# The Corporation of the Township of Billings

## Council Meeting Agenda

## Thursday May 25th, 2023 @ 7pm

## Park Centre – 39 Henry Drive, Kagawong

Council
Bryan Barker, Mayor
David Hillyard, Deputy Mayor
Jim Cahill, Councillor
Vince Grogan, Councillor
Michael Hunt, Councillor

Staff
Emily Dance, CAO/Clerk
Todd Gordon, Municipal Project Manager
Chris Cyr, Public Works Superintendent

1. **Call to Order**
   Mayor Barker to call the meeting to order.
2. **Approval of Agenda**
   Confirm approval of the agenda.
3. **Disclosure of Pecuniary Interest**
4. **Delegation**
   4.1. Mark Langille, EXP – Old Mill Road Bridge
   Mr. Langille will be providing a delegation on the status of the Old Mill Road Bridge and the options available to Council for tentative replacement.
5. **Item for which the Special Meeting was Called –Old Mill Road Bridge**
   5.1. MPM2023-05-11 Old Mill Road Bridge
6. **Confirmatory By-Law**
   6.1. By-Law No. 2023-44 being the May 25 2023 Confirmatory By-Law
7. **Adjournment**
   7.1. Motion to Adjourn

**Document Accessibility**
The Township of Billings is committed to providing information in the format that meets your needs. We have made every attempt to make documents for this meeting accessible but there may still be difficulty in recognizing all of the information. Please contact us if you require assistance and we will make every attempt to provide this information in an alternative format.

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For assistance or to make a request please call (705) 282-2611 or email tmills@billingstwp.ca

**COUNCIL REPORT**
**Department:** Municipal Project Management
**Date:** May 25, 2023
**Report Number** MPM-2023-05-11
**File:** Old Mill Rd. Bridge Project

## Staff Recommendations:

1. THAT the Township of Billings Council hereby approves Report MPM-2023-05-11 AND approves moving forward with investigation for replacement of the Old Mill Road Bridge.

2. THAT the Township of Billings Council hereby approves entering into an agreement with EXP for Engineering Consulting Services for Design Process for the Old Mill Road Bridge Replacement AND FURTHER grants an exemption to the procurement policy to solicit three bids for the project AND FURTHER authorizes the appropriate By-Law coming forward.

3. THAT the Township of Billings Council hereby approves shifting the NORDS funding from the Mud Creek Rd. Bridge to the Old Mill Rd. Bridge.

**Background:**
Active construction on the Old Mill Rd. Waterline Project has been underway since mid-April, and this project has proceeded very well, in general – it is well ahead of schedule and will also be substantially complete well ahead of schedule.

However, early in the project, one of the contractor's trucks dropped a steering axle tire through a corner of the wooden deck on the Old Mill Rd. Bridge. The main structure of the bridge - inner and outer steel girders, abutment components were not damaged in this incident. Using the bridge during the project was an understood risk.

The contractor, Denis Gratton Construction Ltd., acknowledged the damage at the time, and agreed to repair the damaged section, post-project. An immediate short-term solution to keep the project moving and to allow for local traffic use, was to bring in thick steel plating and place in the centre of the wooden bridge deck. Meanwhile, municipal staff also consulted with the project engineers, and the contractor, regarding more substantial mitigation measures – i.e., a temporary bridge, essentially overlaid on top of the existing bridge structure. We were given a budgetary cost estimate on this option of between $50,000 & 60,000[1], with the understanding that, ultimately, the costing on the provision of the temporary bridge would be on a time and materials basis – because there were considerable unknowns in implementing the temporary bridge solution.

[1] The temporary bridge installation would involve transportation of the bridge from Greater Sudbury, placement (crane work), the installation of temporary timber abutments, and placement of considerable "A" gravel to provide ramps to access the bridge.

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Further recommendation on this solution, due to cost, and although the solution would be protecting the bridge – specifically the bridge deck –would protect a bridge that is effectively at end-of-life (as per the 2022 OSIM report)[2], and a deck that is already clearly compromised. Additionally, the project was continuing, and moving very rapidly. Even as an expedited process, the temporary bridge install was going to take quite a few days. The steel plates were providing adequate protection for vehicles provided they stayed on-centre. And the bridge was being monitored by engineering and contractor staff.

As noted verbally at the May 2, 2023 Council meeting staff researched alternative temporary solutions which turned to consideration of replacing the bridge, even outside of the situation created by the Old Mill Waterline Project, and began to consider whether it was technically and financially possible within a reasonable timeframe (i.e., this season).

A technical proposal from EXP Services was requested due to their involvement in the waterline project, and familiarity with the situation overall.

**Discussion:**
EXP Services responded quickly and presented a proposal, which is attached to this report. As indicated, although the bridge replacement project engineering benefits from engineering information related to the Old Mill Rd. Waterline Project, there is a need for additional geotechnical information. In fact, the specific bridge methodology to be employed hinges on the geotechnical conditions at the bridge site, which can only be determined with four (4) further full boreholes (as opposed to rock probe sampling).

EXP's geotechnical team is extremely busy, but the intent would be to speed up complete the bore holes as quickly as possible, because the approach to bridge implementation is critically dependent on the geotechnical information.

**Other Considerations:**
<u>Timeline/Project Window</u>
If the bridge project is approved, construction will occur through the summer of 2023, and it will have implications for the use of Old Mill Rd. There will be some inconvenience for residents and visitors alike, but all concerned will make every effort to minimize this.

<u>NORDS Funding Shift</u>
As anticipated, implementation of an Old Mill Rd. Bridge replacement project now, in 2023, is dependent on Council's willingness to shift the focus of the municipality's NORDS funding from the Mud Creek Rd. Bridge to the Old Mill Rd. Bridge, *and* approval by the Ministry of Northern Development (OMND) to allow the shift in NORDS project focus.

[2] The Old Mill Rd. Bridge portion of the 2022 OSIM report is attached to this staff report.

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Procurement Policy

By-Law No. 2016-40 outlines the guidelines for the procurement of goods and services. Part IV requires for goods and services estimated to cost $25,000 or more but less than $75,000 then a requests for quotation is required with an attempt to solicit three bids. When the requirement for Goods and Services are estimated to cost $75,000 or more then a request for tender is required complete with advertising.

Recommendations

In order to move forward with the expedited project, staff is recommending to continue to investigate the replacement of the Old Mill Road Bridge and enter into an agreement with EXP to provide Engineering Services for the project with an exemption to the procurement policy to remove the requirement for formal quotations from three vendors. Further, staff is recommending that the NORDS funding be shifted from the Mud Creek Rd. Bridge to the Old Mill Rd. Bridge.

**Financial Impacts:**

| **Old Mill Road Bridge Replacement** | |
|---|---|
| **Bridge Costs Estimate (Budgetary): Two Bridge Scenarios** | |
| | |
| Note that the solution depends on final geotechnical analysis - it isn't a choice we can make ultimately | |
| | |
| **Potential Bridge Replacement: Situation 1 - No Helical Piles** | |
| | |
| **Component** | **Amount** |
| Engineering | $ 64,627.00 |
| Construction (Concrete in Granular Abutments) | $ 505,188.00 |
| Subtotal | $ 569,815.00 |
| HST | $ 74,075.95 |
| Total | $ 643,890.95 |
| | |
| NORDS Funding (5 years @ $76,833.27) | $ 384,166.35 |
| To be funded (Total *subtract* NORDS Funding) | $ 259,724.60 |
| | |
| **Potential Bridge Replacement: Option 2 - Helical Piles** | |
| | |
| **Component** | **Amount** |
| Engineering | $ 64,627.00 |
| Construction (Helical Piles) | $ 764,238.00 |
| Subtotal | $ 828,865.00 |
| HST | $ 107,752.45 |
| Total | $ 936,617.45 |
| | |
| NORDS Funding (5 years @ $76,833.27) | $ 384,166.35 |
| To be funded (Total *subtract* NORDS Funding) | $ 552,451.10 |

Funding options for the project will depend on the outcome of the geotechnical works and approval from the Ministry of Northern Development. Options include: including the difference on the tax rate, using reserves, bank loan or Infrastructure Ontario Loan or any type of combination.

## Alignment to Strategic Plan:

1. Continue to develop and implement long-term roads maintenance and improvement.

## Alignment to the CEEP:

Climate Change Adaptation and Mitigation - Continuous maintenance of roads, stormwater, and other engineered community assets associated with roads and land-use

## Respectfully Submitted by:

Todd Gordon, MPM

Reviewed By:

Emily Dance, CAO/Clerk

# Old Mill Road Bridge Replacement

The Corporation of the Township of Billings

SUD-22021054-A0

TECHNICAL PROPOSAL


**Submitted by**

EXP

885 Regent Street | Sudbury, ON P3E 5M4

t: +1.705.674.9681 | exp.com

May 11, 2023

The Corporation of the Township of Billings
15 Old Mill Road, P.O. Box 34
Kagawong, ON P0P 1J0

**Re: SUD-22021054-A0 | Kagawong Bridge Replacement – Engineering Consulting Services for Design Process**

EXP is pleased to provide this proposal in response to The Corporation of the Township of Billings' request for proposal. EXP intends to meet all the technical and schedule requirements.

EXP has extensive experience and an excellent reputation in bridge and roads projects. From master planning and feasibility, to detailed design, tendering and construction management services, we work in partnership with our clients to implement innovative solutions that create outstanding value, while improving quality of life in our communities.

Our team will be led by Steven Kacan, who brings over 8 years of experience in the industry. He understands that successful projects are partnerships between the client, stakeholders and the project team. Our team has the breadth and depth of services required to support the Township in its efforts to successfully deliver this project. We are confident that the Township will acknowledge that our EXP team is truly the best choice.

We are well-positioned to provide exceptional service on this project. We truly look forward to the opportunity of working with you, and we are available to discuss this opportunity further with you at your convenience.

Sincerely,

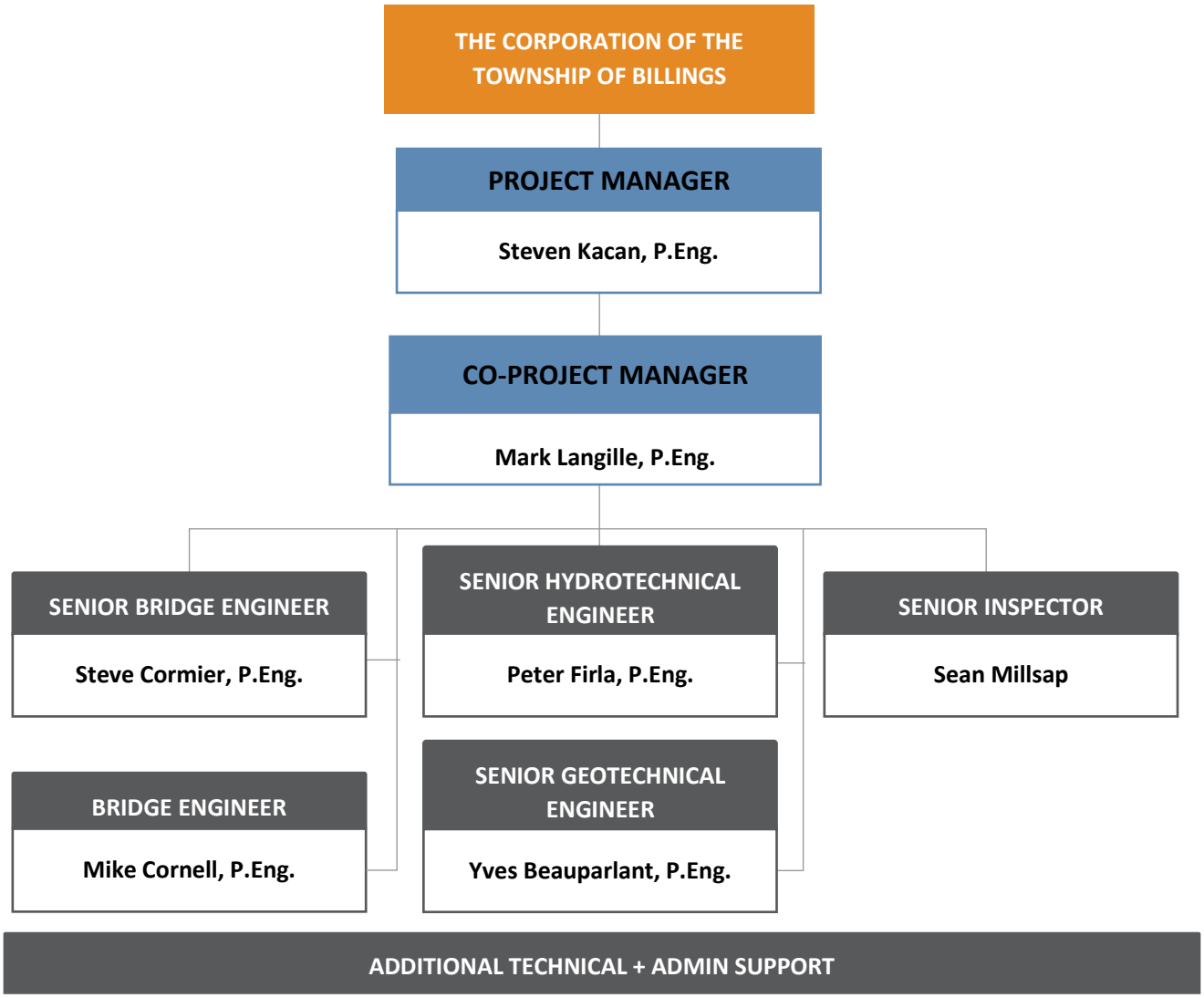
Steven Kacan, P.Eng.
Project Manager

885 Regent Street | Sudbury, ON P3E 5M4
t: +1.705.674.9681 | exp.com

# Table of Contents

# 1 Project Team's Experience

Our team is led by EXP's proposed Project Manager – Steven Kacan, P.Eng. The EXP team will deliver this project through our Sudbury office, which is fully staffed with the technical resources required for the assignment.




The experience of each key team member is summarized below including the involvement and function of each member during various projects, and their qualifications. Resumes for each team member are provided in **Appendix A.**

## STEVEN KACAN, P.ENG. | PROJECT MANAGER

| | |
|---|---|
| **Years of experience: 8+** | Steven will be the Project Manager for this project. Steven possesses over 8 years of experiences in the Civil Engineering Industry, with 5 of those years working at EXP in the infrastructure Department. In the course of his time at EXP, Steven has worked on an array of projects that include Road Design, Sanitary and Storm Sewer Design, Site Grading and Drainage Design, Pre-Construction and Post-Construction Stormwater Analyses, Feasibility Studies, Construction Inspection, Contract Administration, Foundation and Subgrade Inspections, and Hydrotechnical Analyses. |

## MARK LANGILLE, P.ENG. | CO-PROJECT MANAGER

| | |
|---|---|
| **Years of experience: 30+** | Mark will act as the co-Project Manager and Senior Engineering Lead. Mark is a senior mechanical engineer with over 29 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 Administration during his professional career. |

### 1.1 Key Team Members

| Name, Credentials \| Role | Summary of Skills + Experience |
|---|---|
| STEVE CORMIER, P. ENG. \| SENIOR BRIDGE ENGINEER | Steve is a dedicated Structural Engineer who brings to the project team 13 years of experience and extensive involvement with bridge rehabilitation projects, feasibility engineering studies, preliminary design, detailed design, finite element analysis, procurement package preparation and construction support. He is familiar with design requirements in various design codes including, MTO manuals, Canadian Highway Bridge Design Code, and Ontario Building Code. He will be the Lead Bridge Engineer responsible for the detailed design and preparation of specifications. |
| MIKE CORNELL, P. ENG. \| BRIDGE ENGINEER | Mike is a Structural Engineer with seven years' experience. He primarily holds design roles in a variety of structural projects. He conducts field reviews and inspections as well as evaluation and design of structures including bridges, buildings, and earth retaining structures. In addition, he assists senior engineers with writing reports detailing observations of structural reviews and recommending rehabilitation strategies as well as proposals. Mike has experience with the performing and checking of engineering calculations for structural analysis and design, drafting, quantity take-off estimates and carrying out inspections for construction. |
| PETER FIRLA, P.ENG. \| SENIOR HYDROTECHNICAL ENGINEER | Peter brings strong infrastructure engineering as well as environmental and civil engineering skills for the benefit of the hydrological and hydraulic design of a variety of bridge and culvert projects. Peter applies best practices in this area of expertise. Some of Peter's relevant experience includes: Nepewassi Lake Bridge for the Municipality of Markstay-Warren; Nature's Trail Bridge for the Municipality of West Nipissing; Kelly Lake Road Culvert Replacement for the City of Greater Sudbury; and Kootenay Plains Creek Culverts for Alberta Transportation. |

| | |
|---|---|
| YVES BEAUPARLANT, P.ENG. \| SENIOR GEOTECHNICAL ENGINEER | Yves has worked as a geotechnical consultant as well as a field quality control inspector during his 20+ year professional career. He has broad experience in managing a wide range of geotechnical/environmental projects for clients including federal, provincial, and municipal governments; residential and commercial developers; mining companies; and, energy companies. He has substantial field and management experience with staff sizes ranging from 7 to 30 individuals and is currently the Manager of Earth and Environmental Services for Northern Ontario. Yves will oversee all geotechnical aspects of the project, monitor quality, and assume overall responsibility for the successful completion of the project on time and on budget. |
| SEAN MILLSAP \| SENIOR INSPECTOR | Sean has over 38 years of experience in inspection, construction supervision and contract administration of municipal servicing, transportation, and site and subdivision development projects. He is very familiar with all aspects of construction. Some of Sean's responsibilities typically include: Inspection duties including photographs and field notes, measurements, red-line drawings, payment quantities, review of changes, application of specifications; Ensure the contractor compliance with the standards and specifications of the contract documents; Prepare daily progress reports. This includes works orders, materials delivery, and daily inspections; Co-ordinate and co-operate with client project manager during their site inspections; and monitor contractor QA/QC activities and maintain relevant records. |

# 2 Project Understanding

Old Mill Road Bridge is 9.75 m single span, wood deck on steel girder bridge crossing the Kagawong River adjacent to the local marina. It is founded on wood crib abutments with stone wingwalls. The existing bridge is load posted and was damaged during construction of an unrelated project leading to closure of the structure. Given the condition and age of the existing structure, the Township has decided to replace rather than repair the bridge.

EXP understands that replacement of the bridge presents environmental challenges as the Kagawong River is a fish sanctuary with strict in-water work windows. It is further understood that replacement of the structure was not planned and that a cost-effective design is preferred. It is therefore essential to complete the Project on time and within the approved budget. In preparing this Proposal, our Project Manager and technical team have made sure that they understand the challenges of the present mandate and have delegated competent, available resources in sufficient numbers to assure delivery of the Project within deadlines and budget and according to the expectations of the Township. The project team assembled for the Old Mill Road Bridge Project includes experts in bridge engineering, bridge hydrology and hydraulics, and environmental assessments, with additional experts in geotechnical engineering, and public consultation in-house should any unforeseen circumstance arise. During the construction phase of the Project, our experienced Contractor Administrator and Inspectors will ensure the new Old Mill Road Bridge is constructed in conformance to the construction specification. Our goal is to provide an environmentally friendly, aesthetically pleasing, and cost-effective design.

# 3 Objectives

The objectives of this assignment are as follows:

- **Environmental Clearance**
    - Conduct and complete Schedule B Environmental Class EA, and
    - Consult with the MNRF and DFO, and Complete required permit applications.

- **Geotechnical Investigation** – develop a field program specific to the needs of this project in order to obtain information on the general subsurface soil, bedrock and shallow groundwater condition at the site by means of a limited number of boreholes and geotechnical laboratory tests. Based on our interpretation of the factual information collected, a general description of the subsurface condition along with foundation design recommendations will be determined.
- **Hydrology Analysis** – create hydraulic model of the proposed bridge and stream profile based on the topographic survey, calculate peak flow intensity and water elevation for specified design return period. This will also include a review of the existing adjacent flow relief culverts.
- **Bridge Engineering** – detailed design of the bridge replacement utilizing a steel modular bridge, preparation of construction drawings, specifications, and tender documents ready for tendering.
- Contract Administration – provide construction administration, construction inspection and periodic construction reviews, and construction material testing.

These objectives will be meet through the following work plan and methodology.

# 4 Work Plan, Methodology + List of Deliverables

The following Sections outline EXP's approach and methodology in support of our commitment to complete the services.

## 4.1 Project Initiation

A project kickoff meeting with the Township will be held at the project onset to introduce the project team, review the project schedule/workplan, communications and consultation plan, and key success criteria. Any adjustments to the project plan and schedule will also be discussed and agreed to during the kick-off meeting. The EXP team will identify background information required from the Township (if available) and conduct site visits to gather geotechnical information and survey data.

## 4.2 Engineering Agreement

Upon acceptance of our proposal, EXP is prepared to enter a Consultant Services Contract with the Corporation of the Township of Billings in accordance with the terms outlined in this proposal document.

## 4.3 Project Quality System

In Ontario, EXP's roots date back to 1906. Such sustained service demonstrates our firm's commitment to provide quality services tailored to each client's needs, through a strategic partnership with our client. Our team spirit and retention of personnel, the quality of our achievements, our qualifications and creativity as well as our great dedication to abide by set budgets and timelines are undoubtedly among the reasons why our clients often come back to us for several additional projects.

In order to provide effective engineering services based on our client's objectives, we offer:

- A well-defined working plan (client needs; construction requirements; financial, technical and physical restrictions; individual team member assignments; innovative concept; clear preliminary plans; accurate final plans and specifications; and diligent supervision).
- Technical resources with considerable experience as well as stability with EXP, guaranteeing the continuity of the team assigned to the project.
- A quality assurance process – contract review, start-up meeting, deliverables and costs monitoring, validation (quality and cost control), and document management – overseen by the Design Committee and intended to challenge the Project Manager and Design Team. The Quebec offices of EXP were certified ISO 9001 in January 1996 and the certification has since been reconfirmed numerous times by our registrar, Intertek. Our certification covers

all engineering services provided by EXP, including the rail and bridge functions. It should be noted that EXP has full-time in-house ISO 9001:2008 specialists to ensure that the quality management system remains current and proactive.

- Adequate material resources and effective management tools.
- A sustainability-minded technical approach (LEEDTM accredited personnel, member firm of the Canada Green Building Council).

#### 4.3.1 Delivery of Quality Documents

Communications between the client and the professionals are handled by the Project Manager. This is the person who will receive the information from the client and communicate it to the appropriate team members. The Project Manager also provides the agreed upon deliverables to the client.

In addition to coordination meetings with the client, EXP will hold several meetings internally to work closely with all groups involved in a project. Design reviews are planned prior to each document delivery in accordance with the company's Quality Manual. These design reviews ensure that the stated requirements have been met and that any compliance issues are identified and corrected. A Design and Quality Assurance Committee ensures that the quality system is monitored and documented.

All of these efforts lead to our fundamental objective, which is to consistently meet or exceed our client's expectations. Adherence to budget, deadlines and effective codes and regulations, without compromising on the quality of the services rendered, is a motivating challenge for us.

### 4.4 Detailed Communication Strategy

We understand that a successful design and construction project requires effective communication and engagement with stakeholders. It is a delicate, multi-directional process. Information communicated to stakeholders must be received and understandable, and information received from the stakeholder must be integrated, as necessary, into the project. To achieve efficient communication, our project team will develop a detailed communication strategy with milestone deadlines for the Township's review and input. EXP's Project Manager will work closely with the Township's Project Manager and any assigned communications staff on:

- Identification of target stakeholders;
- Planned consultation mechanisms, activities and timeframes; and
- Implementation tasks and schedule.

### 4.5 Methodology + Work Plan

#### 4.5.1 Approvals

The project team will determine from which agencies it will require approvals before the project can proceed. Initial contact will be established with the affected agencies to determine their requirements. These agencies would include:

- Ministry of Natural Resources and Forestry (MNRF),
- Department of Fisheries and Oceans (DFO), and
- Various utility companies.

#### 4.5.2 Topographic Survey

The topographic survey will include all elevations within the road Right of Way (R.O.W.), for a distance of 150 m each way from The Old Mill Road Bridge, at intervals not exceeding 20 m using state-of-the-art electronic survey equipment, along with a stream profile along the river within 100 m of the bridge. Furthermore, the survey will also

extend 150 m in both directions. Utility poles, guy wires, and other appurtenances will be transferred to our digital base plan. All survey work will be conducted to NAD 83 Geodetic Datum for both vertical and horizontal controls. Legal survey is not included as part of the scope of services discussed herein.

### 4.5.3 Geotechnical Investigation

#### Field Program

Prior to site mobilization, all public underground utilities will be cleared by EXP. Public buried service locates typically take 5 to 7 business days to obtain.

EXP will advance a total of four (4) boreholes for the replacement bridge. One (1) borehole will be advanced at each proposed abutment location. The abutment boreholes will be advanced to 10 m depth or to refusal on suspected bedrock, whichever is less. Bedrock, if encountered, will be cored 3.0 m at one (1) abutment borehole location. One (1) borehole will also be advanced at each approach location. The approach boreholes will be advanced to 6 m depth or to refusal on suspected bedrock, whichever is less. All boreholes will be advanced using a truck mounted, CME-55 drill rig. The sampled boreholes will be advanced using hollow stem augers and split spoon sampling equipment. Soil samples will be obtained at 0.75 m intervals for the upper 3.0 m and 1.5 m thereafter. The Standard Penetration Test (SPT) "N" values will be recorded at each sample interval. Should cohesive soils be encountered, field vane tests will be performed at regular intervals and Shelby tube samples will be obtained. Bedrock coring will be completed with NW casing and NQ core barrels.

During the field investigation, a technician from our office will be on-site to supervise the geotechnical investigation and collect and log the soil samples. All soil samples will be carefully packaged and transported to our laboratory for further examination and testing.

Groundwater levels will be measured in each borehole prior to backfilling. The boreholes will be backfilled with the augured material and sealed with bentonite.

All boreholes will be laid out in the field by EXP's geotechnical staff. All borehole locations and elevations will be obtained by means of hand-held GPS.

If unexpected or problematic soil conditions are encountered during the field investigation, which may affect the scope of work, you will be notified prior to the removal of the drill from site in order to determine a suitable plan of action.

#### Office Program

At the completion of the field investigation and laboratory testing, EXP will conduct an evaluation of subsurface conditions and prepare a geotechnical report which will provide the following:

- A plan showing the locations of the boreholes;
- Boreholes logs;
- Detailed descriptions and properties of soil, groundwater, and bedrock conditions encountered and associated design parameters;
- Laboratory test results;
- The appropriate types of foundations (shallow or deep) and associated recommendations that are best suited for the anticipated loads on the subgrade;
- Approach recommendations, including recommendations for vertical grade changes;
- Limit States design parameters;

- The total and differential settlement expected;
- Unit density of soil and coefficients of active and passive earth pressures for design of members resisting lateral loads;
- Estimated site classification for seismic response;
- Engineered fill requirements below the proposed foundations;
- Frost considerations;
- Excavation and dewatering requirements;
- Recommendations for the re-use of excavated soil;
- Backfilling requirements including types of imported fill and levels of compaction; and,
- General construction recommendations.

All design recommendations shall be in accordance with the appropriate codes and legislation. The final report will be signed and sealed by a qualified geotechnical engineer registered in the Province of Ontario.

### 4.5.4 Class B Environmental Assessment and Environmental Clearance

With respect to the Class EA process for this project, it is understood that the project scope will likely fall within the Class EA category Schedule B project, as the channel cross-section at the structure will be increased by both the removal of the centre pier and wider channel opening resulting from the increased span of the anticipated 50 ft modular bridge. The Schedule B Class EA involves preparation of a notice letter describing the project and location to be published, with a 30-day wait period for both the initial notice of project, as well as final notice (for the purpose of inviting comment), and a file of responses being maintained thereto. Notifications may be in the form of a newspaper ad as well as through posting on the Township's "News and Notices" website, as well as letters mailed out to residents near the bridge, groups, utility companies, First Nations, and government authorities (MOE, MNRF, etc.). Feedback received may affect the design. Ultimately, a summarizing EA report is provided which describes the comment received, the responses, and has copies of the notifications in the appendices.

Furthermore, in consultation with the local MNRF during the early stages of the project, we will prepare the appropriate MNRF Application for Work Permit forms related to Water Crossings. Related construction requirements from the MNRF as part of the Permit conditions will be incorporated into the detailed design. Note that additional special studies and reports, such as Species at Risk Act studies, archaeological studies, fish habitat, background studies on the local environment, etc., if required, would be additional to the scope of the proposed design.

Finally, based on a preliminary assessment of the fish species that are present and in consultation with the *In-water Work Timing Window Guidelines*, Ontario Ministry of Natural Resources, March 11, 2013, it is expected that in-water work is restricted from September 1$^{st}$ through to July 15$^{th}$ of the following year. These details will be confirmed with the Local MNRF office during the first phase of the project.

### 4.5.5 Hydrology

The subject crossing carries Old Mill Road, above the Kagawong River. To carry out a detailed assessment of the hydraulic capacity of the proposed replacement bridge and the adjacent relief culverts, the hydrological portion of the project will commence with the confirmation of the peak design flow to use for the analysis.

A review will be carried out for this location with the Township, and per standard Canadian Highway Bridge Design Code guidelines to determine the most appropriate design return period for calculating the peak design flow. In order to determine a reliable peak flow figure, the design flow at the site will be based on a review of multiple sources, which will include:

- Review of relevant information from any past site reports, observations, or other design information, which may be available for the existing bridge at the site, via an inquiry to the Township's archives. Available information may be based on older flow statistics and/or calculation methods, and not necessarily as reliable as a fresh hydrological assessment, but any relevant data in the reports will be compiled and used for consideration of the subject site's design flow.
- Review of this bridge location using the Ministry of Natural Resource's on-line watershed calculation database, the Ontario Flow Assessment Tool (OFAT) will be carried out to obtain estimates of the subject bridge's watershed area, slope, and the geography of the watershed (e.g., forest cover and lake area effects on runoff), which will guide design flow calculations.
- Empirical calculations will be used, based on the approach provided in the most current MTO Drainage Manual, specific to Northern Ontario-type watersheds via the Modified Index Flood Method, as well as the Northern Ontario Hydrology Method as applicable.
- Unfortunately, there are no known stream gauges in the bridge locale, per an inquiry to the Environment Canada database of gauges.

The design flows determined from the above sources will be compared and considered, and a representative peak design flow will ultimately be selected, from which will be determined the hydraulic capacity of the existing bridge, as well as other proposed design alternatives that may be included in the selection process. An examination of characteristics of the local channel, substrate, and stream banks using both visual observations and the site survey will help to determine: the local roughness coefficient of the natural channel, and potential local obstructions or hydraulic barriers to flow.

The topographical survey will provide existing elevations and grades related to local built infrastructure such as roads and homes, as well as the local upstream and downstream channel cross-section, the grade of the water surface, and the stream bed itself, along with detailed dimensions and elevations at the existing bridge. The effect of the design flow on the existing and proposed bridges can be determined, as well as the proposed opening's total hydraulic capacity, to ensure sufficient freeboard at local built structures. Using an appropriate hydraulic modelling program, the design flow will be tested upon the proposed replacement bridge, in order to ensure that it will provide sufficient capacity for the peak design flow. It is assumed that the adjacent existing relief flow culverts will remain in their current location; their contribution to the stream's flow capacity will be taken into account with the hydraulic flow model.

Details about the above hydrological review, hydraulic analyses, findings, and conclusions will be included in a hydrology report design brief as part of the bridge design prior to detailed structural design of the preferred bridge option. Assuming the replacement bridge span allows them to remain, a review of the existing adjacent culverts will also be taken into account, and their capacities and details with respect their effects and potential benefits under varying flow conditions.

### 4.5.6 Detailed Design Drawing and Specifications

EXP will design the bridge approaches to conform to the requirements of applicable Ontario Geometric Design Guide for Canadian Roads.

EXP will design new abutments to support the bridge. It is understood that a prefabricated modular steel bridge is preferred.

We will carry out the design work in accordance with the latest edition of all design codes and standards including but not necessarily limited to the following:

- CAN/CSA-S6-19 Canadian Highway Bridge Design Code,

- MTO Structural Manual,
- MTO Contract Design, Estimating and Documentation Manual, and
- Ontario Provincial Standards.

All reports and construction drawings will be stamped by both the design and design check engineers.

**Examination of Background Information**

All relevant background documents will be collected and reviewed. This will include OSIM reports and existing surveys available from the Township, including all ownership information available.

Our lead bridge engineer responsible for the design and members of our bridge design team will also visit the site to familiarize ourselves with the site conditions. Special topographic features and design and construction restraints will be identified during this visit.

**Detailed Design**

EXP project team will complete the detailed design of the replacement structure and of the Old Mill Road Alignment, as required to accommodate any change in the Old Mill Road vertical or horizontal alignment. The work will include the following:

- Detailed plan & profile for Old Mill Road bridge approaches on both sides. Design will tie back into Old Mill Road approximately 50m east and west of bridge,
- All calculations and references regarding horizontal & vertical alignment, and traffic control measures used in final design will be documented,
- Sections & Details – Cross sections and detail drawings will be included in final deliverable,
- Detailed Bridge Abutment/Foundation Designs – Design will adhere to all applicable design codes and MTO standards and guidelines,
- Coordinate utility relocation/adjustments as required,
- Confirm Municipal Class EA status and complete all remaining prescribed activities,
- Submit design drawings at 60% and 90% completion stage providing the Township officials with the opportunity to review and make any comments, and
- Issued for Construction – Drawings and Specifications. We will prepare the necessary documents which will include all detailed construction drawings and specifications.

### 4.5.7 Contract Administration and Construction Review

- Construction Administration – Chair start-up and progress meetings. During construction, our Contract Administrator will oversee onsite inspection activities, review & respond to payment submissions, change orders, and requests for clarification. The design engineers of the project will also be available for consultation on technical issues during construction.
- Construction Reviews – Our inspector will review the construction at various mile-stone phases to ensure the work is performed in general conformance to the design and specification.
- Quality Assurance – Construction quality assurance services will generally include subgrade review, backfill compaction testing, concrete testing, granular and asphalt compaction testing. We will also conduct laboratory material testing including concrete compressive strength, Gilson sieve analysis, and standard proctor testing to ensure construction materials supplied are in conformance to Specification.
- Post Construction – prepare Substantial Completion Certificate, conduct final site review.
- As-Built and Record Data – Upon completion of the construction, we will prepare and submit as-built drawings and relevant construction records such as Change Orders, material testing results, etc.

# 5 Deliverables

All deliverables including drawings and specifications identified in the Request for Proposal document will be submitted to the Township, according to the Project Schedule, by EXP in the specified media and format. The following list of deliverables are anticipated for the scope of this project.

- Project Kick-off Meeting Minutes
- Geotechnical Investigation Report
- Hydrology Report
- 60% Design Review Meeting and Minutes
- 90% Design Review Meeting and Minutes
- Acquired Permits from Governing Agencies (as required)
- Pre-Construction Meeting Agenda and Minutes
- Bi-Weekly Progress Meeting Minutes
- Progress Payment Certificates
- Substantial Completion Certificate
- Contract Completion Certificate
- As-built Drawings

# 6 Added Value

EXP is uniquely situated to provide all the required services, in house as a single service provider. This not only provides seamless transition between the various disciplines involved and phases of the project, but also streamlines communication between the entire project team, from project award through to client satisfaction at project completion. This ultimately leads to providing results in a timelier fashion, while maintaining a higher level of quality. This is critical for a project of this nature with such a small in-water work window and focus to re-opening unrestricted traffic over the Old Mill Road Bridge in the 2023 Construction Season.

Furthermore, it should be noted that, if the results of the hydraulic analysis indicate that the hydraulic capacity of the existing bridge opening is inadequate and needs to be increase, it may negatively impact the residents immediately downstream by allowing flows to move faster with less restriction past the subject bridge, to potentially downstream flooding conditions. The extent of this undesirable condition, if any, will be determined through the hydraulic model and should mitigation measures be required, such as bank stabilization or modifications, EXP can provide a change order to address the issue in a timely manner, once they have been identified.

# 7 Project Schedule

The project schedule is to be determined.

# 8 Financial

## 8.1 Project Fees

A comprehensive analysis of the services to be provided for this assignment have been undertaken and an estimate of cost, on a time basis plus disbursements, has been prepared for the Work Plan outlined in this Proposal.

The total estimated cost presented herewith can be considered an upset limit and will not be exceeded without approval, in writing, from the Corporation of the Township of Billings. Municipal EA and Environmental Clearance/Permits professional fees are based on the assumption that this is a Schedule B Project, and that the Township owns the property on which the subject bridge is located. Please also note that all applicable permit fees and tender advertisement fee are not included in the following cost.

Project Management and Coordination ..... $8,605.00
Structural Design ..... $26,732.00
Hydrology and Design Flow Analysis ..... $7,500.00
Municipal Class EA Schedule B ..... $3,200.00
Permitting (MECP, DFO, TC, MNRF) ..... $2,945.00
Site Grading/Approach Alignment ..... $3,280.00
Geotechnical Investigation ..... $12,365.00

**Total Estimated Fees (excluding HST) $64,627.00**

Contract Administration and Inspection ..... $4,100.00/week
**(Allowed for 12 hours per day at 3 days per week, including travel and 5 hours per week for Contract Administration)**

## 8.2 Hourly Rates and Disbursements

The hourly rates of key staffs and disbursement cost are as follows. These charge-out rates will be used for extra work authorized by the Township to be completed in 2023.

| Staff | Hourly Rate |
|---|---|
| Senior Technical Review | $205/hr |
| Project Manager | $195/hr |
| Senior Geotechnical Engineer | $190/hr |
| Senior Civil Engineer | $180/hr |
| Senior Bridge Engineer | $155/hr |
| Intermediate Engineer | $130/hr |
| Junior Engineer | $115/hr |
| Contract Administrator | $85/hr |
| Technical Staff | $90/hr |
| Administration Support | $80/hr |
| Survey Crew | $160/hr |
| **Disbursements** | |
| Mileage | $0.69/km |
| Purolator | At Cost |
| Accommodations | At Cost |

EXP
885 Regent St. | Sudbury, ON P3E 5M4
t: +1.705.674.9681| exp • com

**Municipal Structure Inspection Form** **MTO Site Number:**

## Inventory Data:

| | | | |
|---|---|---|---|
| Structure Name | OLD MILL ROAD BRIDGE (#2) | | |
| Main Hwy/Road # | | On ☑ Under | Crossing Type: Navig. Water / Non-Navig. Water ☑ / Rail / Road / Ped. / Other |
| Road Name | OLD MILL ROAD | | |
| Structure Location | CONCESSION 16, LOT 27 | | |
| Latitude | | Longitude | |
| Owner(s) | TOWNSHIP OF BILLINGS | Heritage Designation: | Not Cons.☑ / Cons./not App. / List/not Desig. / Desig./Not List / Desig. & List |
| MTO Region * | NORTHEASTERN | Road Class: | Freeway / Arterial / Collector / Local ☑ |
| MTO District * | SUDBURY | Posted Speed | | No. of Lanes | 2 |
| Old County * | MANITOULIN | AADT | | % Trucks | |
| Geographic Twp. * | BILLINGS | Special Routes: | Transit / Truck ☑ School / Bicycle |
| Structure Type * | DECK-ON-GIRDER | Detour Length Around Bridge | 6 (km) |
| Total Deck Length | 9.75 (m) | Fill on Structure | 0 (m) |
| Overall Str. Width | 7.36 (m) | Skew Angle | 0 (degrees) |
| Total Deck Area | 72 (sq.m) | Direction of Structure | E to W |
| Roadway Width | 7.06 (m) | No. of Spans | 1 (m) |
| Span Lengths | 6.0 (m) | | |

## Historical Data:

| | | | |
|---|---|---|---|
| Year Built | -- | Last Biennial Inspection | 2020 |
| Current Load Limit | 10 (tonnes) | Last BridgeMaster Inspection | -- |
| Load Limit Bylaw # | -- | Last Evaluation | -- |
| Bylaw Expiry Date | -- | Last Underwater Inspection | -- |
| Min. Vertical Clearance | N/A (m) | Last Condition Survey | -- |

Rehab. History: (Date/description)

**2009**
- New laminated wood deck
- New steel beam guiderails on structure and approaches
- New wood hand railing, posts and braces on structure
- 4 new masonry block retaining walls
- New outer beams
- Original beams extended

**2010**
-Prime and Chip added to top of timber deck

**Municipal Structure Inspection Form** **MTO Site Number:**

| **Field Inspection Information:** | |
|---|---|
| Date of Inspection: | September 28, 2022 |
| Inspector: | Allan Garnham, P. Eng. |
| Others in Party: | David Zahorak, E.I.T. |
| Equipment Used: | Tapes, Hammer, Ladder, Camera, Chain, Safety Equipment |
| Weather: | Cloudy |
| Temperature: | 8°C |

| **Additional Investigations Required:** | | Priority | | | Estimated Cost |
|---|---|---|---|---|---|
| | | None | Normal | Urgent | |
| Detailed Deck Condition Survey: | | ✓ | | | 0 |
| DART Survey: | | ✓ | | | 0 |
| Detailed Coating Condition Survey: | | ✓ | | | 0 |
| Underwater Investigation: | | ✓ | | | 0 |
| Fatigue Investigation: | | ✓ | | | 0 |
| Seismic Investigation: | | ✓ | | | 0 |
| Structure Evaluation: | | ✓ | | | 0 |
| Load Posting – Estimated Load | CHBDC | | | Total Cost | 0 |
| Special Notes: | | | | | |
| Next Detailed Inspection: 2024 | | | | | |

**Suspected Performance Deficiencies**

| | | | | | |
|---|---|---|---|---|---|
| 01 | Load carrying capacity | 06 | Bearing not uniformly loaded/unstable | 12 | Slippery surfaces |
| 02 | Excessive deformations (deflections & rotations) | 07 | Jammed expansion joint | 13 | Flooding/channel blockage |
| 03 | Continuing settlement | 08 | Pedestrian/vehicular hazard | 14 | Undermining of foundation |
| 04 | Continuing movements | 09 | Rough riding surface | 15 | Unstable embankments |
| 05 | Seized bearings | 10 | Surface ponding | 16 | Other |
| | | 11 | Deck drainage | | |

**Maintenance Needs**

| | | | | | |
|---|---|---|---|---|---|
| 01 | Lift and Swing Bridge Maintenance | 07 | Repair to Structural Steel | 13 | Erosion Control at Bridges |
| 02 | Bridge Cleaning | 08 | Repair of Bridge Concrete | 14 | Concrete Sealing |
| 03 | Bridge Handrail Maintenance | 09 | Repair of Bridge Timber | 15 | Rout and Seal |
| 04 | Painting Steel Bridge Structures | 10 | Bailey Bridges - Maintenance | 16 | Bridge Deck Drainage |
| 05 | Bridge Deck Joint Repair | 11 | Animal/Pest Control | 17 | Other |
| 06 | Bridge Bearing Maintenance | 12 | Bridge Surface Repair | | |

**Municipal Structure Inspection Form** **MTO Site Number:**

## Element Data

| | | | |
|---|---|---|---|
| Element Group: * | Abutments | Length: | 1.3 x 2 |
| Element Name: * | Abutment Walls | Width: | 6.3 |
| Location: | East and West | Height: | 2.5 |
| Material: * | Wood and Rock | Count: | 2 |
| Element Type: * | Crib | Total Quantity: | 44 |
| Environment: | Benign / Moderate / Severe | Limited Insp'n: | ☑ |
| Protection System: * | Creosote | | |

| Condition Data: | Units | Exc. | Good | Fair | Poor | Perform. Deficiencies | Maint. Needs |
|---|---|---|---|---|---|---|---|
| | $m^2$ / m / each / % / all | | | 32 | 12 | -- | -- |

**Comments:** Abutments are generally in fair to poor condition. Signs that both cribs are tilting towards the creek with a significant loss of rocks at the bottom. There are significant gaps between the timbers. The bottom timbers at both cribs are either missing or very rotten, providing no support to the front face of the cribs. Connections between crib members have failed on both sides.

**Recommended Work:** None ☐ 6 –10 years ☐ 1 – 5 years ☑ < 1 year Urgent ☐

Replace Bridge.

| | | | |
|---|---|---|---|
| Element Group: * | Abutments | Length: | 4.0 |
| Element Name: * | Wingwalls | Width: | -- |
| Location: | Corners of Structure | Height: | 2.5 |
| Material: * | Concrete Blocks | Count: | 4 |
| Element Type: * | -- | Total Quantity: | 40 |
| Environment: | Benign / Moderate / Severe | Limited Insp'n: | |
| Protection System: * | None | | |

| Condition Data: | Units | Exc. | Good | Fair | Poor | Perform. Deficiencies | Maint. Needs |
|---|---|---|---|---|---|---|---|
| | $m^2$ / m / each / % / all | | 40 | | | -- | -- |

**Comments:**

Retaining walls are in good condition.

Possible load carrying concern as these walls support exterior bridge girders.

Undermining was noted at the southwest wingwall.

**Recommended Work:** None ☐ 6 –10 years ☐ 1 – 5 years ☑ < 1 year Urgent ☐

Place additional rock protection at upstream wingwalls to prevent erosion and undermining of walls.

| | | | |
|---|---|---|---|
| Element Group: * | Accessories | Length: | |
| Element Name: * | Signs | Width: | |
| Location: | Corners of Structure | Height: | |
| Material: * | Aluminum | Count: | 4 |
| Element Type: * | -- | Total Quantity: | 4 |
| Environment: | Benign / Moderate / Severe | Limited Insp'n: | |
| Protection System: * | | | |

| Condition Data: | Units | Exc. | Good | Fair | Poor | Perform. Deficiencies | Maint. Needs |
|---|---|---|---|---|---|---|---|
| | $m^2$ / m / each / % / all | 4 | | | | -- | -- |

**Comments:**

**Recommended Work:** None ☑ 6 –10 years ☐ 1 – 5 years < 1 year Urgent ☐

**Municipal Structure Inspection Form** **MTO Site Number:**

## Element Data

| | | | |
|---|---|---|---|
| Element Group: * | Approaches | Length: | 6.0 |
| Element Name: * | Wearing Surface | Width: | 7.0 |
| Location: | East and West | Height: | -- |
| Material: * | Prime and Chip | Count: | 2 |
| Element Type: * | -- | Total Quantity: | 84 |
| Environment: | Benign / Moderate / (Severe) | Limited Insp'n: | |
| Protection System: * | None | | |

| Condition Data: | Units | Exc. | Good | Fair | Poor | Perform. Deficiencies | Maint. Needs |
|---|---|---|---|---|---|---|---|
| | ($m^2$) / m / each / % / all | | 8 | | | -- | -- |

**Comments:**
Minor erosion at all four corners.
Some material has been placed at corners.

**Recommended Work:** None ☑ 6 –10 years ☐ 1 – 5 years ☐ < 1 year Urgent

| | | | |
|---|---|---|---|
| Element Group: * | Approaches | Length: | 26.3 (total) |
| Element Name: * | Barriers | Width: | |
| Location: | Corners of Structure | Height: | |
| Material: * | Wood and Steel | Count: | |
| Element Type: * | SBGR | Total Quantity: | 26.3 |
| Environment: | Benign / Moderate / (Severe) | Limited Insp'n: | |
| Protection System: * | Pressure Treated and Hot Dip Galvanizing | | |

| Condition Data: | Units | Exc. | Good | Fair | Poor | Perform. Deficiencies | Maint. Needs |
|---|---|---|---|---|---|---|---|
| | ($m^2$) / (m) / each / % / all | | 26.3 | | | -- | -- |

**Comments:**
Steel beam guide rail at approaches new in 2009 and in good condition.
One rotten post was noted at the northeast corner of the structure.

**Recommended Work:** None ☑ 6 –10 years ☐ 1 – 5 years < 1 year Urgent

| | | | |
|---|---|---|---|
| Element Group: * | Barriers | Length: | 9.7 |
| Element Name: * | Railing System | Width: | -- |
| Location: | North and South | Height: | -- |
| Material: * | Steel | Count: | 2 |
| Element Type: * | SBGR | Total Quantity: | 19.4 |
| Environment: | Benign / Moderate / (Severe) | Limited Insp'n: | |
| Protection System: * | Hot Dip Galvanizing | | |

| Condition Data: | Units | Exc. | Good | Fair | Poor | Perform. Deficiencies | Maint. Needs |
|---|---|---|---|---|---|---|---|
| | ($m^2$) / (m) / each / % / all | | 19.4 | | | -- | -- |

**Comments:**
Steel beam guide rail panels new in 2009 and in good condition.
Missing bolts in rail splices at 4 locations.

**Recommended Work:** None ☑ 6 –10 years ☐ 1 – 5 years ☐ < 1 year Urgent

**Element Data**

| | | | |
|---|---|---|---|
| Element Group: * | Barriers | Length: | -- |
| Element Name: * | Posts | Width: | -- |
| Location: | North and South | Height: | 0.94 |
| Material: * | Wood | Count: | 6 x 2 |
| Element Type: * | -- | Total Quantity: | 12 |
| Environment: | Benign / Moderate / (Severe) | Limited Insp'n: | |
| Protection System: * | Pressure Treated | | |

| Condition Data: | Units | Exc. | Good | Fair | Poor | Perform. Deficiencies | Maint. Needs |
|---|---|---|---|---|---|---|---|
| | $m^2$ / m / (each) / % / all | | 12 | | | -- | -- |

**Comments:**
Wood barrier posts on structure are new in 2009 and are in good condition.

**Recommended Work:** None ☑ 6 –10 years ☐ 1 – 5 years ☐ < 1 year Urgent

| | | | |
|---|---|---|---|
| Element Group: * | Barriers | Length: | 9.7 |
| Element Name: * | Hand Railings | Width: | |
| Location: | North and South | Height: | |
| Material: * | Wood | Count: | 2 |
| Element Type: * | -- | Total Quantity: | 19.4 |
| Environment: | Benign / Moderate / (Severe) | Limited Insp'n: | |
| Protection System: * | Pressure Treated | | |

| Condition Data: | Units | Exc. | Good | Fair | Poor | Perform. Deficiencies | Maint. Needs |
|---|---|---|---|---|---|---|---|
| | ($m^2$) / m / each / % / all | | 19.4 | | | -- | -- |

**Comments:**
Wood hand railings on the structure are new in 2009 and are in good condition.

**Recommended Work:** None ☑ 6 –10 years ☐ 1 – 5 years ☐ < 1 year Urgent

| | | | |
|---|---|---|---|
| Element Group: * | Beams | Length: | 7.2 |
| Element Name: * | Girders | Width: | 0.235 |
| Location: | Exterior | Height: | 0.300 |
| Material: * | Steel | Count: | 2 |
| Element Type: * | I-Type | Total Quantity: | 18.8 |
| Environment: | (Benign) / Moderate / Severe | Limited Insp'n: | |
| Protection System: * | None | | |

| Condition Data: | Units | Exc. | Good | Fair | Poor | Perform. Deficiencies | Maint. Needs |
|---|---|---|---|---|---|---|---|
| | ($m^2$) / m / each / % / all | | 18.8 | | | -- | -- |

**Comments:**
2 new exterior girders installed in 2009 are in good condition.

**Recommended Work:** None ☑ 6 –10 years ☐ 1 – 5 years < 1 year Urgent

## Element Data

| | | | |
|---|---|---|---|
| Element Group: * | Beams | Length: | 7.2 |
| Element Name: * | Girders | Width: | 0.235 |
| Location: | Outer | Height: | 0.600 |
| Material: * | Steel | Count: | 2 |
| Element Type: * | I-Type | Total Quantity: | 27.4 |
| Environment: | (Benign) / Moderate / Severe | Limited Insp'n: | |

| Protection System: * | None | | | | | Perform. Deficiencies | Maint. Needs |
|---|---|---|---|---|---|---|---|
| **Condition Data:** | Units | Exc. | Good | Fair | Poor | | |
| | (m²) / m / each / % / all | | | 27.4 | | -- | -- |

**Comments:**
Riveted girders (original) in fair condition.

**Recommended Work:** None ☐ 6 –10 years ☐ 1 – 5 years ☑ < 1 year Urgent

Replace bridge

| | | | |
|---|---|---|---|
| Element Group: * | Beams | Length: | 8.4 |
| Element Name: * | Girders | Width: | 0.165 |
| Location: | Inner | Height: | 0.600 |
| Material: * | Steel | Count: | 2 |
| Element Type: * | I-Type | Total Quantity: | 28 |
| Environment: | (Benign) / Moderate / Severe | Limited Insp'n: | |

| Protection System: * | None | | | | | Perform. Deficiencies | Maint. Needs |
|---|---|---|---|---|---|---|---|
| **Condition Data:** | Units | Exc. | Good | Fair | Poor | | |
| | (m²) / m / each / % / all | | | 28 | | -- | -- |

**Comments:**
Inner girders (original) are in fair condition.

**Recommended Work:** None ☑ 6 –10 years ☐ 1 – 5 years ☑ < 1 year Urgent

Replace bridge

| | | | |
|---|---|---|---|
| Element Group: * | Deck | Length: | 9.7 |
| Element Name: * | Wearing Surface | Width: | 7.4 |
| Location: | All | Height: | ---- |
| Material: * | Prime and Chip | Count: | 1 |
| Element Type: * | -- | Total Quantity: | 72 |
| Environment: | Benign / Moderate / (Severe) | Limited Insp'n: | |

| Protection System: * | | | | | | Perform. Deficiencies | Maint. Needs |
|---|---|---|---|---|---|---|---|
| **Condition Data:** | Units | Exc. | Good | Fair | Poor | | |
| | (m²) / m / each / % / all | | | 18 | 54 | -- | -- |

**Comments:**
Wearing surface is in fair-to-poor condition with areas of exposed deck and multiple cracking throughout.

**Recommended Work:** None ☐ 6 –10 years ☐ 1 – 5 years ☑ < 1 year Urgent
Replace bridge.

**Element Data**

| | | | |
|---|---|---|---|
| Element Group: * | Deck | Length: | 9.7 |
| Element Name: * | Deck Top | Width: | 7.4 |
| Location: | All | Height: | -- |
| Material: * | Wood | Count: | 1 |
| Element Type: * | Laminated Wood Decking | Total Quantity: | 72 |
| Environment: | Benign / Moderate / (Severe) | Limited Insp'n: | ☑ |
| Protection System: * | Prime and Chip Wearing Surface | | |

| Condition Data: | Units | Exc. | Good | Fair | Poor | Perform. Deficiencies | Maint. Needs |
|---|---|---|---|---|---|---|---|
| | ($m^2$) / m / each / % / all | | 58 | 7 | 7 | -- | -- |

**Comments:**
Wood deck is assumed to be in good condition where covered with prime and chip wearing surface. Deck top is soft where surface treatment is missing. There is a sag at the northeast corner where water ponds.

**Recommended Work:** None ☑ 6 –10 years ☐ 1 – 5 years < 1 year Urgent

| | | | |
|---|---|---|---|
| Element Group: * | Deck | Length: | 9.7 |
| Element Name: * | Soffit | Width: | 5.9 |
| Location: | All | Height: | -- |
| Material: * | Wood | Count: | 1 |
| Element Type: * | -- | Total Quantity: | 57 |
| Environment: | Benign / (Moderate) / Severe | Limited Insp'n: | |
| Protection System: * | Pressure Treated | | |

| Condition Data: | Units | Exc. | Good | Fair | Poor | Perform. Deficiencies | Maint. Needs |
|---|---|---|---|---|---|---|---|
| | ($m^2$) / m / each / % / all | | 57 | | | -- | -- |

**Comments:**
Soffit is in good condition.

**Recommended Work:** None ☑ 6 –10 years ☐ 1 – 5 years < 1 year Urgent

| | | | |
|---|---|---|---|
| Element Group: * | Embankments & Streams | Length: | -- |
| Element Name: * | Embankments | Width: | -- |
| Location: | Corners of Structure | Height: | |
| Material: * | Earth | Count: | 6 |
| Element Type: * | -- | Total Quantity: | 6 |
| Environment: | Benign / (Moderate) / Severe | Limited Insp'n: | |
| Protection System: * | Rock and Vegetation | | |

| Condition Data: | Units | Exc. | Good | Fair | Poor | Perform. Deficiencies | Maint. Needs |
|---|---|---|---|---|---|---|---|
| | $m^2$ / m / each / % / (all) | | 6 | | | -- | -- |

**Comments:**
The embankments are well vegetated with rock protection along the normal waterline.

**Recommended Work:** None ☑ 6 –10 years ☐ 1 – 5 years < 1 year Urgent

**Municipal Structure Inspection Form** **MTO Site Number:**

## Element Data

| | | | |
|---|---|---|---|
| Element Group: * | Embankments & Streams | Length: | -- |
| Element Name: * | Slope Protection | Width: | -- |
| Location: | Corners of Structure | Height: | |
| Material: * | Rock and Vegetation | Count: | 6 |
| Element Type: * | -- | Total Quantity: | 6 |
| Environment: | Benign / (Moderate) / Severe | Limited Insp'n: | |
| Protection System: * | | | |

| Condition Data: | Units | Exc. | Good | Fair | Poor | Perform. Deficiencies | Maint. Needs |
|---|---|---|---|---|---|---|---|
| | m² / m / each / % / (all) | | 6 | | | -- | -- |

**Comments:**
Embankments are well protected with rock and vegetation

**Recommended Work:** None ☑ 6 –10 years ☐ 1 – 5 years < 1 year Urgent

| | | | |
|---|---|---|---|
| Element Group: * | Embankments & Streams | Length: | |
| Element Name: * | Streams and Waterways | Width: | |
| Location: | -- | Height: | |
| Material: * | -- | Count: | 1 |
| Element Type: * | -- | Total Quantity: | 1 |
| Environment: | Benign / (Moderate) / Severe | Limited Insp'n: | |
| Protection System: * | Pressure Treated | | |

| Condition Data: | Units | Exc. | Good | Fair | Poor | Perform. Deficiencies | Maint. Needs |
|---|---|---|---|---|---|---|---|
| | m² / m / each / % / (all) | | 1 | | | -- | -- |

**Comments:**
No obstructions noted.

**Recommended Work:** None ☑ 6 –10 years ☐ 1 – 5 years < 1 year Urgent

| | | | |
|---|---|---|---|
| Element Group: * | Sidewalks/Curbs | Length: | 9.7 |
| Element Name: * | Curbs | Width: | 0.150 |
| Location: | North and South | Height: | 0.150 |
| Material: * | Wood | Count: | 2 |
| Element Type: * | -- | Total Quantity: | 8.7 |
| Environment: | Benign / Moderate / (Severe) | Limited Insp'n: | |
| Protection System: * | Pressure Treated | | |

| Condition Data: | Units | Exc. | Good | Fair | Poor | Perform. Deficiencies | Maint. Needs |
|---|---|---|---|---|---|---|---|
| | (m²) / m / each / % / all | | 8.7 | | | -- | -- |

**Comments:**
Wood curbs are in good condition with minor splitting

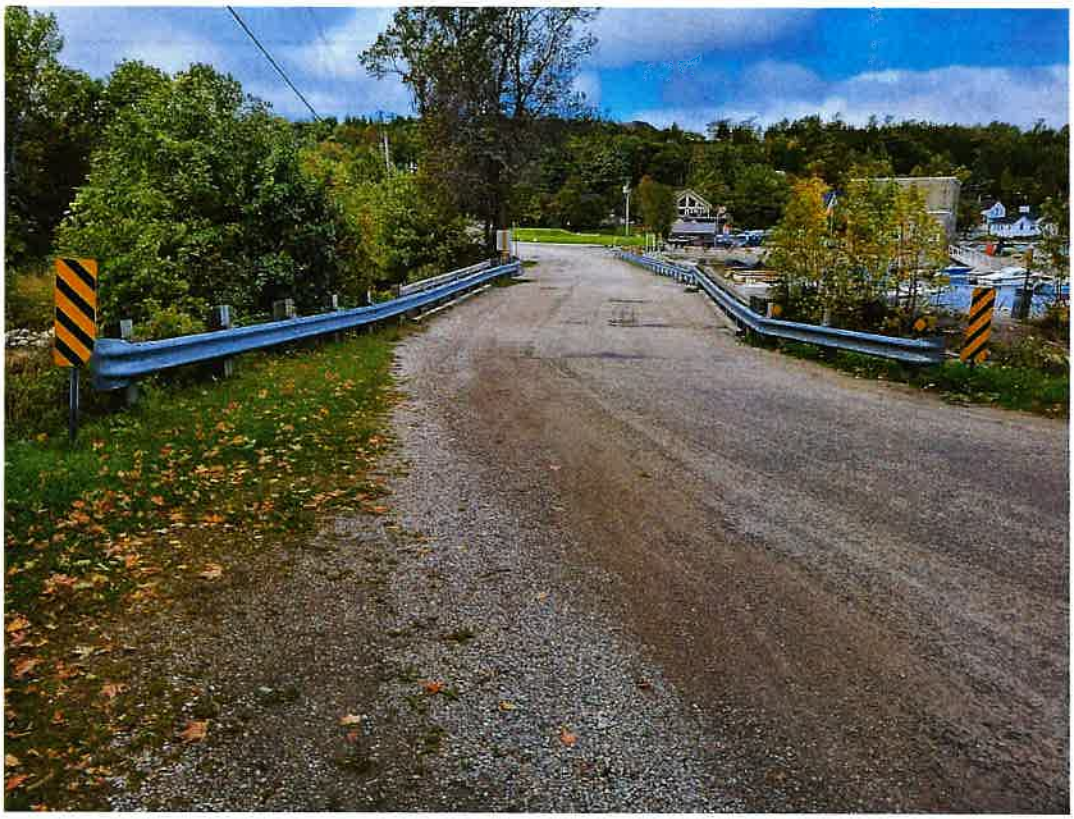
**Recommended Work:** None ☑ 6 –10 years ☐ 1 – 5 years ☐ < 1 year Urgent

**Municipal Structure Inspection Form** **MTO Site Number:**

| **Repair and Rehabilitation Required:** | | Priority | | | | Estimated **Construction** Cost |
|---|---|---|---|---|---|---|
| Element | Repair and Rehabilitation Required | 6 to 10 years | 1 to 5 years | Within 1 year | Urgent | |
| | | | | | | |
| Bridge | Replace Structure | | X | | | $ 1,000,000 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | Total Cost | $ 1,000,000 |

| **Associated Work:** | Comments | Estimated Cost |
|---|---|---|
| Approaches: | | |
| Detours: | | |
| Traffic Control: | | |
| Utilities: | | |
| Right of Way: | | |
| Environmental Study: | | |
| Other: | Engineering & Contract Administration | $ 200,000 |
| Contingencies: | | |
| | Total Cost | $ 1,200,000 |

| **Justification:** |
|---|
| Replacement of the entire structure in 1 to 5 years is recommended. |



1. East Approach (looking west)


2. West Approach (looking east)

BY-LAW NO 2023-44

# BEING A BY-LAW TO CONFIRM THE PROCEEDINGS OF THE COUNCIL OF THE TOWNSHIP OF BILLINGS

**WHEREAS** the Municipal Act S.O. 2001, c 25, Section 5(1), as amended, provides that the powers of a municipal corporation are to be exercised by its Council;

**AND WHEREAS** the Municipal Act S.O. 2001, c 25, Section 5(3), as amended, provides that a municipal power, including a municipality's capacity rights, powers and privileges under Section 9; shall be exercised by By-Law;

**AND WHEREAS** The Council for The Corporation of the Township of Billings deems it expedient that the proceedings of meetings of the Council be confirmed and adopted by By-Law;

**NOW THEREFORE** the Council of The Corporation of the Township of Billings enacts as follows:

1. THAT the actions of the Council of The Corporation of The Township of Billings at its Council Meeting held on May 25th, 2023 in respect to each report, motion, resolution or other actions recorded and taken by Council at its meetings, except where the prior approval of the Ontario Lands Tribunal is required is hereby adopted, ratified and confirmed as if all such proceedings were expressly embodied in this By-Law.

2. THAT the Mayor and CAO/Clerk, or such other official as deem appropriate are hereby authorized and directed to do all things necessary to give effect to the said action, of Council of the Township of Billings referred to in the proceeding section.

3. THAT the Mayor and CAO/Clerk are hereby authorized and directed to execute all documents necessary on behalf of the Council and to affix the corporate seal of The Corporation of The Township of Billings to all such documents.

4. THIS By-Law shall come into full force and effect upon final passage.

5. THIS By-Law may be cited as the "May 25th, 2023 Confirmatory By-Law".

**READ** a **FIRST** and **SECOND TIME** this 25th day of May, 2023

**READ** a **THIRD TIME** and **FINALLY PASSED** this 25th day of May, 2023

Bryan Barker, Mayor

Emily Dance, CAO/Clerk