80 m TDH. The WTP is also equipped with two (2) fire pumps (one pump is for redundancy) each with a capacity of 6,048 m^3/day at 80 m TDH. Permit to Take Water (PTTW) 7279-BALLLV grants the taking of water from Lake Huron to the Township of Assiginack for the purpose of municipal water supply at a rate no greater than 1,149 m^3/day. The plant is operated through a SCADA system which monitors process control, instrumentation, and equipment. Emergency power to the WTP is supplied by a standby diesel generator rated at 300 kW.

The Manitowaning water distribution system was commissioned in 1975, modified in 1990, serviced a population of approximately 550, as of 2022, and consisted of two (2) main components, municipal lines and private lines. The MECP reports the system contains approximately 350 service connections, with 65 of those connections going to commercial and institutional premises. The system is comprised of a 250 mm diameter pipe extending 100 m from the WTP and branching into 200 mm diameter lines on Queen Street and Main Street with 150 mm diameter pipe on all other Township lines. There are also approximately 50 fire hydrants owned, operated, and maintained by the Township. The Township also allowed six (6) private lines to be installed with the agreement that maintenance and initial costs were to be the responsibility of the owners of the private lines. In 2004, the Township requested the operating authority (OCWA) begin sampling and testing residuals on these lines. The private lines are now included as part of the annual municipal flushing program and repairs to these lines are now overseen by OCWA.

3. Project Scope

The Township of Assiginack – Manitowaning is requesting a proposal to have an updated detailed report that offers upgrade solutions and Class D cost estimates for the aged infrastructure. EXP has previously completed a water model, distribution upgrade solutions report, Water Treatment Plant and Lagoon assessments for the Township, which will be utilized to develop an updated report. Additionally, EXP will generate as built drawings of the township's water distribution system to assist the township with a Housing Enabling Water Systems Fund (HEWSF) application.

4. Project Team

4.1 General

Resumes of any individuals noted below can be provided upon request.

4.2 Project Team

PROJECT MANAGER/MECHANICAL EIT | RUSSEL MOULTON, EIT

4 years of Experience

Russel is a mechanical engineer-in-training and is gaining experience in sustainable development and infrastructure. Russel works in the mechanical, process, and hydraulic engineering aspects throughout project design execution. Russel has the capability of using various hydraulic equations and modelling simulations to determine proper pumping requirements, intake conditions, and pipe flow characteristics with knowledge of pressure losses throughout piping systems and forcemains. Russel has knowledge of the OBC, MECP, and other related design guidelines for sewage works and drinking water systems. Russel has experience in various aspects of commercial and industrial projects that include design, equipment procurement, assessments, project management and contract administration. Russel will be responsible for coordinating the various disciplines and aspects and will oversee the entirety of the project. He will be in direct communication with the project team throughout its duration and will monitor progress and apply corrections as necessary to maintain the schedule.

MECHANICAL ENGINEER/MECHANICAL COORDINATOR | BRADLEY LEGAULT, P.ENG., LEED GA

8 years of Experience

Mr. Legault has extensive experience in project management and design with a focus in mechanical, process, and water resource work including sanitary lift stations, sewage treatment plants, water treatment plants, and industrial projects. Mr. Legault has extensive experience in MECP regulation and standards that are dealt within water treatment and wastewater treatment.

SENIOR MECHANICAL ENGINEER | MARK LANGILLE, P.ENG.

25+ years of Experience

Mark will serve as the principal engineer and technical support. 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.

5. Water Plant and Distribution System Experience

5.1 McCamus Water Treatment Plant Iron Removal System

Assignment Name: McCamus Water Treatment Plant Iron Removal System	**Total Construction Budget:** N/A
Location: Temiskaming Shores, Ontario	**Engineering Budget:** $85,000
Name of Client: The City of Temiskaming Shores	**Address:** 325 Farr Drive, P.O. Box 2050 Haileybury, Ontario P0J 1K0
Contact Reference: Steve Burnette; t: +1.705.672.3363	**Timeline:** N/A
Project Manager: Mark Langille, P.Eng.	**Technical Support Team:** Nolan Dombrowski, P.Eng.
Project Overview: The primary objective of this project was to reduce iron and manganese content in raw water taken from Well No. 3 and Well No. 4 while also reducing treated water turbidity to less than 0.3 NTU 95% of operational time on continuous basis. The project involved the design of two (2) iron removal filters to replace the aging existing filters. As part of the replacement, provision has been made to supply both filter vessels from either well, therefore creating true redundancy. The works included new piping, valves, flow meters and associated equipment.	

5.2 Temiskaming Shores Water Distribution Linking

Assignment Name: City of Temiskaming Shores Emergency Water Distribution System Linking	**Total Construction Budget:** $5,000,000
Location: Temiskaming Shores, Ontario	**Engineering Budget:** $178,085
Name of Client: The Corporation of the City of Temiskaming Shores	**Address:** 325 Farr Drive, P.O. Box 2050 Haileybury, Ontario P0J 1K0
Contact Reference: Steve Burnette; t: +1.705.672.3363	**Timeline:** 2014-2016

Project Manager: Nolan Dombroski, P.Eng. Mark Langille, P.Eng.	**Technical Support Team:** Mark Langille, P.Eng. James Hawken, P.Eng. Jerry Dussault, P.Eng. Jessy Dussault, P.Eng. Hayden Fiset, P.Eng.

Project Overview:

This project involved in plant piping modifications at the New Liskeard and Dymond Reservoirs. At the New Liskeard Shepherdson Road reservoir, piping modifications are necessary to facilitate the instillation of three variable frequency drive (VFD) pumps as well as add components to monitor the flow, pressure and quality of the water. The electrical system will be revamped to adequately support the VFD pumps. The piping in the Dymond reservoir was modified to accommodate a new flow control and check valve combination. This combination was necessary to regulate the flow entering the system and maintain pressure upstream.

This project also involved the installation of a trunk watermain connecting the existing New Liskeard water distribution system at the intersection of Hessle Street and Armstrong Street and connecting to the Dymond water distribution system at the intersection of Gray Road and Highway 11B. The connections between both systems are required in order to eliminate the two wells at the Dymond reservoir. These wells have been found to be under the influence of surface water and have been shown to contain E. Coli.

EXP Services Inc. was retained by the City of Temiskaming Shores to provide engineering services required to implement improvements to the existing water distribution systems including detailed pre-engineering surveys; detailed hydraulic design using Bentley's WaterGEMS and Hammer software, municipal infrastructure; identification of utility conflicts and verification of proposed utility relocation; preparation of the construction contract package and contract administration.

Extensive hydraulic modelling was used during the course of this project to ensure safe and reliable linking of the two separate water distribution systems. Several aspects were analyzed using Bentley's WaterGEMS software including existing individual network demands as well as proposed "linked" demands. Operational parameters were determined for installation of new watermain, valves, pumps, flow meters and associated equipment.

5.3 Fairyview Water Treatment Plant

Assignment Name: Fairyview Water Treatment Plant	**Total Construction Budget:** $ 6,000,000
Location: Huntsville, Ontario	**Engineering Budget:** $720,000
Name of Client: The District Municipality of Muskoka	**Address:** 70 Pine Street Bracebridge, ON P1L 2B3
Contact Reference: Michael Currie; t: +1.705.672.3363	**Timeline:** 2018-2022
Project Manager: Mark Langille, P.Eng.	**Technical Support Team:** Brad Legault, P.Eng.

Project Overview:

EXP was retained to complete the design, tender and contract administration for the Fairyview Water Treatment Plant (WTP) Upgrades. As part of the upgrades a complete by-pass system was installed that would allow the existing chlorine contact chamber and clear well to be isolated and shut down to provide maintenance and inspections. A 720m, 600mm diameter "serpentine" pipe was utilized as a secondary chlorine contact chamber to allow proper disinfection of the treated water before distribution. A booster pump was designed and installed in series with the existing backwash pumps to allow isolation of the high-lift pumps during shutdown. The existing chlorine gas system was decommissioned and replaced with a new sodium hypochlorite system with 2 holding tanks and 5 peristaltic pumps, 3 duty and 2 standby.

A complete modification to each filter effluent discharge piping was designed and installed to allow the filter effluent to be discharged into either the backwash well, high lift well or during normal operation the chlorine contact chamber. In the existing chlorine contact chamber and high-lift, an existing 2m x 2m opening located at the bottom of the isolation wall was filled in completely with an automated sluice gate.

This was replaced with a fixed height weir located 4.4m in elevation to allow improved chlorine contact time within the normal operation of the facility. The Primary objective of this project was to allow the operators to isolate their clear well and chlorine contact tanks for general inspections on a maintenance schedule, provide optimization within the plant, and increase the total plants CT time.

5.4 Manitowaning Water Model

Assignment Name: Manitowaning Water Model	**Total Construction Budget:** N/A
Location: Manitowaning	**Engineering Budget:** $22,000
Name of Client: The Township of Assiginack – Manitowaning	**Address:** 238 156 Arthur Street Manitowaning ON P0P 1N0
Contact Reference: Alton Hobbs	**Timeline:** 2010
Project Manager: Bradley Legault, P.Eng./Mark Langille, P.Eng.	**Technical Support Team:** N/A

Project Overview:

In 2020, EXP created a water model for the Township of Assigniack – Manitowaning due to the concerns of the wild lines/private lines that exist within the towns distribution system. Exp conducted field testing by flowing specified hydrants to calibrate the model. This water model was completed, and a design brief was completed. A report specifying the issues within the distribution system was completed also with proposed solutions.

5.5 Dymond Infrastructure Improvement

Assignment Name: Dymond Infrastructure Improvement	**Total Construction Budget:** $
Location: Temiskaming Shores, Ontario	**Engineering Budget:** N/A
Name of Client: The City of Temiskaming Shores	**Address:** 325 Farr Drive, P.O. Box 2050 Haileybury, Ontario P0J 1K0
Contact Reference: Steve Burnette; t: +1.705.672.3363	**Timeline:** 2016
Project Manager: Mark Langille, P.Eng	**Technical Support Team:** Multiple individuals
Project Overview: In 2016, the City of Temiskaming Shores requested engineering services and tender ready documents for Phase 1 of the New Liskeard/Dymond infrastructure upgrades. The project included the supply and installation of 2.5 kms of sanitary force main; 510 m of Municipal Road reconstruction, including buried infrastructure, the supply and installation of a Prefabricated FRP Lift Station and a Concrete Wet Well Lift Station complete with pumps and associated piping.	

6. References

6.1 Township of Billings - Kagawong

Project(s): Main Street Reconstruction, Kagawong Marina Upgrade, Old Mill Road Watermain Upgrades

Reference: Todd Gordon – Municipal Project Manager

Telephone: 1-705-923-6189

Email: tgordon@billingtwp.ca

6.2 The District Municipality of Muskoka

Project: Fairyview Water Treatment Plant

Reference: Mike Currie – Director of Water Wastewater Services

Telephone: 705-645-6764

Email: michael.currie@muskoka.on.ca

6.3 The Corporation of the City of Temiskaming Shores

Project:	**City of Temiskaming Shores Emergency Water Distribution System Linking**
Reference:	**Steve Burnette – Manager of Environmental Services**
Telephone:	**705-672-3363**
Email:	**sburnett@temiskamingshores.ca**

7. Methodology

7.1 Tasks

7.1.1 Project Management

Strong project management is required throughout the project's phases in parallel with the tasks described in the methodology. 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 Leader;**
- **Regular liaison activities with the project team, led by the Team Leader and/or the EXP Project Manager;**
- **Provide weekly status updates to the Township as well as responding to any requests or concerns that the Township may have;**
- **Preparation of reports by the Team Leader assisted by other consulting staff; and**
- **Maintenance of detailed financial and accounting records of the project by the Project Manager.**

7.1.2 Data Collection and Review

Data collection is the first step in progressing with this project. In previous projects with the Township, information on the WTP and Water Distribution System had been collected. Close co-ordination of the project team will be required to validate and update the data.

Within one week of project award, we will schedule a meeting in Manitowaning to kick-start the project. The purpose of this meeting will be to:

- **Introduce key members of our team to Township staff;**
- **Finalize the scope of work, including making any "tweaks" to our proposed approach;**
- **Establish the preferred method(s) of communication;**
- **Confirm target dates for key project milestones; and**
- **Exchange all relevant background information.**

Our Project Manager will take minutes of the meeting, which will be circulated within three (3) days to ensure that everyone is on the same page at the outset of the project.

In conjunction with project kick-off, we will also take time to meet with the local water and wastewater system operators, whose day-to-day "hands-on" experience will be an invaluable input to this project. It has been our experience that these individuals usually offer great insight with respect to water plant issues.

Back in the office, our team will review all relevant background data provided by the Township for completeness and suitability. As a minimum, it is assumed the following information will be made available:

- Flow usage records (pumping, treatment, metered);
- Overall Operation & Maintenance records;
- Drinking Water System annual reports for past five years;
- Recent record information which may not be included in the latest Drinking Water System (DWS) report;
- System operational data including: reservoir levels, pump characteristics and booster pump information; and
- Physical dimensions of tanks and reservoirs.

Once we've had the opportunity to review the full extent of information available, we will immediately notify the Township of any missing data which we think would add value to the study. If necessary, we will discuss the best approaches for collecting this data. Based on our current understanding of available records, including as-built drawings, we are quite impressed with the quantity, quality and organization of data that appears to be available. This will assist the development of the water model and reduce the likelihood of manual data entry.

7.1.3 Review Existing Water Consumption and Determine Future Needs

Evaluating present water consumption and determining the needs of the future requires an assessment of the current population as well as projections for future growth/development. In Ontario, an average population density of 3.5 persons per household is often used with cross-referencing of updated census population numbers. Examining historical data and province wide trends will help us to understand the changing water demands. Based on this, we will establish flow estimates on a per user basis, with some leakage contribution taken into account. The use of MECP standards for flow estimation will be used for this undertaking; as well as industry-recognized peaking factors. EXP has completed a water model for the Township from a previous project and will utilize this in-order to identify areas of concern with future growth and upgrade requirments.

The evaluation for the distribution system and the flow characteristics will be reviewed relative to historical data. Having historical flow data is key to identifying potential leakage and is also very relevant for identifying any institutional and industrial flows that have non-conventional variations. Using this information, a flow estimate will be made for current conditions and future development scenarios. This task will also be tied to peaking factors that will influence the evaluation of water storage and pumping requirements.

7.1.4 Detailed Report

EXP will prepare a detailed report upon the completion of the assignment which will highlight all assumptions, design criteria, findings, results, recommendation, and conclusions.

7.1.5 Deliverables

The key deliverables for this project will include:

- Detailed Report including:
  - Review existing water consumption and determine future needs
  - Evaluation of distribution system
  - Recommended options for improvement/upgrades

- Class D Construction cost estimate(s)
- HEWSF application support
- As built Drawings of water distribution system

8. Cost Estimate

Fees

Project Management	$3,000.00
Detailed Report & As Built Drawings	$6,500.00
Total Fees (excluding HST)	**$9,500.00**

9. Conflict of Interest Statement

If successful, EXP shall always work solely and exclusively in the interests of the Client until the project is successfully completed. At the current time, EXP does not have any potential conflict of interest that might compromise the performance of the work noted herein. Should such a conflict come to our attention, we will discuss it immediately with the Client.

10. Closure

We thank you for the opportunity to submit this proposal and look forward to working with you on this project. Should you have any further questions concerning the above, please do not hesitate to contact the undersigned directly.

Yours truly,

EXP Services Inc.

Bradley Legault, P.Eng., LEED GA.
Mechanical Engineering Coordinator

Legal Notification

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